BEFORE THE PUBLIC UTILITIES COMMISSION OF THE STATE OF CALIFORNIA

Order Instituting Rulemaking to Continue Electric Integrated Resource Planning and Related Procurement Processes

Rulemaking 20-05-003

MARIN CLEAN ENERGY 2022 INTEGRATED RESOURCE PLAN (PUBLIC VERSION)

Ann C. Springgate Keyes & Fox LLP 580 California Street, 12th Floor San Francisco, CA 94104 415.987-8367 aspringgate@keyesfox.com

Counsel to Marin Clean Energy

November 1, 2022

BEFORE THE PUBLIC UTILITIES COMMISSION OF THE STATE OF CALIFORNIA

Order Instituting Rulemaking to Continue Electric Integrated Resource Planning and Related Procurement Processes

Rulemaking 20-05-003

MARIN CLEAN ENERGY 2022 INTEGRATED RESOURCE PLAN (PUBLIC VERSION)

In accordance with the requirements of California Public Utilities Code Sections 454.51 and 454.52, Ordering Paragraph 14 of the California Public Utilities Commission's ("Commission") *Decision Adopting 2021 Preferred System Plan* ("D.22-02-004"), and the June 15, 2022 *Administrative Law Judge's Ruling Finalizing Load Forecasts and Greenhouse Gas Emissions Benchmarks for 2022 Integrated Resource Plan Filings*, Marin Clean Energy Authority ("MCE") hereby submits its 2022 Integrated Resource Plan ("IRP") and related documents to the Commission for certification.

Attached to this filing are the following documents associated with MCE's 2022 IRP:

- Attachment A Standard Load-Serving Entity Plan (Public);
- Attachment B 25 MMT Resource Data Template (Public);
- Attachment C 30 MMT Resource Data Template (Public);
- Attachment D 25 MMT Clean System Power Calculator;
- Attachment E 30 MMT Clean System Power Calculator; and
- Attachment F MCE October 20, 2022 Board Meeting Agenda.

MCE has developed both public (redacted) and confidential (unredacted) versions of its Load-Serving Entity Plan (i.e., narrative), 25 MMT Resource Data Template, and 30 MMT Resource Data Template. Concurrent with this filing, MCE is filing a motion to file the confidential materials under seal and will submit the confidential versions of these documents to the Commission through secure FTP.

MCE thanks the Commission for its time and effort in the 2022 IRP cycle and respectfully requests the Commission certify its 2022 IRP as consistent with the requirements of Sections 454.52(b)(3) and 454.51(d) and (e) of the California Public Utilities Code and Commission direction.

Respectfully submitted,

Isl Ann C. Springgate

Ann C. Springgate Keyes & Fox LLP 580 California Street, 12th Floor San Francisco, CA 94104 415.987-8367 aspringgate@keyesfox.com

Counsel to
Marin Clean Energy

November 1, 2022

VERIFICATION

I, Dawn Weisz, am the Chief Executive Officer of Marin Clean Energy ("MCE"), a California joint powers authority, and I am authorized to make this Verification on MCE's behalf. The statements in the documents included in MCE's 2022 Integrated Resource Plan and attached hereto are true of my own knowledge, except as to matters that are therein stated on information or belief, and as to those matters, I believe them to be true. The spreadsheet formats used in the supporting documents used to file this report have not been altered from the version issued or approved by the California Public Utilities Commission's Energy Division.

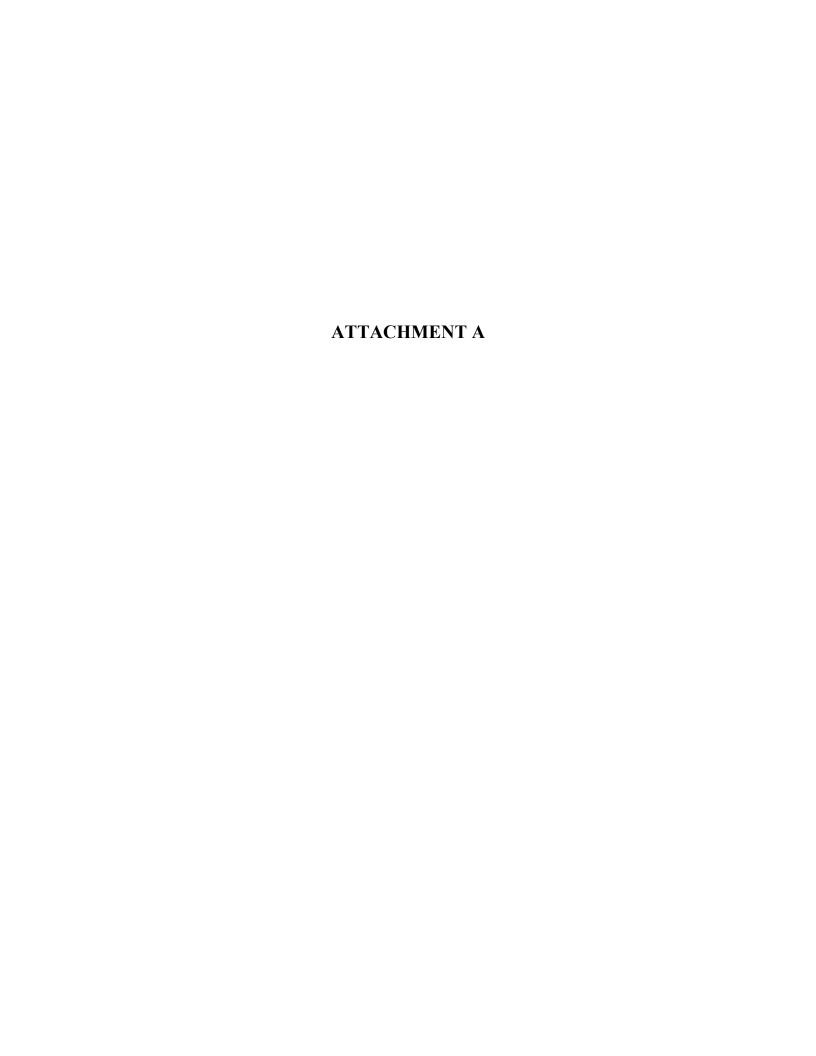
I declare under penalty of perjury that the preceding is true and correct.

Executed on November 1, 2022 at San Rafael, California

Dawn Weisz

Dawn Weisz Chief Executive Office MARIN CLEAN ENERGY 1125 Tamalpais Avenue San Rafael, CA 94904 Telephone: (415) 464-6020

Email: dweisz@mcecleanenergy.org



Standard LSE Plan

MARIN CLEAN ENERGY 2022 INTEGRATED RESOURCE PLAN NOVEMBER 1, 2022

Table of Contents

I.	Executive Summary	4
	a. Introduction	
	Description of MCE	2
	MCE's Mission	5
	Introduction to MCE's Compliance IRP	θ
	MCE's Preferred Conforming Portfolio	7
	Request for Certification	8
	b. Summary of Findings	9
II.	Study Design	11
	a. Objectives	11
	b. Methodology	12
	i. Modeling Tool(s)	12
	ii. Modeling Approach	13
	Load Forecast	13
	Table 1: MCE's 2023-2035 Load Forecast	13
	Load Shape	13
	Compiling Existing Resources	14
	Selecting New Resources	14
	Confirming Reliability	14
	Calculating GHG Emissions	15
III.	Study Results	15
	a. Conforming and Alternative Portfolios	15
	Table 2: MCE's 2035 PCP Resources	
	MCE's PCP Is Consistent with the 2021 PSP	17
	Table 3: MCE's PCP New Resource Procurement by Type Compared to 2021 PSP	18
	b. Preferred Conforming Portfolio	19
	Meeting GHG Reduction Goals	20
	Procuring Eligible Renewable Energy	21
	Minimizing Bill Impact	21
	Ensuring System and Local Reliability	22
	Strengthening the Bulk Transmission and Distribution Systems	23
	Enhancing Demand-Side Energy Management	23
	Minimizing Localized Air Pollutants with Emphasis on Disadvantaged Communities	24
	c. GHG Emissions Results	25
	Table 4: MCE's PCP GHG Emissions	25
	d. Local Air Pollutant Minimization and Disadvantaged Communities	25
	i. Local Air Pollutants	25
	Table 5: MCE's PCP Local Pollutant Emissions (30 MMT Scenario)	25
	Table 6: MCE's PCP Local Pollutant Emissions (25 MMT Scenario)	
	ii. Focus on Disadvantaged Communities	26

	Table	7: DACs Served by MCE	26
	Green	Access and Community Solar Connection Programs	29
	Sustai	nable Workforce and Diversity Policy	30
	Ad Ho	c Workforce Development	31
	Creati	ng Energy Efficiency Jobs	33
	Equity	in Power Purchasing	34
		gic Recruiting and Hiring Practices	
		nunity Power Coalition	
		ng Community Resiliency	
	COVID	-19 Customer Support	
	e.	Cost and Rate Analysis	
	f.	System Reliability Analysis	38
	g.	High Electrification Planning	40
	Table	8: MCE's 2024-2035 Load Forecast - High Electrification Scenario	41
		9: MCE's 2024-2035 Peak Demand Forecast - High Electrification Scenario	
	Table	10: MCE's Planned Out-of-State and Off-Shore Wind Resources	
	h.	Existing Resource Planning	42
	i.	Hydro Generation Risk Management	43
	j.	Long-Duration Storage Planning	44
	k.	Clean Firm Power Planning	45
	I.	Out-of-State Wind Planning	45
	m.	Offshore Wind Planning	46
	n.	Transmission Planning	46
	i.	New Projects	46
	ii.	Projects Under Development	46
	iii.	Projects Under Review	48
	iv.	Planned New (Generic) Projects	49
IV.	Acti	on Plan	50
	a.	Proposed Procurement Activities and Potential Barriers	50
	Joint S	iolicitations	50
	Optim	izing Existing Procurement	51
	Annua	ll Energy Solicitations	51
	i.	Resources to meet D.19-11-016 procurement requirements	54
	D.19-1	1-016 Procurement Progress Report	54
	Sutter	Energy Center	55
		s Wind, LCC	
		olar One	
		Management Redwood Landfill ("Redwood Landfill Project")	
	i.	Resources to meet D.21-06-035 procurement requirements, including:	
		Procurement Progress Report	
	i.	All other procurement requirements	59

	Open S	Season RFO	59
	ii.	Offshore wind	60
	iii.	Out-of-state wind	60
	iv.	Other renewable energy not described above	60
	٧.	Other energy storage not described above	60
	vi.	Other demand response not described above	61
	vii.	Other energy efficiency not described above	61
	viii.	Other distributed generation not described above	62
	ix.	ergy Metering and Rooftop Solar Rebates Transportation electrification, including any investments above and beyond what egrated Energy Policy Report (IEPR)	is included
	x. Integ	Building electrification, including any investments above and beyond what is inclugrated Energy Policy Report (IEPR)	
	Multifa	mily Energy Saving Program	64
	LIFT Pil	ot Program	65
	Home I	Energy Savings ("HES") Program	66
	Heat P	ump Water Heater ("HPWH") Contractor Incentive Program	67
	xi.	Other	67
	b.	Disadvantaged Communities	67
	Green	Access and Community Solar Connection Programs	67
	Sustain	nable Workforce and Diversity Policy	68
	c.	Commission Direction of Actions	68
٧.	Less	ons Learned	69
Glo	ssarv c	of Terms	70

I. Executive Summary

a. Introduction

Description of MCE

Marin Clean Energy ("MCE") is California's first Community Choice Aggregation ("CCA") Program, a not-for-profit Joint Powers Authority ("JPA") that began service in 2010. MCE's mission is to confront the climate crisis by eliminating fossil fuel greenhouse gas ("GHG") emissions, producing renewable energy, and creating equitable community benefits. MCE's vision is to lead California to an equitable, clean, affordable, and reliable energy economy by serving as a model for community-based renewable energy, energy efficiency, and cutting-edge clean-tech products and programs.

As a load-serving entity ("LSE"), MCE provides electricity generation service to approximately 580,000 customer accounts. These accounts represent more than one million residents and businesses across four Bay Area counties. MCE procures for annual retail sales of approximately 5,729 GWh and a peak load of more than 1,240 MW.

MCE provides service to approximately 87% of eligible customers within its service area, which is depicted in Figure 1, below. MCE is also the default generation provider for any new or relocated customers therein.²

¹ MCE serves communities across Contra Costa, Marin, Napa, and Solano counties. Those communities currently receiving service include: Unincorporated Contra Costa, Marin, Napa, and Solano counties and the Cities and Towns of Concord, Danville, El Cerrito, Lafayette, Martinez, Moraga, Oakley, Pinole, Pittsburg, Pleasant Hill, Richmond, San Pablo, San Ramon, Walnut Creek, Belvedere, Corte Madera, Fairfax, Larkspur, Mill Valley, Novato, Ross, San Anselmo, San Rafael, Sausalito, Tiburon, American Canyon, Calistoga, Napa, St. Helena, Yountville, Benicia, Vallejo, and Fairfield.

² MCE expanded service to the city of Fairfield in April 2022. This expansion is reflected in MCE's Commission-assigned load forecast. Expansion to additional communities may occur during the planning period.



Figure 1: Service Area Map

As a JPA and local government agency, MCE is governed by a 31-member Board of Directors ("Board" or "Governing Board") composed of elected representatives from MCE's member communities. MCE's Board sets policy for the agency and oversees MCE's operations, including MCE's procurement planning. Through these representatives, MCE is controlled by and accountable to the communities MCE serves.

MCE's Mission

MCE was formed to empower its member communities to choose the generation resources that reflect their specific values and needs. As a mission-driven local government agency, MCE works toward the following:

- Reducing GHG emissions and accelerating the supply of clean energy being delivered to and used on the grid;
- Developing community programs and local energy projects to expand access to competitively priced renewable energy and energy efficiency programs for all customers;
- Creating economic and workforce benefits associated with renewable energy and energy conservations programs; and
- Leveraging energy and conservation spending to promote more equity throughout MCE's communities and California.

Member community values and needs are reflected in a number of procurement principles, goals, targets, and directives reviewed and adopted by MCE's Board via MCE's annual Operational Integrated Resource Plan ("Operational IRP"). Since 2014, MCE has prepared an annual Operational IRP as an internal planning and policy document to address MCE's GHG reduction targets and various other agency matters related to resource planning and procurement, including complementary energy programs administered and funded by MCE. The Operational IRP is well-aligned with the biennial Compliance IRP submitted to the California Public Utilities Commission ("Commission" or "CPUC") for certification pursuant to Cal. Pub. Util. Code Section 454.52(b)(3). These two IRPs are developed concurrently in even years and describe consistent long-term procurement planning strategies and goals.

Consistent with Sections 366.2(a)(5) and 454.52 (b)(3), MCE's procurement is governed by MCE's Board and must be consistent with the Board-adopted mandates in MCE's Operational IRP.

Introduction to MCE's Compliance IRP

In accordance with the requirements of Sections 454.51 and 454.52, Commission Decisions ("D.") 22-02-004, D.21-06-035, D.19-11-016, D.18-02-018, and formal guidance provided by the Commission's Energy Division, MCE is filing its Compliance IRP for certification review and use in the Commission's statewide planning process. In addition to this narrative, MCE's Compliance IRP includes the following documents:

- MCE's 30 MMT Resource Data Template;
- MCE's 25 MMT Resource Data Template;
- MCE's 30 MMT Clean System Power Calculator; and
- MCE's 25 MMT Clean System Power Calculator.

³ The current *MCE 2022 Operational Integrated Resource Plan* was approved by MCE's Technical Committee in November 2021 and is available on MCE's website: https://www.mcecleanenergy.org/energy-procurement/. MCE is developing its 2023 Operational Integrated Resource Plan concurrently with this Compliance IRP. The 2023 OIRP is scheduled to be reviewed and approved by MCE's Technical Committee in November 2022.

⁴ All further citations to statute are to the California Public Utilities Code unless otherwise noted.

⁵ Over the course of the IRP planning cycle, Energy Division has issued a number of guidance documents to be used as LSEs develop their IRPs. These documents include *LSE Filing Requirements RESOLVE Results* (issued June 15, 2022); *Filing Requirements Overview* (updated July 15, 2022); *Filing Requirements Questions and Answers* (updated September 23, 2022); *Clean System Power Calculator Documentation* (updated July 15, 2022); *Resource Data Template v3 User Guide* (updated September 23, 2022); and *Aggregated CAM Resources for LSEs Plan Development* (issued September 29, 2022).

As provided for in D.22-02-004 and described in Commission Guidance documents, MCE is submitting a single conforming portfolio ("Preferred Conforming Portfolio") as part of its Compliance IRP, which meets the following GHG emissions limits:

- 1. A portfolio that achieves emissions that are equal to or less than MCE's proportional share of the 38 MMT by 2030 and 30 MMT by 2035 GHG targets ("30 MMT Conforming Portfolio); and
- 2. A portfolio that achieves emissions that are equal to or less than MCE's proportional share of the 30 MMT by 2030 and 25 MMT by 2035 GHG targets ("25 MMT Conforming Portfolio").

Projecting resource needs over the planning horizon covered by the IRP is an inexact exercise and is inevitably and appropriately subject to change in terms of both amounts procured and types of resources needed. MCE's portfolio of resources generally includes (a) existing and operating resources that are under contract with MCE; (b) resources that MCE has contracted for, but that have not achieved commercial operation; and (c) future resources that MCE will need to procure to meet its agency targets and goals over both the mid- and long-term. The future resources identified in MCE's Compliance IRP represent MCE's best, good-faith projection of the resource mix it will procure over the IRP planning horizon based on currently available information. The resources identified in future iterations of MCE's Compliance IRP may change due to new information and changed circumstances. As such, the ultimate resource mix MCE procures may differ from what is reflected in this Compliance IRP due to a number of variables including regulatory changes, availability of supply, price of supply, and/or other market or regulatory considerations. What MCE expects to remain constant, however, is its aggressive trajectory towards procuring a diverse resource mix that meets MCE's reliability and customer needs and minimizes reliance on GHG-emitting resources for both energy and capacity.

MCE's Preferred Conforming Portfolio

MCE's Preferred Conforming Portfolio ("PCP") is described in detail below and is represented in MCE's Resource Data Template, version 3 ("RDT") for both the 30 MMT Conforming Portfolio and the 25 MMT Conforming Portfolio, respectively. The PCP has been approved by MCE's Chief Executive Officer and Governing Board as: (a) reflective of MCE's actual planned procurement as of the filing of this Compliance IRP; (b) consistent with MCE's statutory obligations; (c) consistent with the Commission's IRP framework and guidelines, including the Preferred System Plan ("PSP"); (d) consistent with the Commission's reliability requirements; and (c) consistent with MCE's internal short-, mid-, and long-term procurement plans and internal procurement policies. MCE's PCP comes in under its assigned portion of the 25 MMT

and 30MMT system emissions targets. MCE's PCP was approved by MCE's governing Board on October 20, 2022 and is being provided to the Commission for certification consistent with Section 454.52(b)(3).

Request for Certification

MCE respectfully requests that the Commission certify this Compliance IRP.

As both the Legislature and the Commission have recognized, the Legislature has granted CCAs broad authority to procure resources on their customers' behalf, an authority limited only where "other generation procurement arrangements have been expressly authorized by statute." The Commission has likewise recognized that the Legislature has granted CCAs autonomy in setting their own rates and managing interactions with their customers. As such, the Commission has three primary interests in the CCA IRP process:

- Ensuring that CCA IRPs provide the CCA procurement information that the Commission needs to develop its statewide plan;⁸
- Ensuring that CCAs' current and planned procurement is consistent with the resource adequacy ("RA") requirements established pursuant to Section 380;9 and
- Ensuring that each CCA contributes to grid reliability and GHG emissions reductions through the procurement of long-term renewable integration resources. 10

MCE has prepared its Compliance IRP with these interests in mind, and MCE thanks the Commission in advance for its recognition of CCA procurement autonomy and the benefits of a collaborative approach with CCAs in its certification review of MCE's Compliance IRP.

⁶ Section 366.2(a)(5).

⁷ D.05-12-041 at 5 ("Nothing in the statute directs the CPUC to regulate the CCA's program except to the extent that its programs may affect utility operations and the rates and services to other customers. For example, the statute does not require the CPUC to set CCA rates or regulate the quality of its services."); D.19-04-040 at 18 ("[T]he Commission does not approve CCA or ESP rates.").

⁸ D.19-04-040 at 17-18 ("The Commission's portfolio aggregation and evaluation process, which relies of fulfillment of IRP filing requirements by LSEs, is the only process capable of assessing the overall needs of the CAISO grid and meeting the statewide GHG, reliability, and least-cost goals collectively. While LSEs may use their IRP process to meet local planning needs as well, the statewide planning function is the statutorily required process.

⁹ Section 454.52(b)(3)(C).

¹⁰ Section 454.51.

b. Summary of Findings

This narrative provides a detailed description of: (a) the development and content of MCE's PCP; (b) the PCP's compliance with applicable requirements; and (c) an Action Plan detailing MCE's planned next steps to implement its plan.

MCE developed its Compliance IRP through the following steps:

- MCE compiled data for its existing energy-only contracts, bundled energy and capacity contracts, RA capacity contracts, and its share of capacity for allocated Cost Allocation Mechanism ("CAM") and Demand Response resources;
- For each IRP planning year, MCE identified its short positions relative to MCE's planning targets in relation to its assigned load forecast;
- MCE populated the RDTs with all current contracts;
- MCE compiled information on projects for which it is currently negotiating power purchase agreements ("PPA"), including information regarding project status and timing;¹¹
- MCE identified future contracts it expects for new geothermal, storage, and wind generation. MCE prioritized the selection of future resources that best fit MCE's portfolio and that meet or exceed MCE's proportional share of planned new procurement;
- MCE added generic future contracts with existing resources to help fill its remaining open positions;
- MCE used the Commission's Clean System Power ("CSP") calculator to check the GHG
 emissions associated with the resulting portfolio to ensure that these emissions are
 lower than MCE's assigned share of the 30 MMT and 25 MMT benchmarks;
- MCE identified the resulting portfolio as its Preferred Conforming Portfolio or PCP; and
- MCE checked its PCP for reliability by comparing the total portfolio Net Qualifying Capacity ("NQC") against MCE's forecast RA requirements for the month of September in each year of the planning period.

MCE reached the following findings regarding its PCP:

• MCE's PCP includes the procurement of the following new resources and nameplate capacities over the course of the planning horizon:

¹¹ In the interest of providing the Commission as much current information as possible, MCE's RDTs include information on projects under negotiation to the extent commercially reasonable and feasible. MCE asserts, though, the information provided for such projects is subject to change pending final execution of agreements.

- New wind resources totaling 265 MW;¹²
- New geothermal resources totaling 109 MW;
- New hybrid resources totaling 212 MW of solar generation and 153 MW of storage;
- New grid connected battery storage of 400 MW;
- New Demand Response resources of 15 MW; and
- New long-duration storage¹³ of 90 MW;
- MCE's PCP provides for the following overall resource mix in 2035:
 - Large hydro-electric of 525 GWh;
 - Imported hydro-electric of 120 GWh;
 - Small hydro-electric of 69 GWh;
 - Biogas/biomass of 46 GWh;
 - Geothermal of 1,785 GWh;
 - California wind of 1,014 GWh;
 - Out-of-state wind of 250 GWh;
 - Offshore wind of 400 GWh;
 - California solar of 1,155 GWh;
 - Distributed solar of 13 GWh;
 - Hybrid solar and storage of 596 GWh; and
 - Standalone battery storage of 2,117 MWh (capacity x duration).
- Using the 30 MMT scenario CSP calculator, MCE's PCP would have 2030 emissions of 0.500 MMT and 0.514 MMT in 2035. ¹⁴ This is lower than MCE's assigned share of 2030 and 2035 emissions (0.848 MMT and 0.630 MMT, respectively).
- Using the 25 MMT scenario CSP calculator, MCE's PCP would have 2030 emissions of 0.493 MMT and 0.492 MMT in 2035. This is lower than MCE's assigned share of 2030 and 2035 emissions (0.640 MMT and 0.504 MMT, respectively).
- MCE's PCP meets all Commission-provided reliability metrics.
- MCE's PCP provides more than MCE's load-proportional share of renewable integration resources.

MCE has selected its PCP because it appropriately balances Board directives, MCE's program

¹² This 265 MW of new wind resources consists of in-state, out-of-state, and off-shore wind in the following amounts: 100 MW of in-state wind; 70 MW of out-of-state wind; and 95 MW of off-shore wind.

¹³ MCE is currently interested in long-duration storage resources with at least 8 hours of duration at full capacity.

¹⁴ MCE notes that the increase in emissions from 2030 to 2035 results from an increase in use of system power attributable to a decrease in allocated generation from Combined Heat and Power resources, as well as increases in the volume of curtailments and exports modeled.

goals, cost constraints, reliability, and customer rate impacts. Specifically, the PCP adheres to MCE Board Policy to achieve an 85% renewable energy content by 2035¹⁵ and minimize GHG emissions through use of a combination of renewable energy and other low carbon energy sources.¹⁶

To implement its PCP, MCE is adopting the Action Plan described in Section IV, below. This Action Plan includes the following steps:

- MCE will conduct an annual "open season" Request for Offers ("RFO") process to solicit
 offers for new renewable generation and storage projects. These resources are
 typically secured through long-term PPAs. MCE expects to secure PPAs for new
 projects in each open season conducted over the next several years;
- Periodically throughout the year, MCE will solicit offers for (i) short-term renewable energy, (ii) large hydro-electric and Asset Controlling Supply ("ACS"), (iii) RA, and (iv) load-hedging products needed to balance the portfolio and adhere to position limits established through MCE's risk management policy and practices. These solicitations can take the form of formal RFO processes, bilateral discussions, and transactions arranged through broker markets; and
- Continuing to develop and offer customer programs that shed load, including aggregated load shift from business and residential customers.

II. Study Design

a. Objectives

MCE had the following objectives in performing the analytical work to develop its PCP and larger Compliance IRP:

- Identify a portfolio that meets MCE's goals for renewable energy utilization and GHG
 emission minimization and that has GHG emissions no greater than MCE's proportional
 share of the 38 MMT 2030 GHG Emissions Benchmark and 25 MMT 2035 GHG
 Emissions Benchmark, as determined using the CSP calculator;
- 2. Identify a portfolio that achieves economic, reliability, environmental, security, and

¹⁵ This assumes a certain amount of curtailment as dictated by the CSP. Without the curtailments assigned by the CSP calculator, MCE's renewable generation would be approximately 87%. To account for curtailment, MCE uses short-term contracts to balance its portfolio and meet its goals and obligations. This ensures that unrealized or curtailed generation is accounted for.

¹⁶ See MCE's 2022 Operational Integrated Resource Plan available here: https://www.mcecleanenergy.org/energy-procurement/.

- other benefits and performance characteristics that are consistent with the goals set forth in Section 454.52(a)(1) (A-I);
- 3. Identify a diverse and balanced portfolio that includes both short-term and long-term electricity, electricity-related, and demand reduction and management products;
- 4. Identify a portfolio that achieves the RA requirements established pursuant to Section 380 and fully provides MCE's share of system reliability and renewable integration resources;
- 5. Identify a portfolio that fully complies with all MCE Board-adopted procurement directives;
- 6. Identify portfolios that are fully compliant with MCE's obligations under the Renewable Portfolio Standard ("RPS") program; and
- 7. Identify portfolios that are cost-effective and minimize rate impacts on MCE's customers.

b. Methodology

i. Modeling Tool(s)

In developing its PCP, MCE used modeling tools that quantify portfolio targets for renewable energy content, capacity, and portfolio GHG emissions, as well as physical and financial positions to ensure adherence to MCE's risk management policies and business practices. MCE uses proprietary models to assess annual, monthly, and hourly open positions taking into account forecasted hourly electric loads and expected deliveries from MCE's resource portfolio. MCE uses a proprietary financial model to project power supply costs and incorporate existing and planned procurement into an overall financial assessment of revenues, costs, and cash flows. MCE also utilizes a commercially available energy trading and risk management system to monitor positions, market exposure, credit exposure, value-at-risk, and other risk management metrics.¹⁷

Portfolio reliability was evaluated using forward-looking Effective Load Carrying Capacity ("ELCC") values for each resource type to assess total NQC of the portfolio relative to MCE's reliability requirements. This approach ensures MCE contributes to grid reliability commensurate with its share of system reliability needs.

For new resource selection where specific projects have not yet been identified in MCE's procurement process, MCE relied upon the modeling and assumptions in RESOLVE as well as MCE's recent procurement experience. Both provide insight into resource availability and cost.

_

¹⁷ Hitachi Energy TRMTracker.

MCE considered resource cost as well as portfolio fit (*i.e.*, how new resources would complement existing portfolio resources to reliably serve MCE's load shape, while minimizing GHG emissions).

GHG emissions were assessed using the Commission's CSP calculator for the 30 MMT and 25 MMT variations.

ii. Modeling Approach

Load Forecast

MCE developed its Compliance IRP using its assigned load forecast pursuant to the June 15, 2022, Administrative Law Judge's Ruling Finalizing Load Forecasts and Greenhouse Gas Benchmarks for 2022 Integrated Resource Plan Filings ("Load Forecast Ruling"). MCE's assigned load forecast used in this Compliance IRP is as follows:

Table 1: MCE's 2023-2035 Load Forecast

Year	Load Forecast (GWh)
2023	5,729
2024	5,759
2025	5,756
2026	5,759
2027	5,767
2028	5,795
2029	5,827
2030	5,955
2031	5,983
2032	6,040
2033	6,040
2034	6,067
2035	6,099

Load Shape

In developing its portfolio MCE used the default load shape from the CSP calculator. The use of this load shape does not change MCE's total annual energy volumes for both load and load modifiers, and these energy volumes remain consistent with MCE's assigned load forecast.

Compiling Existing Resources

To populate its baseline resource templates, MCE added existing resources from the following sources:

- Existing and planned energy contracts, including MCE's election of renewable resources through the Voluntary Allocation and Market Offer ("VAMO") process;
- Existing and planned capacity RA contracts;
- MCE's assigned share of capacity for CAM and Demand Response resources, taken from the most recent year-ahead CAM resource allocations provided to MCE on September 29, 2022;¹⁸ and
- Expected allocations of GHG-free energy from the Pacific Gas & Electric Company ("PG&E") portfolio.

Selecting New Resources

To identify its new resource procurement, MCE first determined the new resource capacity it intends to add each year. To make this determination, MCE considered (i) resource need (i.e., open positions), (ii) long-term renewable contracting requirements, (iii) RPS requirements, (iv) RA requirements, (v) the need for incremental RA capacity to contribute to system reliability and renewable integration needs, (vi) the potential for technological improvements, (vii) financial considerations, and (viii) a desire to transition its portfolio toward greater use of renewable energy and storage capacity in lieu of reliance on fossil resources. MCE selected resource types based on its experience with competitive solicitations for new renewable and storage resources as well as by making reference to the studies and modeling underlying the adopted PSP portfolio.

Confirming Reliability

MCE's portfolios were evaluated to ensure that sufficient dependable NQC is available to meet peak load requirements plus the required planning reserve margin. MCE used forward looking technology specific ELCC factors provided by the Commission to assess the contribution of each resource to system reliability. As such, MCE's portfolio addresses the expected changes to ELCC factors and NQC of its planned resources. MCE's PCP was designed to ensure that current incremental RA capacity obligations are met, and that MCE contributes to new resource

¹⁸ MCE's CAM and Demand Response allocations reflect the information provided in the *Aggregated CAM Resources for LSEs Plan Development* ("Aggregated CAM Guidance"), issued September 29, 2022, available at https://www.cpuc.ca.gov/industries-and-topics/electrical-energy/electric-power-procurement/long-term-procurement-planning/2022-irp-cycle-events-and-materials.

development to address fossil fuel retirements, the decommissioning of the Diablo Canyon Power Plant ("DCPP"), 19 and integration of renewable resources.

Calculating GHG Emissions

MCE calculated the emissions associated with its PCP using the Commission's CSP calculators. The assigned load forecast, default load shapes, and behind-the-meter adjustments were used for this assessment, along with the planned supply portfolio. MCE's PCP results in 2030 emissions of 0.500 MMT and 0.514 MMT in 2035²⁰ under the 30 MMT scenario, and 2030 emissions of 0.493 MMT and 0.492 MMT in 2035 under the 25 MMT scenario.

III. Study Results

a. Conforming and Alternative Portfolios

Pursuant to Commission direction,²¹ MCE is submitting one PCP because this portfolio meets the requirements of both the 30 MMT and 25 MMT system plans. As required, MCE presents this singular PCP separately in both the 30 MMT and 25 MMT RDTs and CSP calculators, respectively. MCE is not presenting Alternative Portfolios.

To meet MCE's projected 2035 electricity demand of 6,099 GWh, MCE has selected a 2035 PCP composed primarily of the resource types and energy volumes detailed below.²²

Table 2: MCE's 2035 PCP Resources

	12212 21 11122 2 2000 1 01 11000 11000								
Resource Category	Under Development	Owned or Contracted	Planned Existing	Planned New	Under Review	Total			
Battery Storage (GWh Energy Capacity)	24	5	E	2	T.				
Biogas (GWh)	T.	30	S#3	æ	8	30			

¹⁹ Pursuant to Senate Bill 846, MCE's planning for purposes of this Compliance IRP assumes the current retirement and decommissioning schedule for DCPP.

²⁰ MCE notes that the increase in emissions from 2030 to 2035 results from an increase in use of system power attributable to a decrease in allocated generation from Combined Heat and Power resources, as well as increases in the volume of curtailments and exports modeled.

²¹ Load Forecast Ruling issued June 15, 2022.

²² Residual energy needs are assumed to come from unspecified system energy purchases.

Biomass (GWh)	-	-	16	-	-	16
Geothermal (GWh)	-	-	149	580	1,056	1,785
Hybrid or Paired Solar and Battery (GWh)	596	-	-	-	-	596
Imported Hydro (GWh)	-	1	120	1	-	120
Large Hydro (GWh)	-	25	500	-	-	525
Small Hydro (GWh)	-	37	32	-	-	69
Solar Distributed (GWh)	13	-	1	-	-	13
Solar Existing California (GWh)	18	1,058	79	1	-	1,155
Wind Existing California (GWh)	-	-	374	-	87	461
Wind New Mexico (GWh)	-	-	1	250	-	250
Wind New PG&E (GWh)	290	-	-	-	-	290
Wind Offshore Morro Bay (GWh)	-	-	-	400	-	400
Wind New SCE SDG&E (GWh)	-	-	-	-	263	263

Additionally, MCE's 2035 PCP includes capacity-only resources composed primarily of the following:

- CAM, and Demand Response allocations 48 MW²³
- Existing natural gas and other (planned procurement) 549 MW

MCE's portfolio includes a mix of existing and new resources. MCE's 2035 portfolio is composed of approximately 1,383 MW of new nameplate capacity, reflecting MCE's role as an active participant in the State's development of new renewable and storage resources. Additionally, MCE's short- and long-duration storage, along with its capacity-only resources will help maintain MCE's commitment to supporting the State's need for reliability and renewable integration.

MCE's PCP Is Consistent with the 2021 PSP

The new resources included in MCE's PCP are generally consistent with the 2021 PSP's 2035 new resource mix as adopted in D.22-02-004, as updated,²⁴ for both the 38 MMT and 30 MMT scenarios. There are, however, certain notable differences that reflect portfolio needs and resource selection that are unique to MCE.

As demonstrated in Table 3, below, MCE's PCP includes proportionately more new resources than would be indicated by MCE's proportional share of *new procurement* for each of the resource types identified in the adopted 2021 PSP.²⁵ Under this scenario, MCE's portfolio includes considerably more wind, geothermal and storage resources, and less utility-scale solar resources than does the 38 MMT PSP scenario.

Importantly, Table 3 also demonstrates the PCP's general consistency with procurement types and amounts in the 30 MMT PSP scenario. Notably, however, MCE's PCP consists of fewer MW of procurement and different resource proportions relative to the 30 MMT PSP

²³ MCE's CAM and Demand Response allocations reflect the information provided in the Aggregated CAM Guidance issued September 29, 2022.

²⁴ LSE Plan Filing Requirements RESOLVE Modeling Results at 16, issued June 15, 2022, available at <a href="https://www.cpuc.ca.gov/-/media/cpuc-website/divisions/energy-division/documents/integrated-resource-plan-and-long-term-procurement-plan-irp-ltpp/2022-irp-cycle-events-and-materials/lse-filing-requirement-resolve-results.pdf.

²⁵ D.22-02-004 adopts the 38 MMT GHG target as the 2021 PSP. However, the Decision also requires LSEs to submit plans for how they would reach the 30 MMT GHG target or lower. Further, as clarified in the *Administrative Law Judge's Ruling Finalizing Load Forecasts and Greenhouse Gas Emissions Benchmarks for 2022 Integrated Resource Plan Filings*, issued June 15, 2022, LSEs whose portfolios go below the 30 MMT GHG target are only required to submit one PCP.

scenario. Despite these deviations, MCE's PCP: (a) meets the lower emissions targets in the 30 MMT PSP scenario as demonstrated in MCE's CSP tool, (b) meets MCE's projected load and energy needs as reflected in Table 2, and (c) meets the reliability requirements as demonstrated in the Reliability tabs in MCE's RDTs and Section III.f, below. This is due to MCE's PCP being weighted more heavily towards procurement of resources with high-capacity factors and being substantially less reliant on utility scale solar, which is assigned a significantly lower capacity factor. The PCP reflects MCE's plans to invest in clean baseload, wind, and storage resources over the course of the planning horizon that complement the existing level of solar resources in MCE's portfolio. MCE sees this portfolio as being the most efficient and cost-effective means of meeting MCE's emissions and reliability needs.

Table 3: MCE's PCP New Resource Procurement by Type Compared to 2021 PSP

Resource Type	38 MMT PSP Scenario New Resources (MW) ²⁶	MCE Load- Proportional Share of 38 MMT PSP New Resources (MW)	30 MMT PSP Scenario New Resources (MW) ²⁷	MCE Load- Proportional Share of 30 MMT PSP New Resources (MW)	MCE's PCP (MW)
Natural Gas	0	0	0	0	0
Biomass 134 4		4	134	4	0
Geothermal 1,135 30		30	1,135	30	109
Wind 3,562 95		95	4,270	114	191
Wind on New Out-of State 4,636 124 Transmission		4,828	129	70	
Offshore 4,707		126	4,707	126	95

²⁶ As described in the filing requirements provided by the Commission, this PSP portfolio is referred to in other contexts as the 30 MMT Conforming Portfolio.

²⁷ As described in the filing requirements provided by the Commission, this PSP portfolio is referenced in other contexts as the 25 MMT Conforming Portfolio.

Utility-Scale Solar	17,418	465	21,794	582	222 ²⁸
Battery Storage	17,350	463	17,742	474	559
Pumped (Long- Duration) Storage	1,000	27	1,000	27	90
Shed Demand Response	977	26	767	20	15
Total	50,919	1,360	56,377	1,505	1,351

The differences between MCE's share of the 2021 PSP New Build Resources and the resources in MCE's PCP, under either the 38 MMT or 30 MMT scenarios, reflect MCE's planned contributions to new resource development during the planning period. MCE plans to add significant new renewable generation and storage capacity to help reduce reliance on fossil fueled generation, while minimizing GHG emissions and maintaining reliability using the most cost-effective and efficient portfolio of resources.

b. Preferred Conforming Portfolio

MCE's PCP consists of a combination of:

- Utility-scale solar;
- In-state wind;
- Out-of-state wind;
- Off-shore wind;
- Short-duration storage;
- Long-duration storage;
- Small and large hydro-electric;
- Geothermal;
- Biomass/biogas;
- Shed Demand Response; and
- Natural gas/other (capacity only).

²⁸ This represents 212 MW of solar hybrid procurement and 10 MW of new utility-scale solar procurement.

MCE's PCP consists of the following specifical compilation of resources:

- MCE's PCP includes the procurement of the following new resources and nameplate capacities over the course of the planning horizon:
 - New wind resources totaling 265 MW (consisting of in-state, out-of-state, and off-shore wind);
 - New geothermal resources totaling 109 MW;
 - New hybrid resources totaling 212 MW of solar generation and 153 MW of storage;
 - New grid connected battery storage of 400 MW;
 - o New Demand Response resources of 15 MW; and
 - New long-duration storage²⁹ of 90 MW;
- MCE's PCP provides for the following overall resource mix in 2035:
 - Large hydro-electric of 525 GWh;
 - Imported hydro-electric of 120 GWh;
 - Small hydro-electric of 69 GWh;
 - Biogas/biomass of 46 GWh;
 - Geothermal of 1,785 GWh;
 - California wind of 1,014 GWh;
 - Out-of-state wind of 250 GWh;
 - Offshore wind of 400 GWh;
 - California solar of 1,155 GWh;
 - Distributed solar of 13 GWh;
 - o Hybrid solar and storage of 596 GWh; and
 - Standalone battery storage of 2,117 MWh (capacity x duration).

As stated above, in accordance with Section 454.51(b)(3), the resource mix in MCE's PCP achieves "economic, reliability, environmental, security, and other benefits and performance characteristics that are consistent with the goals set forth in [Section] 454.51(a)(1)]." These benefits and characteristics are discussed below.

Meeting GHG Reduction Goals

MCE's PCP achieves results and performance characteristics consistent with the Section 454.52(a)(1)(A) goal of meeting the Commission's 30 MMT or 25 MMT GHG reduction benchmark. MCE's proportional share of the 30 MMT benchmark is 0.848 MMT in 2030 and 0.630 MMT in 2035. According to the Commission's emissions calculator for the 30 MMT

²⁹ MCE is currently interested in long-duration storage resources with at least 8 hours of duration at full capacity.

scenario, MCE's PCP would account for 0.500 MMT of emissions in 2030 and 0.514 MMT of emissions in 2035.³⁰ MCE's proportional share of the 25MMT benchmark is 0.640 MMT in 2030 and 0.504 MMT in 2035. According to the Commission's CSP calculator for the 25 MMT scenario, MCE's PCP would account for 0.493 MMT of emissions in 2030 and 0.492 MMT of emissions in 2035.

Procuring Eligible Renewable Energy

MCE's PCP achieves results and performance characteristics consistent with the goals of Sections 454.52(a)(1)(B) & (F) of ensuring that portfolios are composed of at least 50% eligible renewable resources and displacing fossil fuels within the state. In 2035 MCE's PCP portfolio would consist of 87% eligible renewable generation. To this end, MCE has executed a number of long-term PPAs with new, California-based generating facilities that will produce Portfolio Content Category ("PCC") 1-eligible renewable energy in excess of the 2030 requirement. Of the targeted 87% eligible renewable generation in 2035, 44.5% is under long-term contracts in 2030, and 33.6% in 2035. The remaining 42.5% and 53.4%, respectively, will be filled with long-term contracts that are currently under negotiations and/or planned as shown in both the CSPs and RDTs.³¹

To supplement its core procurement of PCC 1 resources under long-term contracts for its PCP, MCE engages, and will continue to engage, in short-term contracts for renewable energy supplies to balance and optimize its PCP. As of this filing, MCE has secured contracts for renewable energy volumes in excess of applicable California RPS procurement requirements through 2025, and long-term contracting requirements through 2030.

Minimizing Bill Impact

MCE's PCP achieves results and performance characteristics consistent with the Section 454.52(a)(1)(D) goal of minimizing the impact of planned procurement on ratepayers' bills. MCE prioritizes use of renewable energy and low carbon emitting resources, reliability, and cost competitiveness.

³⁰ MCE notes that the increase in emissions from 2030 to 2035 results from an increase in use of system power attributable to a decrease in allocated generation from Combined Heat and Power resources, as well as increases in the volume of curtailments and exports modeled.

³¹ Historically, MCE has contracted with PCC 1 resources located in California. However, some resources located outside California are eligible for PCC 1, typically through direct interconnection or firm transmission rights to the CAISO. Although MCE has an established preference for in-state resources, contracting with out-of-state PCC 1-qualified resources is likely to the extent that they offer increased value or other desirable portfolio attributes during the planning period.

Energy and RA costs have risen sharply in recent years, and rising wholesale energy costs have placed upward pressure on customer rates. New build renewable development and storage costs have also seen substantial increases since the last IRP cycle due to a confluence of unprecedented amounts of mandated procurement on strict timelines, limited transmission capacity to support new projects, supply chain constraints, and inflationary pressures. At the same time, prices in the short-term markets for renewable energy and RA have also increased significantly resulting from increasing incidents of resource scarcity during peak hours and more numerous and extensive extreme weather events. MCE will take steps to minimize bill impacts, but near-term rate increases may be necessary to accommodate increased procurement costs.

Despite recent cost increases for new generation and storage associated with its resource plan, bill impacts can be at least partially mitigated by the fact that new renewable generation projects can have lower net costs than the prices paid in the short-term renewable energy and resource adequacy markets. In evaluating new resource commitments, MCE seeks generation and/or storage projects that meet portfolio fit considerations and that have positive net present value in consideration of expected contract costs and the value of the energy, reliability, and environmental attributes provided by the project. Such projects help reduce costumer costs relative to alternative sources of energy and capacity. Further, MCE's PCP minimizes exposure to volatile natural gas prices and the bill impacts that can result from periodic spikes in fossil fuel prices.

Specific estimates of MCE's average portfolio costs through 2035 are provided in Section III.e., below.

Ensuring System and Local Reliability

MCE's PCP achieves results and performance characteristics consistent with the Section 454.52(a)(1)(E) goal of ensuring system and local reliability on both a near- and long-term basis. The PCP meets system RA requirements as detailed in Section III.f. MCE's PCP is reliable from both an MCE-specific and systemwide perspective under the 30 MMT and 25 MMT Scenarios. The PCP would provide adequate energy storage and RA capacity to meet MCE's generation needs during non-solar generating hours.

As a practical matter, the ability of MCE's portfolio to meet MCE's own load requirements will not be materially impacted by whether other parties procure consistent with the 30 MMT or 25 MMT target. As discussed in Section III.f., MCE's PCP includes sufficient NQC to meet peak loads and reserve margins regardless of whether other load serving entities procure to the 25 MMT or 30 MMT benchmark targets. If other LSEs procure in accordance with a 25 MMT GHG target, the NQC and contribution to reliability of MCE's PCP would increase by an average of 10 MW.

Based on results from the CSP calculator, MCE should expect more hours of curtailment for its renewable resources, greater use of system power, and higher emissions of GHG and local pollutants in the 30 MMT scenario as compared to the 25 MMT scenario; however, these differences are small relative to the size of MCE's planned portfolios and would have no meaningful impact on reliability.

For the periods during which MCE's load exceeds the sum of its contracted energy resources and planned storage capacity and Demand Response resources, MCE intends to ensure sufficient system capacity is available through use of firm short- and long-term RA contracts. MCE is planning that approximately half of its RA capacity (ELCC adjusted) will be provided by new renewable and storage resources, while the other half will be provided by existing resources, most of which are likely to be dispatchable natural gas fueled generators.

MCE is proud of its role supporting reliability and renewable integration needs to date and is eager to continue supporting these important state objectives going forward. While MCE has built-in plans for traditional reliability resources (*i.e.*, from natural gas), MCE aspires to gradually layer in reliability supply that better aligns with the State's ultimate GHG reduction goals.

Strengthening the Bulk Transmission and Distribution Systems

MCE's PCP achieves results and performance characteristics consistent with the Section 454.52(a)(1)(G) goal of strengthening the diversity, sustainability, and resilience of the bulk transmission and distribution systems. MCE does not own, operate, or maintain the bulk transmission or distribution systems. However, MCE's procurement of strategically located renewable generation, prioritization of local renewable generation, demand-side management efforts, and investment in distribution-side resources all serve to enhance the sustainability and resiliency of the bulk transmission and distribution systems.

Enhancing Demand-Side Energy Management

MCE's PCP achieves results and performance characteristics consistent with the Section 454.52(a)(1)(H) goal of enhancing demand-side energy management. MCE's PCP includes MCE's allocation of capacity through the demand-side management programs operated by PG&E. MCE operates a variety of energy efficiency and demand response programs, including MCE's PeakFlex Market.³²

Additionally, MCE is working to develop a pilot Virtual Power Plant ("VPP") within the City of

_

³² See https://www.mcecleanenergy.org/market/.

Richmond. This effort will install a suite of privately-owned distributed energy resources ("DERs") to be dispatched into the VPP, such as rooftop solar, heat pump water heaters, smart thermostats, smart plugs, electric vehicles, and energy storage. These will send data directly to MCE and can be remotely controlled and operated together to pull power to and from the grid at strategic times, creating pockets of power to support and decarbonize the grid.

The goal of Richmond Advanced Energy Community is to connect 120 sites to the VPP including 10 rehabilitated homes, 90 homes occupied by low-to-middle income residents (which have already received solar systems from GRID Alternatives), 18 commercial sites, and 2 industrial sites. Combined, the 120 sites are expected to contribute 1 MW of solar, 2 MWh of energy storage, and 1.5 MW of flexible load by December 2024.

The VPP will allow MCE to aggregate and dispatch DERs to manage critical peak loads, minimize procurement costs, and - as market opportunities evolve - generate value in wholesale markets. Participants may not be enrolled in other DER aggregation or demand response programs. Participants will receive modern appliances, bill savings, and bill credits.

MCE plans to expand this program to monitor and control other customer owned DERs.

Minimizing Localized Air Pollutants with Emphasis on Disadvantaged Communities

MCE's PCP achieves results and performance characteristics consistent with the Section 454.52(a)(1)(I) goal of minimizing localized air pollutants and other GHG emissions with early priority on disadvantaged communities ("DACs"). MCE's PCP relies primarily on renewable generation and would have low GHG and localized air pollution emissions. Further, MCE's PCP minimizes MCE's reliance on unspecified system power, instead opting for renewable generation, hydro generation, local energy storage, and local demand side reduction programs.

Results from the 30 MMT CSP calculator indicate the following localized air pollutants associated with MCE's PCP in 2035:

NOx: 68 tonnes/yrPM 2.5: 31 tonnes/yr

SO2: 7 tonnes/yr

Results from the 25 MMT CSP tool indicate the following localized air pollutants associated with MCE's PCP in 2035:

NOx: 64 tonnes/yrPM 2.5: 28 tonnes/yr

SO2: 7 tonnes/yr

These emissions derive primarily from system energy and CHP resources assigned to the MCE portfolio by the CSP calculator, as well as from relatively small amounts of biogas/biomass resources included in the PCP. MCE's four existing biogas energy sources are not located in DACs as identified in CalEnviroScreen 4.0. MCE plans to include emissions impacts on DACs as one of the criteria used for selecting specific projects for any procurement that may be assigned emissions.

c. GHG Emissions Results

GHG emissions associated with MCE's PCP are shown below for the 30 MMT and 25 MMT Scenarios. As stated above, the emissions associated with MCE's PCP are lower than MCE's proportional share for both the 30 MMT and 25 MMT benchmarks.

Table 4: MCE's PCP GHG Emissions

Scenario	Emissions Total	Unit	2024	2026	2030	2035
30 MMT	CO2	MMt/yr	0.277	0.380	0.500	0.514
25 MMT	CO2	MMt/yr	0.265	0.390	0.493	0.492

d. Local Air Pollutant Minimization and Disadvantaged Communities

i. Local Air Pollutants

Local pollutant emissions associated with MCE's PCP are shown below for the 30 MMT and 25 MMT Scenarios:

30 MMT Scenario

Table 5: MCE's PCP Local Pollutant Emissions (30 MMT Scenario)

Emissions Total	Unit	2024	2026	2030	2035
PM2.5	tonnes/yr	39	35	34	31
SO2	tonnes/yr	18	15	12	7
NOx	tonnes/yr	137	116	97	68

25 MMT Scenario

Table 6: MCE's PCP Local Pollutant Emissions (25 MMT Scenario)

Emissions Total	Unit	2024	2026	2030	2035
PM2.5	tonnes/yr	38	34	33	28
SO2	tonnes/yr	18	15	12	7
NOx	tonnes/yr	137	114	95	64

In each scenario, local air pollutants associated with MCE's electricity mix are projected to decrease. As described in MCE's Action Plan, below, MCE intends to reduce its reliance on system power by procuring the renewable and other low GHG-emitting resources identified in its PCP. MCE actively seeks out power supply technologies that minimize air pollutants including fully renewable technologies as well as hydro-electric and natural gas/battery hybrid technologies.

ii. Focus on Disadvantaged Communities

MCE's PCP is fully consistent with the goal of minimizing local air pollutants, with early priority on DACs.

MCE's programs illustrate that MCE takes an expansive view of its responsibilities in this area and takes efforts to minimize disadvantaged community air pollution impacts, not only in its own service area, but also in the state as a whole.

As identified by CalEPA's designation, 33 MCE serves the following DACs:

Table 7: DACs Served by MCE

	Tuble 7. DAGS Served by Wiel									
Census Tract	Nearby City	California County	ZIP Code	Total Population	MCE Residential Accounts in Census Tract	MCE Non- Residential Accounts in Census Tract	MCE Accounts in Census Tract			
6013305000	Antioch	Contra Costa	94509	6561	1	104	105			
6013307202	Antioch	Contra Costa	94509	4299	0	2	2			

³³ SB 535 Disadvantaged Communities | OEHHA (ca.gov).

26

6013314103	Bay Point	Contra Costa	94565	5629	1,552	61	1,613
6013314104	Bay Point	Contra Costa	94565	9278	2,217	121	2,338
6013336201	Concord	Contra Costa	94520	4056	1,161	21	1,182
6013320001	Martinez	Contra Costa	94553	3671	1,092	262	1,354
6013365002	North Richmond	Contra Costa	94801	5590	1,213	126	1,339
6013302005	Oakley	Contra Costa	94561	7290	2,051	184	2,235
6013309000	Pittsburg	Contra Costa	94565	3546	1,275	175	1,450
6013310000	Pittsburg	Contra Costa	94565	6257	1,646	135	1,781
6013311000	Pittsburg	Contra Costa	94565	5329	1,473	67	1,540
6013312000	Pittsburg	Contra Costa	94565	2243	626	82	708
6013313101	Pittsburg	Contra Costa	94565	7178	2,580	491	3,071
6013313102	Pittsburg	Contra Costa	94565	4595	1,341	123	1,464
6013314102	Pittsburg	Contra Costa	94565	6561	1,184	33	1,217
6013373000	Richmond	Contra Costa	94801	4468	897	90	987
6013375000	Richmond	Contra Costa	94801	4897	1,050	96	1,146
6013376000	Richmond	Contra Costa	94801	6245	1,557	78	1,635
6013377000	Richmond	Contra Costa	94801	7323	2,123	168	2,291
6013379000	Richmond	Contra Costa	94804	7003	1,508	203	1,711
6013380000	Richmond	Contra Costa	94804	5931	2,860	380	3,240
6013381000	Richmond	Contra Costa	94804	6521	1,708	191	1,899
6013382000	Richmond	Contra Costa	94804	8159	1,540	114	1,654
6013392200	Richmond	Contra Costa	94806	11304	2,829	172	3,001
6013358000	Rodeo	Contra Costa	94572	6285	1,609	151	1,760
6013364002	San Pablo	Contra Costa	94806	5531	1,693	36	1,729
	•		•				

					T	Т	1
6013366001	San Pablo	Contra Costa	94806	4514	1,117	34	1,151
6013366002	San Pablo	Contra Costa	94806	6627	1,584	71	1,655
6013368001	San Pablo	Contra Costa	94806	4817	1,236	85	1,321
6013368002	San Pablo	Contra Costa	94806	3782	956	125	1,081
6013369001	San Pablo	Contra Costa	94806	7254	2,026	240	2,266
6013314200	Unincorporated Contra Costa County Area	Contra Costa	94565	7748	1,473	50	1,523
6013315000	Unincorporated Contra Costa County Area	Contra Costa	94520	3862	1,077	811	1,888
6013327000	Unincorporated Contra Costa County Area	Contra Costa	94520	7430	1,627	1,001	2,628
6095252502	Fairfield	Solano	94533	2106	596	281	877
6095250801	Unincorporated Solano County Area	Solano	94592	4135	1,079	45	1,124
6095252402	Unincorporated Solano County Area	Solano	94534	5549	1,470	361	1,831
6095253500	Unincorporated Solano County Area	Solano	94571	10676	308	323	631
6095250701	Vallejo	Solano	94590	3529	767	196	963
6095250900	Vallejo	Solano	94590	2654	1,133	344	1,477
6095251000	Vallejo	Solano	94590	2654	1,122	69	1,191
6095251200	Vallejo	Solano	94590	3663	1,068	222	1,290
6095251500	Vallejo	Solano	94590	4326	1,362	348	1,710
6095251600	Vallejo	Solano	94590	2580	1,086	123	1,209
6095251802	Vallejo	Solano	94589	2770	927	406	1,333

6095251901	Vallejo	Solano	94589	5119	1,626	73	1,699
6095251902	Vallejo	Solano	94589	6173	1,508	59	1,567

In total, MCE serves 54,897 customer accounts located within DACs. This represents approximately 9.5% of MCE's total customer accounts (approximately 580,000).

MCE is dedicated to reducing pollution impacts and encouraging the development, health, and prosperity of DAC within and outside our service area. Our commitment is reflected in the practices, programs, and policies described below.

Green Access and Community Solar Connection Programs

MCE is collaborating with the Commission, Investor-owned Utilities ("IOU"), and other CCAs to develop community solar programs for customers in DACs. These programs will be supported by the development of an additional 5.92 MW of new, local, clean energy capacity.

The Green Access program will supply 100% renewable power to customers located in a DAC with an accompanying 20% bill discount. The program currently serves 3,000 customers, and MCE prioritizes customers who live in the highest scoring DACs and are currently participating in either the California Alternate Rates for Energy ("CARE") or Family Electric Rate Assistance ("FERA") discount program and need additional support to get caught up on their energy bills. Eligible customers will be served by this 4.64 MW solar resource once it comes online, currently expected by December 2023.

The Community Solar Connection program will offer 100% solar energy and provide a 20% discount on the electricity portion of participating customers' energy bills. This program also involves developing a solar project within 5 miles of a DAC to serve participating customers. At least 50% of the program's participation capacity will be reserved for customers who are enrolled in CARE or FERA discount programs. Efforts to procure the 1.28 MW solar resource for this program are currently ongoing.

MCE estimates that it will be able to provide approximately 3,500 customers in DACs with bill discounts after both programs are up and running.

Sustainable Workforce and Diversity Policy

In 2017, MCE's Board approved a Sustainable Workforce and Diversity Policy³⁴ to facilitate and encourage diversity and a sustainable workforce through its support for the following:

- 1. Fair compensation in direct hiring, renewable development projects, customer programs, and procurement services;
- 2. Development of locally generated renewable energy within the MCE service area;
- 3. Direct use of union members from multiple trades;
- 4. Quality training, apprenticeship, and pre-apprenticeship programs;
- 5. Direct use of local businesses in MCE's service area;
- 6. Development of California-based job opportunities;
- 7. Business and workforce initiatives located in low-income and disadvantaged communities;
- 8. Direct use of Disabled Veteran-owned Business Enterprises ("DVBE") and LGBT-owned Business Enterprises ("LGBTBE");
- 9. Direct use of green and sustainable businesses; and
- 10. Direct hiring practices that promote diversity in the workplace.

More recently, in 2022 MCE adopted Sustainable Workforce Guidelines³⁵ to create a more detailed plan for implementing its Sustainable Workforce and Diversity Policy, further demonstrating our commitment to procuring resources that benefit our customers, our planet, and our future. These guidelines outline how MCE integrates these priorities into PPAs with third parties, MCE-owned or MCE-led power generation projects, and MCE customer programs, services, supplies, and direct hiring. For example:

- When possible, MCE shall give preference to projects within MCE's service area and to CBOs and local associations serving disadvantaged and low-income communities.
- MCE has three tiers of requirements for union labor depending on the location of proposed projects. Projects located in Contra Costa County and over 1 MW in size must adhere to the terms of the Project Labor Agreement ("PLA") between MCE and International Brotherhood of Electrical Workers ("IBEW") Local 302 ("MCE/IBEW PLA"). Projects within Napa, Marin, or Solano County must participate in a PLA of similar

³⁴ See MCE November 16, 2017, Board of Directors Meeting Packet, Agenda Item No. 7 Attachment A https://www.mcecleanenergy.org/wp-content/uploads/2020/05/MCE-Board-Meeting-Packet-November 2017.pdf.

³⁵ See https://www.mcecleanenergy.org/wp-content/uploads/2022/05/MCE-Sustainable-Workforce-Guidelines 05122022.pdf.

scope and requirements with participating unions for workforce hired as described in the MCE/IBEW PLA. Projects outside of MCE's service area are encouraged to enter into project labor agreements of similar scope and requirements with participating unions for workforce as described in the MCE/IBEW PLA.

- For projects located in MCE's service area, 50% of work hours are required to come from permanent residents who reside within the same county as the project.
- MCE will not accept any proposals for projects that rely on equipment or resources built with forced labor. MCE adopted this prohibition two years ahead of federal law, signed by President Biden in June 2022.
- Any renewable development project that is developed or owned by MCE qualifies as a public works project and requires prevailing wages to be paid.

These efforts have resulted in significant local developments. To date, MCE has helped build almost 48 MW of new renewable projects in our service area. All local projects over 1 MW were built with union labor. Additionally, in 2021 MCE launched two new community solar programs, Community Solar Connection and Green Access, both described above.

These programs offer qualifying customers living in a CalEnviroScreen-designated DAC access to 100% renewable energy and a 20% discount on their electricity bills for up to 20 years. Both programs will be supported by the development of additional new clean energy resources.

In developing its Compliance IRP, MCE carefully considered the impact of its resource procurement on DACs. MCE's PCP minimizes the use of fossil-based resources and unspecified system power, reducing reliance on natural gas generators that have an impact on DACs.

Ad Hoc Workforce Development

Growing the green economy, supporting local contractors, and providing access to workforce development opportunities are core to MCE's mission. One avenue for job creation is through energy efficiency, which lowers energy consumption and can save customers money while reducing greenhouse gas pollution and producing more equitable communities. Importantly, improving the built environment through energy efficiency also creates strong job opportunities, including among populations facing additional barriers to workforce entry. Encouraging the creation of local green job opportunities is rooted in the history of MCE's efforts to create more equitable communities, while also reducing GHG emissions through renewable energy projects and electrification of the built environment and the transportation sector. For example, MCE has:

Partnered with the Marin City Community Development Corporation from 2012–2016

- to train 59 community members and connect them to solar installation and energy efficiency jobs.
- Partnered with RichmondBUILD in 2013, 2015, and later in 2021 to help 44 job seekers develop construction, numeracy, and literacy skills, and later connect them with related jobs for MCE Solar One and an LED retrofit project for city streetlights.
- Partnered with Rising Sun Center for Opportunity in 2012 and 2016 to train youth to provide no-cost energy and water-saving assessments in the cities of Richmond, El Cerrito, and San Pablo. More recently in 2021–22, helped customize a Rising Sun training construction curriculum to train five cohorts on green construction basics and give them an intro to electrification and energy storage systems.
- Coordinated the installation of a new call center in the City of Pittsburg through its contract with Calpine in 2017, and then partnered with Future Build in Pittsburg (a county workforce development program) to train students on call center basics, call handling, energy data, and more. Graduates of the training were offered positions at the new call center.
- Partnered with GRID Alternatives in 2021 to train six job seekers from Marin City and the Canal District on solar installation skills and provided them a paid stipend for their participation, to increase access and minimize barriers.
- Sponsored a collaboration with Puertas Abiertas Community Resource Center to develop a direct connection between local hard-to-reach communities and the opportunity to inform and engage with these communities on MCE programs and services, especially those programs developed specifically for underserved populations. This program sponsorship was a workforce development opportunity for organization staff to learn more about renewable energy, energy efficiency, and environmental sustainability.

To deepen MCE's commitment to creating equitable green jobs, MCE has been an active participant in the regional High Road Training Partnership ("HRTP") led by the Rising Sun Center for Opportunity since 2021. The joint project aims to understand regional decarbonization labor market demands, workforce issues, and training needs; establish industry labor standards; and develop clear, accessible training pathways to building decarbonization jobs in the Bay Area, especially for entry-level and disadvantaged workers.

Together with other key partners — including the Association for Energy Affordability, Electrify My Home, Inclusive Economics, Eco Performance Builders, Building Electrification Institute, Bay Area Metro, GENTEC Services, Emerald Cities Collaborative, StopWaste, the Greenlining Institute, Construction Trades Workforce Initiative, the Cities of Berkeley and Oakland and the Association of Bay Area Governments — MCE staff collaborate and hear from leaders in the

industry to address important equity and access aspects of a renewable economy. As a member of the Equity and Public Agencies Working Groups, MCE staff work to lay the groundwork for this industry while improving agency programming.

Creating Energy Efficiency Jobs

In 2018, the CPUC awarded MCE \$2.24 million through 2025 to offer a broad spectrum of opportunities to prepare the local workforce for careers in energy efficiency. This funding allows MCE to streamline workforce investments into a sustainable pipeline of long-term green job opportunities for community members, while strengthening the local economy and contributing to a just transition to a clean energy economy. This path is especially important in communities where the fossil fuel industry has long been a primary employer for generations of families. To ensure that a decarbonized energy future provides economic opportunities for all, workforce programs like these are a necessary link to train for the skills needed to enter the green economy.

As a result, in 2020 MCE launched the Workforce, Education, and Training ("WE&T") Program to create a geographically diverse pool of training partners able to provide job seekers with the skills necessary to be competitive in the energy efficiency and electrification sector. This program funds on-the-job training and up to 12 months of wrap-around services to support their transition to a new career in energy efficiency and electrification. While providing an onramp for job seekers, the WE&T Program concurrently allows vetted contractors working in MCE's service area to be matched with these prequalified job seekers for 160 hours of no-cost project assistance and labor. By influencing both the supply side and demand side of this industry, MCE hopes to increase the number of skilled workers and strengthen the local labor market.

With engagement from local partners, community colleges, and the existing contractor workforce, MCE has developed an internship program to achieve the following goals:

- Upgrade the existing contractor workforce's technical expertise on energy efficiency and electrification technology;
- Fund the training of job seekers;
- Match qualified job-seeker trainees with trained contractors and pay for a local internship in a "learn and earn" model; and
- Provide project site opportunities where the intern can install efficiency and electrification measures while helping MCE customers increase the efficiency, health, and safety of their homes and businesses.

Long term, MCE hopes to solidify this trainee-to-employee pipeline so that it can continue investing in technical training, creating onramps to career pathways, providing job security, and building the economic health of member communities.

Equity in Power Purchasing

As of 2021, MCE's Open Season solicitation encourages suppliers to consider community benefits and equity metrics when submitting offers. Some of the optional elements that MCE solicits in offers include:

- Support for educational programs, environmental justice initiatives, and workforce development and training initiatives;
- Participation of contractors, subcontractors, or businesses owned by disabled veterans;
- Projects located in a designated DAC or employing workers living in a designated DAC;
 and
- Use of components and materials manufactured or assembled in the United States.

In late 2020, when issues related to the use of forced labor for solar equipment production in Xinjiang, China, were reported, MCE incorporated new language into its PPA term sheets and contracts that prohibit MCE from contracting with facilities that rely on equipment or resources built with forced labor. This language was incorporated into MCE's 2021 and 2022 Open Season, Green Access, and Community Solar Connection PPAs, and will continue to be an MCE procurement requirement.

Strategic Recruiting and Hiring Practices

Practices include targeted job postings, partnerships with community-based organizations ("CBOs"), education and employment organizations, physical attendance at job recruitment fairs, blind resume reviews, and the creation of diverse hiring panels. Some MCE jobs may substitute experience for education requirements. MCE has also tailored employee benefit packages to be more inclusive and to apply to a broad range of people.

Community Power Coalition

To facilitate direct community collaboration in the development, progress, and evolution of its mission MCE engages its Community Power Coalition ("CPC"). Formed in 2014, the CPC seeks to represent the interests of underrepresented and historically marginalized communities through collaboration and open dialogue with MCE. The CPC currently has over 40 members and meets every two months. MCE's recruitment for the CPC prioritizes organizations that:

- Expand awareness and access to affordable renewable services;
- Accelerate the transition to a clean energy future through workforce development training opportunities;
- Develop inclusive programs and policies at MCE; and
- Identify just and equitable community collaboration opportunities aligned with MCE's environmental justice values.

Adding these voices and their questions to the CPC working group deepens MCE's understanding about the groups' challenges and the measures or types of support that are needed. MCE's CPC strengthens its connection to the community and offers expert advice on the needs of their constituents and how MCE can best support underserved customers and environmental equity through its programs, policies, and procurement.

Building Community Resiliency

To mitigate the impact of grid outages and Public Safety Power Shutoff ("PSPS") events, and improve overall grid reliability, MCE's Board of Directors approved a Resiliency Fund in 2019.

In 2020, MCE launched its Energy Storage Program to deploy up to 15 MWh of customer-sited battery storage systems that can provide backup power during grid outages and reduce GHG emissions and costs. This program prioritizes vulnerable customers and populations that are disproportionately affected by grid outages. The program leverages incentives from the CPUC's Self-Generation Incentive Program ("SGIP"), coupled with gap funding and performance-based payments provided through MCE's Resiliency Fund.

To extend the impact of this program, MCE is working with the Marin Community Foundation. Through a three-year grant of \$750,000 from the Buck Family Fund, this partnership is stretching MCE's contributions to secure local resilience in Marin. These funds will be used to cover the costs for select critical facilities operated by nonprofits throughout Marin County to provide backup power to vulnerable communities during planned or unplanned outages.

As described above, on May 26th, 2022, MCE was approved to join the implementation of a \$5 EPIC grant from the CEC to develop an Advanced Energy Community ("AEC"). The grant will be used to develop a pilot VPP within the City of Richmond. The goal of Richmond Advanced Energy Community is to connect 120 sites to the VPP including 10 rehabilitated homes, 90 homes occupied by low-to-middle income residents (which have already received solar systems from GRID Alternatives), 18 commercial sites, and 2 industrial sites. Combined, the 120 sites are expected to contribute 1 MW of solar, 2 MWh of energy storage, and 1.5 MW of flexible load by December 2024.

The VPP will allow MCE to aggregate and dispatch DERs to manage critical peak loads, minimize procurement costs, and - as market opportunities evolve - generate value in wholesale markets. Participants may not be enrolled in other DER aggregation or demand response programs. Participants will receive modern appliances, bill savings, and bill credits. During later phases, this program may help MCE expand its role as a California Independent System Operator ("CAISO") market participant by aggregating resources that can be dispatched into the CAISO market.

COVID-19 Customer Support

In response to the COVID-19 pandemic, MCE launched additional programs and services to support its customers. The \$10 million MCE Cares Credit Program offers qualifying customers bill relief in the form of a \$10 monthly bill credit for residential customers and a 20% monthly bill credit for small businesses. This program pairs with state discount programs and the Arrearage Management Program ("AMP"), in which MCE was an early participant.

MCE's ongoing COVID relief efforts include suspension of collections; direct outreach to customers to encourage enrollment in existing discount and utility bill assistance programs; an education and awareness program to spread the word about community resources and programs for financial assistance; and free EV charging at MCE's San Rafael office. The relief efforts were promoted online, via social media, with signage, and through local business and residents groups from early 2020 through the summer of 2022. MCE also launched two webpages providing a comprehensive list of COVID support resources for residential and small business customers, by county. In 2021, MCE partnered with local CBOs to distribute bill-savings program flyers in English and Spanish.

e. Cost and Rate Analysis

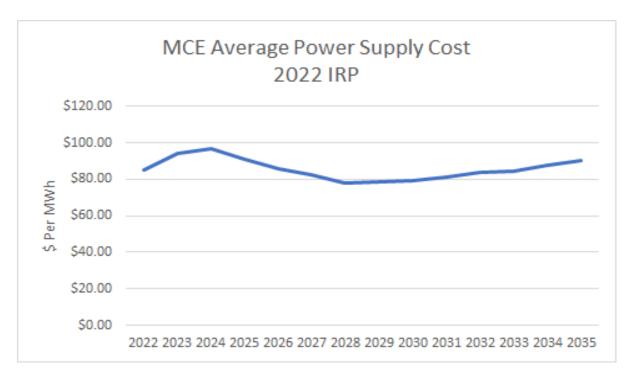
MCE strives to minimize carbon emissions associated with the electricity it supplies to customers while maintaining competitive rates and minimizing customer bill impacts. MCE also prioritizes reliability and seeks a supply portfolio that minimizes risks related to transmission congestion, curtailments, project development risks, and other uncertainties that impose the potential for unanticipated costs. MCE's PCP was developed with these goals in mind. Resources were selected for least cost and best portfolio fit based on associated emissions, delivery profile, risk, commercial viability, and reliability. MCE considers both the direct resource costs (*e.g.*, contract price) as well as the value of each resource in its portfolio, taking into account the different resource characteristics of the various portfolio options.

MCE modeled the expected portfolio costs of its PCP to evaluate cost and rate impacts on customers. The results of this cost analysis are illustrated in the figure below. System average portfolio costs are projected to increase through 2024, decline from 2025 through 2028, and slowly increase from 2029 through 2035. The compounded annual rate of growth (nominal dollars) between 2022 and 2035 is 0.5%, which is below the expected rate of inflation. The near-term cost increases are primarily driven by high prevailing CAISO energy costs, which are influenced by the significant increase in natural gas prices since the beginning of 2022. Exceptionally high resource adequacy costs are also driving increases in MCE's average portfolio costs. These cost pressures are expected to moderate as new resources are developed and displace more expensive purchases from the short-term markets. It must be noted that the projected portfolio costs are dependent on assumed costs for new resources, and these are subject to considerable uncertainty. MCE engages in competitive solicitations for resource selection and makes resource decisions based on prices offered to it during these solicitations. MCE has observed very little stability in offered resource prices over time as market conditions and external events such as procurement orders, trade tariffs, tax policy and supply chain conditions impact resource costs that are available at any point in time. If these events persist, or additional external events (e.g., new procurement orders) occur, the average portfolio costs may instead continue to increase in excess of MCE's current projections. While MCE's PCP provides a helpful framework for procurement decisions going forward, MCE must remain flexible to respond to market conditions or technological changes as circumstances change. MCE will take steps to minimize bill impacts, but near-term rate increases may be necessary to accommodate increased procurement costs.

In evaluating new resource commitments, MCE seeks generation and/or storage projects that meet portfolio fit considerations and that have positive net present value in consideration of expected contract costs and the value of the energy, reliability, and environmental attributes provided by the project. Such projects help reduce consumer costs relative to alternative sources of energy and capacity.

New resources were selected for the PCP with the goal of minimizing ratepayer impacts, while meeting reliability and environmental policy goals. MCE's plan diversifies across different renewable and low-carbon generation technologies with the goal of reducing use of system energy, thereby reducing market risk and emissions. MCE selected new resources that provide reliability and low emissions (e.g., geothermal) and other carbon-free technologies that have low expected costs (e.g., wind), which in conjunction with resources already under contract provide a least-cost, best-fit portfolio solution. In modeling expected ratepayer costs, MCE generally used cost assumptions consistent with RESOLVE modeling and the PSP. While not the lowest cost resource option, geothermal resources were included in the PCP to provide

reliability benefits from additional clean, firm resources. These resources have relatively low GHG emissions, and their ability to reliably produce energy on a near 24X7 basis warrants a role despite somewhat higher costs. Technological diversification in use of resources capable of providing firm energy reduces ratepayer risk that could arise from overdependence on new technologies such as long duration storage. The PCP includes lower cost wind resources to help minimize ratepayer impacts while meeting environmental and reliability objectives. MCE's PCP also minimizes exposure to volatile natural gas and system power prices and the bill impacts that can result from periodic spikes in fossil fuel prices.



<u>f.</u> System Reliability Analysis







g. High Electrification Planning

Under a high electrification scenario, MCE's energy and peak demand requirements would increase, with most of the increase occurring toward the latter end of the planning period. MCE projected the load impacts of a high electrification scenario based on the 2022-2023 TPP High Electrification Load Sensitivity RESOLVE Modeling Results available on the 2019-2020 IRP Page.³⁶

Assuming similar impacts within the MCE service territory, MCE's adjusted load forecast is shown below:

³⁶ https://www.cpuc.ca.gov/-/media/cpuc-website/divisions/energy-division/documents/integrated-resource-plan-and-long-term-procurement-plan-irp-ltpp/2019-2020-irp-events-and-materials/2022-2023-tpp-high-electrification-sensitivity-resolve-results.pdf.

Table 8: MCE's 2024-2035 Load Forecast - High Electrification Scenario

Year	Retail Sales (MWh), Base Case	Retail Sales (MWh), High Electrification	Impact of High Electrification (MWh)	
2024	5,759	5,759	21	
2025	5,756	5,756	ě	
2026	5,759	5,759	-	
2027	5,767	5,767	-1	
2028	5,795	5,843	48	
2029	5,827	5,959	132	
2030	5,955	6,176	221	
2031	5,983	6,325	342	
2032	6,040	6,507	467	
2033	6,040	6,637	597	
2034	6,067	6,802	735	
2035	6,099	6,974 875		

Table 9: MCE's 2024-2035 Peak Demand Forecast - High Electrification Scenario

Year	Annual Coincident Peak Demand (MW), Base Case	Annual Coincident Peak Demand (MW), High Electrification Case	Impact of High Electrification (MW)
2024	1,273	1,273	en.
2025	1,275	1,275	<u> </u>
2026	1,282	1,282	-
2027	1,289	1,289	말
2028	1,306	1,310	4
2029	1,313	1,325	12

2030	1,346	1,366	20
2031	1,357	1,388	31
2032	1,376	1,418	43
2033	1,375	1,429	54
2034	1,379	1,505	126
2035	1,378	1,576	198

The high electrification scenario changes load profiles and shifts peak load to later in the evening, primarily due to expected increases in electric vehicle charging. This shift in load profiles explains why the volumetric energy (MWh) forecast is impacted by a greater percentage than the coincident peak demand (MW) forecast. In 2035, for example, MCE projected annual retail sales are 14% higher under the high electrification scenario, while coincident peak demand is only 6% higher.

In order to maintain GHG emissions below the assigned limits, MCE would expect to increase its proportionate use of renewable and other low GHG emitting resources. While MCE can not specify the exact resources or resource type it would utilize, this would most likely come from additional out-of-state and/or offshore resources. MCE does not have sufficient information at this time to specify Transmission Zone and Substation/Bus locations for these hypothetical resource additions; however, a hypothetical example of a generic wind resource is provided in the table below.

Table 10: MCE's Planned Out-of-State and Off-Shore Wind Resources

Resource Type	MWs	Annual GWh	2035 GHG target	Transmission Zone	Substation/ Bus	Alternative Location	Note
Wind	250	900	0.504	Wyoming/ Idaho	TBD	Morro Bay	See subsections I. and m. for discussion

h. Existing Resource Planning

Since MCE's launch in 2010, MCE has been committed to building and expanding access to instate renewable generation resources. This is reflected by approximately 700 MWs of new build

renewable generation MCE has added to the grid and the additional approximately 500 MW³⁷ of new build that MCE currently has under contract and that will be coming online by middecade. Further, as demonstrated in MCE's PCP, which covers the full planning horizon, MCE will continue to drive significant new resource development, which will have a corresponding decrease in MCE's planned use of existing resources.

As compared to MCE's 2020 IRP, planned reliance on existing resources in 2030 has declined from 754 MW to 503 MW. Under MCE's PCP, existing resources are planned to make up less than half of MCE's total portfolio NQC in 2035. These existing resources include renewable resources that are already online and under contract, expected allocations of CAM resources from the PG&E portfolio, and expected resource adequacy contracts with existing generators.

Particularly during this energy transition and the need for renewables integration, it is reasonable and necessary to assume continued use of existing resources in light of studies indicating the importance of retaining existing resources to ensure grid reliability. The 2021 PSP, for example, shows retention of much of the existing natural gas fleet. MCE's planned reduction in use of existing resources from 100% today to less than 50% in 2035, however, accommodates planned generator retirements and provides a reasonable transition away from fossil fueled capacity toward storage and other non-GHG-emitting technologies. MCE utilizes various procurement strategies to ensure access to resources in the market, including multi-year forward contracting with new and existing resources.

i. Hydro Generation Risk Management

In developing its PCP, MCE took the following three key steps to manage the risk of reduced hydro-electric availability due to in-state drought:

- First, MCE reduced its overall reliance on large hydro-electric generation by adopting ambitious 2035 targets for renewable energy (which excludes large hydro-electric). More specifically, MCE's PCP in 2035 consists of 87% eligible renewable generation, which will limit its large hydro-electric procurement to 13% or less. This compares to MCE's current use of large hydro for up to 40% of its electricity supply. MCE's 87% renewable energy target significantly exceeds its current 60% level, and it also exceeds the 85% target that MCE submitted to the Commission in its 2021 Compliance IRP.
- Second, to the extent hydro-electric fits into the portfolio, MCE has an established network of Pacific Northwest hydro suppliers, including entities that have substantial

³⁷ This number does not include incremental Shed Demand Response that MCE recently secured under contract (*i.e.*, 15 MW of September NQC that is eligible incremental capacity under D.19-11-016).

- ACS energy volumes. As a result of these substantial ACS volumes, suppliers are able to sell MCE reliable, firm volumes.
- Third, MCE has the ability to take deliveries of hydropower outside of the CAISO and schedule/import such volumes into the CAISO on its own, as a purchasing-selling entity registered with the North American Electric Reliability Corporation ("NERC")-affiliated North American Energy Standards Board ("NAESB"). This substantially increases MCE's flexibility as a counterparty and therefore provides MCE increased access to greater volumes of non-California hydro-electric resources from suppliers that may not be willing, themselves, to be the importer of record.

To the extent that hydro supply is unavailable, MCE would plan to use other sources of low carbon or carbon-free energy, which may include additional qualifying renewable energy. Considering the relatively small volume of planned large hydro, the cost impacts of supply unavailability is limited. At the extreme, if MCE needed to replace its entire planned large hydro-electric energy with a renewable energy source such as wind, the cost impact to the portfolio is estimated to be less than 10%. A more realistic drought scenario would have cost impacts in the range of 0% to 5%. Moreover, the PSP's hydro-electric energy resources are planned as energy-only. As such, there would be no direct reliability impacts to MCE's PSP in the event of drought, although there may be system-wide reliability impacts to the extent that other LSEs utilize large hydro-electric resources for capacity purposes.

One technique MCE uses to manage variable hydro conditions is to include planned margins of over procurement in its hydro-electric purchasing strategy. These reserve margins apply to forward procurement and are gradually released as better information about hydro-electric availability becomes known.

j. Long-Duration Storage Planning

MCE is planning significant new battery storage capacity to help balance load and supply as it integrates a greater percentage of renewable energy into its supply mix and continues to reduce reliance on natural gas generation capacity. MCE sees a greater need and role for long-duration storage as the grid continues to evolve. To address this need, MCE is procuring to meet its long-duration storage requirement under D.21-06-035 (*i.e.*, 29 MW of NQC) and anticipates procuring an additional 50 MW NQC of long-duration storage resources in the 2030 to 2035 timeframe.

In MCE's view, battery storage technology is currently the most commercially viable technology to qualify for this long-duration attribute. However, MCE is also evaluating other technologies that have long-duration storage capability as well. Technology performance risk is the biggest

unknown at present because, with the exception of pumped hydro storage, there is no track record for utility scale, long-duration storage. MCE expects rapid technological improvement in battery storage as the industry continues to scale-up and anticipates declining costs in the longer-term. In the short-term, however, costs are increasing, and project opportunities are limited, particularly when the procurement is on accelerated procurement timelines. These factors may impact the pace at which MCE adds storage to its resource portfolio.

k. Clean Firm Power Planning

MCE has prioritized acquisition of clean firm resources beyond what is required under existing Commission procurement orders. Despite higher costs, clean firm resources provide reliable capacity and a higher-value energy delivery profile as compared to solar and other intermittent resources. MCE is planning for greater use of geothermal resources over time due to its low carbon emissions and high resource value. Unfortunately, supply of geothermal, and clean firm resources generally, is very limited in California, and the cost of new-build resources is significantly higher. Clean firm energy imported from other balancing areas is complicated by transmission availability and the need to obtain equivalent Maximum Import Capability ("MIC") through the CAISO in order to utilize the capacity under the resource adequacy program. Despite these challenges to their expanded use, clean firm resources are important contributors to reliability and offer operational attributes that cannot be replicated by currenttechnology storage or other resource types. To develop these resources cost-effectively and efficiently, California LSEs will need the commitment of regulatory agencies and CAISO to facilitate this resource development by ensuring regulatory procedures and requirements align with market realities and that the transmission infrastructure necessary for this development is available and accessible to California LSEs.

I. Out-of-State Wind Planning

MCE's PCP includes 70 MW of new, out-of-state wind, assumed to be located in New Mexico, with deliveries commencing in 2030. The choice of New Mexico wind is not intended to reflect a definitive plan for procurement from this area, and other locations for future wind projects are possible. New Mexico was selected as a likely source based on MCE's review of wind projects that have been offered in recent solicitations. These opportunities utilize existing firm transmission routes into the CAISO. However, MCE observes the significant potential in the PSP for wind located in Wyoming and Idaho, as well as transmission projects being planned that would allow for delivery of this resource to California, which would indicate opportunities to contract for new wind from these areas should be prevalent in the 2030 timeframe provided the planning and construction of the Southwest Intertie Project-North ("SWIP-North") transmission line proceeds expeditiously. Absent certainty that the SWIP-North transmission

line will be available with the appropriate level of import allocations and deliverability assurances for California LSEs, it will be difficult, or impossible to invest in this region's renewable generation potential.

m. Offshore Wind Planning

MCE's PCP includes 95 MW of offshore wind, assumed to be located at Morro Bay, with deliveries commencing in 2033. MCE has not yet seen any proposed opportunities to contract for offshore wind and is basing its planning assumption on the significant potential indicated in the PSP. Offshore wind appears to be a high potential resource with relatively high-capacity factors and resource adequacy values. At this time, costs of offshore wind development and maintenance infrastructure are largely unknown. As such, cost and development timelines pose the greatest risk to utilization of this resource. Despite these near-and possible near-term barriers to progress on this front, MCE is monitoring the issue as it evolves, and procurement of offshore wind becomes feasible.

n. Transmission Planning

i. New Projects

This section describes new generation projects that are under development and planned projects that have been specifically identified through MCE's procurement processes where there is sufficient locational specificity that could be useful to the transmission planning process.

ii. Projects Under Development

Strauss Wind, LLC

This is a new-build wind project. The expected commercial operation date ("COD") is in 2023, and MCE intends to apply this resource towards its procurement requirements under D.19-11-016. The project is located in Santa Barbara County. The interconnection queue position is WDT-1320. All transmission upgrades needed for this project have been completed. The Strauss Wind project is represented in both the 30MMT and 25MMT RDTs, respectively, as incremental capacity. Please refer to row 41 of the unique_contracts tab in MCE's RDTs.

Golden Fields Solar IV, LLC

This is a new-build hybrid project located in Kern County that pairs 100 MW of solar with 92 MW four-hour battery storage. The project has an expected COD of March 2025 and is intended to apply towards MCE's mid-term reliability ("MTR") requirements under D.21-06-035. The interconnection queue position for this resource is Q-1211, and the project will connect at the Southern California Edison ("SCE") Whirlwind 230 kV substation. Transmission upgrades needed for this project are expected to be completed in October 2024. These transmission upgrades are described in Appendix A to the Large Generator Interconnection Agreement ("LGIA") and include participating transmission owner (*i.e.*, SCE) reliability network upgrades. The Golden Fields Solar project is represented in both the 30MMT and 25MMT RDTs, respectively, as incremental capacity. Please refer to row 51 of the unique_contracts tab in MCE's RDTs.

Daggett Solar Power 3, LLC

This is a new-build hybrid project located in San Bernardino County that pairs 110 MW of solar with 60 MW of four-hour battery. The project has an expected COD of August 2023, and MCE intends to apply this capacity towards its MTR requirements under D.21-06-035. The interconnection queue position is Q-1314, and the project will connect at Kramer Substation 220kV switchrack. Transmission upgrades needed for this project are expected to be completed in December 2022. These transmission upgrades are described in Appendix A to the LGIA and include participating transmission owner (*i.e.*, SCE) reliability network upgrades. The Daggett Solar Power project is represented in both the 30MMT and 25MMT RDTs, respectively, as incremental capacity. Please refer to row 55 of the unique_contracts tab in MCE's RDTs.

Hecate Grid Humidor Storage 185, LLC

This new 185 MW four-hour battery storage project has an expected COD of April 2024 and will be located in Los Angeles County. MCE intends to apply this capacity towards its MTR requirements under D.21-06-035. The interconnection queue position is Q-1629, and the project will connect at SCE Vincent Substation, 220kV Bus. Transmission upgrades needed for this project are expected to be completed in Q4 2023. These transmission upgrades include extending the existing 230kV bay within the substation and installing an intermediate structure to connect to the Point of Interconnection ("POI") riser outside of the substation. The Hecate Grid Humidor Storage project is represented in both the 30MMT and 25MMT RDTs,

respectively, as incremental capacity. Please refer to row 64 of the unique_contracts tab in MCE's RDTs.

RPCA Solar 3 - Byron Highway Solar

This is a new-build 5 MW solar project located in Contra Costa County. The project has an expected COD of November 2022. The interconnection queue position is 2296-WD, and the project will connect at Brentwood distribution substation. All transmission upgrades needed for this project have been completed. The RPCA Solar 3-Byron Highway Solar project is represented in both the 30MMT and 25MMT RDTs, respectively. Please refer to row 40 of the unique contracts tab in MCE's RDTs.

Ranch Sereno Clean Power, LLC

This is a new build 2MW solar project with 0.8 MW of four-hour battery storage. The project is located in Contra Costa County and has an expected COD of February 2024. The interconnection queue position is 2597-WD, and the project will connect at PG&E's Brentwood distribution substation. No transmission upgrades are required for this project. The Ranch Sereno Clean Power project is represented in both the 30MMT and 25MMT RDTs, respectively. Please refer to row 52 of the unique_contracts tab in MCE's RDTs.

CES Electron One Farm, LLC

This new-build project consists of two solar projects sized at 4.4 MW and 0.24 MW. The projects are located within specified Disadvantaged Community areas in Fresno County and have an expected COD of December 2023. The interconnection queue position is 2226-WD, and the project will connect at PG&E's Panoche distribution substation. No transmission upgrades are required for this project. The CES Electron One Farm project is represented in both the 30MMT and 25MMT RDTs, respectively. Please refer to rows 53 and 54 of the unique_contracts tab in MCE's RDTs.

iii. Projects Under Review





iv. Planned New (Generic) Projects

The following projects included in the PCP are generic in nature. Locations and technology resource types are subject to change as MCE advances in its procurement.

OS22 New Wind 2026

This generic 100 MW wind project with initial deliveries commencing in 2026 is assumed to be located in the Tehachapi area.

Generic LT Wind NM 2030

This generic 70 MW wind project with initial deliveries commencing in 2030 is assumed to be located in New Mexico. Please see subsections iv. and v., below, for additional details on planning assumptions for this project.

Generic LT Wind 2033

This generic 95 MW wind project with initial deliveries commencing in 2033 is assumed to be located offshore of Morro Bay. Please see subsections iv and v, below, for additional details on planning assumptions for this project.

Generic LT Geothermal 2030

This generic 75 MW geothermal project with initial deliveries commencing in 2030 is assumed to be located in the Imperial Valley.

MTR LDS 2026

This generic eight-hour battery storage project with initial operation commencing in 2026 is assumed to be located in Contra Costa.

Generic LDS 2030

This generic eight-hour battery storage project with initial operation commencing in 2030 is assumed to be located in Contra Costa County.

Generic 4 Hour Storage 2028

This generic four-hour battery storage project with initial operation commencing in 2028 is assumed to be located in Solano County.

Generic 4 Hour Storage 2034

This generic four-hour battery storage project with initial operation commencing in 2034 is assumed to be located in Napa County.

IV. Action Plan

a. Proposed Procurement Activities and Potential Barriers

To achieve its PCP over the planning horizon, MCE plans to steadily procure volumes at regular intervals to allow MCE to keep within its established position limits and avoid concentrated procurement during any particular market environment. This is consistent with MCE's risk management approach to spread out the potential cost risks that may be at play in the market at any given year, while maximizing the potential for MCE to optimally procure. At a high level, MCE plans to procure renewables and storage, large hydro-electric and ACS, RA (including incremental capacity required by the Commission) and load-hedging products.

MCE's goal is to procure such products in a manner that is cost effective, achieves emissions and reliability objectives, and supports a well-balanced and optimal resource portfolio.

To support this goal, MCE also considers the following strategies:

Joint Solicitations

Joint solicitations can expand the procurement opportunities available to a CCA, as well as provide procedural efficiencies, economies of scale, and overall cost savings for participating organizations. MCE is closely networked with other CCAs through its membership in the California Community Choice Association ("CalCCA"), the trade organization representing California's CCA sector, and regularly coordinates with other CCAs regarding prospective

procurement opportunities and portfolio balancing activities.

Optimizing Existing Procurement

As MCE considers its long-term resource needs, it will evaluate options in its future PPAs to increase output through either facility upgrades or adding new capacity to the generating facility. Expanding existing facilities may provide additional generation at reduced costs with a lower risk of project failure because the need for distribution system upgrades and permitting may be reduced. However, MCE has experienced some challenges as it pertains to transmission upgrades and deliverability of new capacity on to the grid. MCE continues to engage with relevant stakeholders and developers to evaluate the feasibility of such expansions for implementation.

Annual Energy Solicitations

In addition to periodic joint solicitations, MCE will also run targeted solicitations in the upcoming years to further optimize its current portfolio needs. Such solicitations may provide MCE with flexibility and potential to meet specific portfolio needs and obligations unique to MCE.

MCE also considers the deliverability characteristics of its resources (including the expected delivery profile, available capacity and dispatchability attributes, if any, associated with each of its generating resource and/or supply agreements) and reviews the respective risks associated with short- and long-term purchases as part of its forecasting and procurement processes. These risk evaluations include, but are not limited to, transmission availability, MIC allocation, and exposure to global supply and market forces.

These efforts lead to a more diverse resource mix, help to address grid integration issues, improve the probability of project delivery, and provide value to MCE's member communities through reduced costs and support in achieving planned procurement objectives.

MCE has a well-established procurement process that it will use to steadily achieve its PCP over the next twelve years (*i.e.*, by 2035). This process is used by MCE in executing all its planned new resources. MCE's procurement process includes the following ten key activities:

- 1. Load forecasting based on the number and types of customers, potential service territory expansions, opt-out rates, electrification trends, demand-side resources and weather;
- 2. Integrated resource planning based on load forecasts, renewables and emissions targets, agency-wide budgetary considerations and customer rate implications,

- long- term contracting requirements and goals for new steel in the ground, grid reliability needs and capacity requirements, market price hedging needs and goals for local resources, local resiliency and local workforce development;
- 3. Calculating open positions and interim volumetric needs based on MCE's risk management policies;
- 4. Soliciting volumetric needs through RFOs, bilateral discussions or brokers;
- 5. Evaluating offers using a combination of proprietary and public models;
- 6. Negotiating (and ultimately executing) power purchase agreements, enabling agreements and confirms including credit provisions and collateral requirements;
- 7. Managing pre-COD executed contracts and monitoring progress towards key development milestones (such as interconnection status, deliverability studies, siting, zoning, permitting, financing, construction, commercial operation, etc.)
- 8. Managing post-COD executed contracts: obtaining generation forecasts, bidding/scheduling resources into the CAISO markets, validating and paying invoices, etc.;
- 9. Bidding/scheduling MCE's load into the CAISO markets; and
- 10. Regulatory compliance reporting.

With respect to activity number four listed directly above, MCE plans to conduct an annual "open season" RFO in the first half of each year for new renewable generation and storage projects. MCE anticipates that the majority of its open seasons over the next several years will result in executed long-term PPAs for new renewables and/or storage, and MCE anticipates that such projects will achieve commercial operation within 3 years of contract execution. In these solicitations for long-term renewable energy and storage, MCE imposes numerous bid requirements on interested respondents. These requirements address a variety of considerations and are intended to identify the best qualified suppliers of MCE's long-term renewable energy needs. Such requirements include:

- 1. Overall quality of response, inclusive of completeness, timeliness, and conformity;
- 2. Price and relative value within MCE's supply portfolio;
- 3. Project location and local benefits, including local hiring and prevailing wage considerations;
- 4. Project development status, including but not limited to progress toward interconnection, deliverability, siting, zoning, permitting, and financing requirements;
- 5. Qualifications, experience, financial stability, and structure of the prospective project team (including its ownership);
- 6. Environmental impacts and related mitigation requirements, including impacts to air pollution within communities that have been disproportionately impacted by the

existing generating fleet;

- 7. Potential impacts to grid reliability;
- 8. Acceptance of MCE's standard contract terms; and
- 9. Development milestone schedule, if applicable.

In addition, MCE is planning to solicit offers periodically throughout each year for short term renewable energy, large hydro-electric and ACS, resource adequacy and load-hedging products needed to balance the portfolio and adhere to position limits established through MCE's risk management policy and practices.

MCE uses a portfolio risk management approach in its power purchasing program, seeking low-cost supply, based on then-current market conditions, as well as diversity among technologies, production profiles, project sizes and locations, counterparties, lengths of contract, and timing of market purchases.

A key component of this process relates to the analysis and consideration of MCE's forward load obligations and existing supply commitments with the objectives of closely balancing supply and demand, cost/rate stability and overall budgetary impacts, while leaving some flexibility to take advantage of market opportunities and technological improvements that may arise over time. MCE monitors its open positions separately for each renewable generating technology, GHG-free resources, conventional resources, and its aggregate supply portfolio. MCE maintains portfolio coverage targets of up to 100% of expected customer energy requirements in the near-term (0 to 2 years). Typically, MCE has gradually larger open positions in the mid- to long-term, consistent with generally accepted industry practices.

In addition to the planned and proposed procurement activities, MCE also takes into consideration the various barriers that may impact the success of its planned renewable projects. Some of the potential barriers for each of the new resources identified in MCE's PCP include:

- New Wind: The current market conditions have made new in-state wind resources scarce, which has led to a price premium and escalated cost risks on any available instate wind resources. In addition, the transmission constraints and limited MIC allocation for out of state wind has made it difficult to negotiate and plan for new resources due to the uncertainty of deliverability.
- 2. New Geothermal: Due to the scarcity of new geothermal projects in-state and the uncertainty of deliverability and transmission of out of state geothermal projects, there has been an unprecedented competition on available geothermal, causing an ever-increasing upwards pressure in price. If this trend continues it may impact MCE's ability

- to procure new geothermal resources in the near-term.
- 3. Hybrid Resources: Currently, most hybrid resources primarily consist of intermittent resources like solar. As solar is highly affected by global supply chain issues, most planned projects are facing upward pressures in cost and are consequently facing further delays.
- 4. Storage: Similarly, to hybrid resources, global supply chain issues and the scarcity of the raw materials required for battery production, there is risk and uncertainty in prices and expected delivery dates that may negatively impact MCE's planned portfolio and budgeted costs.

MCE continuously monitors the developments in the market and engages with various market stakeholders including the Commission, CAISO, and other CCAs, to strategize and find solutions to the various barriers and the risks associated with new clean energy procurement. Throughout the planning period MCE will continue to proactively evaluate its planned procurement and make necessary adjustments to meet its portfolio needs as determined by MCE's Board and its operational and compliance needs.

i. Resources to meet D.19-11-016 procurement requirements

In D.19-11-016, the Commission ordered LSEs to collectively procure a total of 3,300 MW of incremental system capacity by 2023, with specific procurement obligations allocated to each LSE. As part of MCE's contribution to system reliability and renewable integration needs, MCE is committed to self-providing its share of the identified system capacity need.³⁸ MCE's assigned share is 87.5 MW,³⁹ 50% of which was online by August 1, 2021, 75% of which was online by August 1, 2022, and 100% of which is expected to be online by August 1, 2023.

D.19-11-016 Procurement Progress Report

MCE has executed agreements that will satisfy MCE's 2021, 2022 and 2023 incremental capacity requirements under D.19-11-016. As of the date of this filing, MCE has 108.77 MW⁴⁰ of

³⁸ Marin Clean Energy's February 15, 2020, Integrated Procurement Planning Progress Report Pursuant to Decision 19-11-016 Adopted in Rulemaking 16-02-007 filed February 18, 2020.

³⁹ D.19-11-016 at Ordering Paragraph 3.

⁴⁰ For consistency purposes, MCE is calculating September NQC based on the most recent ELCC factors adopted in D.22-08-039 and the September NQC assigned to MCE's resources in the RDTs. However, using the more conservative NQC values, MCE has 101.9 MW of NQC either online or under contract to meet its D.19-11-016 requirement. This capacity includes a recently executed agreement for incremental capacity. However, due to the Commission's August 1, 2022, cutoff for contracts, MCE includes this contact in its RDTs as a resource under review (see unique_contracts tab of the RDT Row 115) but includes this capacity in this progress report to provide the Commission the most up-to-date information on its D.19-11-016 procurement. MCE will reflect this resource as in

September NQC under contract; this is NQC not included on the baseline resource list adopted in Rulemaking 16-02-007⁴¹ and exceeds MCE's 87.5 MW incremental capacity requirement. The projects reflected in these contracts are either already online or expected to be online in advance of August 1, 2023.

MCE also provides a narrative description of specific incremental procurement efforts below, which is consistent with the information MCE provides the CPUC in its bi-annual D.19-11-016 compliance filings.

Sutter Energy Center

The Sutter Energy Center project has been online since January 1, 2021 under a 3-year Purchase & Sale Agreement between MCE and Calpine Energy Services, L.P.. The period for this agreement began on January 1, 2021 and will continue through December 31, 2023, which is consistent with D.19-11-016's requirement that commitments based on existing resources must "stay in place at least through the end of the resource adequacy summer months of 2023." Additionally, D.19-11-016 defines the Sutter Energy Center as an incremental capacity resource. Although physically located outside of the CAISO balancing authority, D.19-11-016 also indicates that Sutter Energy Center is not an import for purposes of the capacity procurement ordered by the decision and thus not subject to the D.19-11-016's 20% limitation on import resources.

Sutter Energy Center adds 69.55 MW of incremental capacity to the system from January 2021 through 2023. As such, this project satisfied both MCE's 2021 and 2022 requirements.

The Sutter Energy Center is represented in both the 30MMT and 25MMT RDTs, respectively, as incremental capacity. For this resource, please refer to row 59 of the unique_contracts tab in MCE's RDTs.

Strauss Wind, LCC

In 2018 MCE executed an Amended and Restated Renewable Power Purchase Agreement with

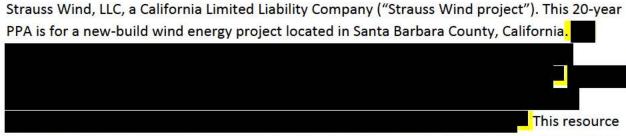
Development in its next D.19-11-016 RDT compliance filing. Under either NQC methodology, MCE has more than its share of incremental capacity under contract for purposes of D.19-11-016.

⁴¹ See Administrative Law Judge's Ruling Finalizing Baseline for Purposes of Procurement Required by Decision 19-11-016 filed January 3, 2020, Rulemaking 16-02-007.

⁴² D.19-11-016 at 47.

⁴³ D.19-11-016 at Ordering Paragraph 6.

⁴⁴ Id.



is a new grid resource that is not included on the baseline resource list adopted in Rulemaking 16-02-007. Thus, the Strauss Wind project is eligible to count towards MCE's assigned 87.5 MW of incremental system resource capacity.

The project began construction in March 2020.

The Strauss Wind project is represented in both the 30MMT and 25MMT RDTs, respectively, as incremental capacity. For this resource, please refer to row 41 of the unique_contracts tab in MCE's RDTs.

MCE Solar One

MCE's Solar One project is currently online and has been delivering energy since December 22, 2017, under a 20-year PPA with MCE. MCE Solar One is a 10.5 MW solar facility located in Richmond, California. Using the current NQC framework, this resource provides an additional 1.16 MW of September NQC that is not reflected on the baseline resource list. As such, MCE Solar One applies towards MCE's incremental system capacity procurement compliance requirement.

The MCE Solar One project is represented in both the 30MMT and 25MMT RDTs, respectively, as incremental capacity. For this resource, please refer to rows 35 and 36 of the unique_contracts tab in MCE's RDTs.

Waste Management Redwood Landfill ("Redwood Landfill Project")

The Redwood Landfill project is currently online and has been delivering energy since September 14, 2017, under a 20-year PPA with MCE. The Redwood Landfill project is a 3.9 MW landfill gas-fired generation facility located in Novato, California. This resource provides an

⁴⁵ See MCE's August 1, 2022, D.19-11-016 Compliance Filing for additional detail provided in the Remediation Plan.

additional 3.39MW of September NQC under the current framework and according to the September NQC assigned in the RDTs. This is incremental capacity that is not reflected on the baseline resource list. As such, the Redwood Landfill project applies towards MCE's incremental system capacity procurement compliance requirement.

The Redwood Landfill project is represented in both the 30MMT and 25MMT RDTs, respectively, as incremental capacity. For this resource, please refer to row 7 of the unique contracts tab in MCE's RDTs.

- i. Resources to meet D.21-06-035 procurement requirements, including:
 - a. 1,000 MW of firm zero-emitting resource requirements
 - b. 1,000 MW of long-duration storage resource requirements
 - c. 2,500 MW of zero-emissions generation, generation paired with storage, or demand response resource requirements

In D.21-06-035, the Commission ordered LSEs to collectively procure a total of 11,500 MW of incremental system capacity by 2026, with specific procurement obligations allocated to each LSE to support mid-term system reliability needs. MCE's assigned share of this procurement is 332 MW of NQC,⁴⁷ 58 MW of which must be online by August 1, 2023, an additional 173 MW of which must be online by June 1, 2024, an additional 43 MW of which must be online by June 1, 2025, and an additional 58 MW of which must be online by June 1, 2026.

MTR Procurement Progress Report

MCE has executed agreements that MCE expects will satisfy its 2023, 2024 and 2025 incremental capacity requirements. As of the date of this filing, MCE has 308.7 MW of eligible NQC under contract towards its D.21-06-035 requirement, which represents 395 MWs of nameplate capacity.

MCE's completed procurement towards its D.21-06-035 requirement is reflected in MCE's 25 MMT and 30 MMT RDTs, respectively. MCE also provides a narrative description of specific incremental procurement efforts below.

Firm Zero-Emitting Resources (MCE Requirement = 29 MW of NQC)



⁴⁷ D.21-06-035 at 56.



Long-Duration Storage (MCE Requirement = 29 MW of NQC)



Zero Emissions Generation (MCE Requirement = 274 MW of NQC)

Golden Fields Solar IV

MCE executed a contract with Clearway Energy Group on February 4, 2022, for a new-build hybrid project located in Kern County that pairs 100 MW of solar PV with 92 MW four-hour battery storage. This project has an expected COD of March 2025, and MCE expects to apply this resource to count for at least 75 MW of NQC towards its general MTR requirements under D.21-06-035, including towards MCE's 72 MW of zero-emitting resources pursuant to Table 6 in D.21-06-035. The Golden Fields Solar project is represented in both the 30 MMT and 25 MMT RDTs, respectively, as incremental capacity. Please refer to row 51 of the unique contracts tab in MCE's RDTs.

Daggett Solar Power 3, LLC

MCE executed a contract with Clearway Energy Group on September 25, 2020, for a new-build hybrid project in San Bernardino County that pairs 110 MW of solar PV with 60 MW four-hour battery storage. This project has an expected COD of August 2023, and MCE expects to apply this resource to count for at least 65.9 MW of NQC towards its MTR requirements under D.21-06-035, which also contributes towards MCE's 72 MW

⁴⁸ MCE expects this resource to provide at least 61.3 MW of DCPP replacement capacity. To apply towards both the general MTR requirements and MCE's requirement to procure 72 MW of zero-emitting resources with certain availability requirements, MCE's PPA for this project ensures that this hybrid resource will be designed to be capable of delivering 5 MWh of energy per every MW of claimed incremental capacity during the 5PM to 10PM period, daily.

of zero-emitting resources pursuant to Table 6 in D.21-06-035.⁴⁹ The Daggett Solar Power project is represented in both the 30MMT and 25MMT RDTs, respectively, as incremental capacity. Please refer to row 55 of the unique_contracts tab in MCE's RDTs.

Hecate Grid Humidor Storage

MCE executed a contract with Hecate Grid in August 2022 for a new 185 MW four-hour battery storage project in Los Angeles County. This project has an expected COD of April 2023, and MCE expects to apply this resource to count for at least 167.8 MW of NQC towards its MTR requirements under D.21-06-035. The Hecate Grid Humidor Storage project is represented in both the 30 MMT and 25 MMT RDTs, respectively, as incremental capacity. Please refer to row 64 of the unique_contracts tab in MCE's RDTs.

i. All other procurement requirements

Open Season RFO

After counting the above-mentioned resources

To fill any current and future open positions, MCE issues annual open season RFOs, which seek to fill approximately 350 GWh of annual energy needs, including any incremental procurement that might be needed to meet D.21-06-035. These RFOs request offers for Portfolio Content Category 1 Renewable Energy and stand-alone, front-of-the-meter energy storage. MCE is in the final stages of completing power purchase agreements with selected respondents from 2021 RFO and expects to procure significant volumes of hybrid resources, all of which will be agreements of at least 10 years in duration. In addition, MCE expects to count these 2021 and future RFOs projects towards any future Commission-directed incremental capacity obligations. While MCE does not anticipate that the new projects will be needed for MCE's share of capacity requirements identified in D.21-06-035, they may provide back up to the projects identified above.

Because these resources are expected/planned, and not currently contracted for, these resources are reflected as "review," "PlannedExisting," and "PlannedNew"resources in both the 30 MMT and 25 MMT Resource Data Templates.

⁴⁹ MCE expects this resource to provide at least 48 MW of DCPP replacement capacity. To apply towards both the general MTR requirements and MCE's requirement to procure 72 MW of zero-emitting resources with certain availability requirements, this hybrid resource is capable of delivering 5 MWh of energy per every MW of claimed incremental capacity during the 5PM to 10PM period, daily.

ii. Offshore wind

MCEs PCP includes 95 MW of offshore wind, assumed to be located at Morro Bay, with deliveries commencing in 2033. MCE has not yet seen any proposed opportunities to contract for offshore wind and is basing its planning assumption on the significant potential indicated in the PSP. Offshore wind appears to be a high potential resource with relatively high-capacity factors and resource adequacy values. At this time, costs of offshore wind development are largely uncertain. As such, costs of offshore wind development and maintenance infrastructure pose the greatest risk to utilization of this resource. However, the completion of environmental impact review and filing a proposed sale notice for the Humboldt Wind Energy Area by the federal Bureau of Ocean Energy Management ("BOEM") is an important initial step. MCE will continue to monitor the developments and will engage the various stakeholders involved, should an opportunity to purchase offshore wind arise.

iii. Out-of-state wind

MCE's PCP includes 70 MW of planned new, out-of-state wind ("OOS"), with deliveries commencing in 2030. MCE has reviewed wind projects that have been offered in recent solicitations and understands that the transmission projects needed to connect OOS Wind to the CAISO grid require significant lead-times. OOS wind opportunities rely on existing firm transmission routes into the CAISO or construction of new transmission with the appropriate level of import allocations and deliverability assurances for California LSEs. Absence of such assurances make it difficult for MCE to realize the significant potential for wind located in Idaho, Wyoming, and New Mexico. Given the fact that OOS Wind is not needed until 2030, MCE believes that a careful and considered approach to potential OOS Wind projects is best. MCE will continue to monitor for opportunities to purchase such resources and will evaluate offers it receives during its annual open season process.

iv. Other renewable energy not described above

v. Other energy storage not described above

MCE is not actively planning for any additional energy storage investments beyond what is described above.

vi. Other demand response not described above

In April 2021, MCE launched the Peak FLEXmarket, a first-of-its-kind program platform aimed at shifting energy use in its service area away from times of extreme demand. Following its initial pilot year, the program received \$11 million in ratepayer funding from the CPUC for the summers of 2022 and 2023. Created in partnership with Recurve, the Peak FLEXmarket provides tools to measure hourly reductions in energy use that allows MCE to compensate businesses working locally with customers for energy savings during peak demand hours. The program is technology agnostic and incentivizes load reductions from a diverse group of technologies including batteries, managed EV charging, controls systems and behavioral/operational change. The Peak FLEXmarket incentivizes regular load shifting and also calls demand response events during periods of extreme grid stress. The Peak FLEXmarket has been included in MCE's Energy Efficiency Business Plan Application for continued funding for the 2024-2027 timeframe.

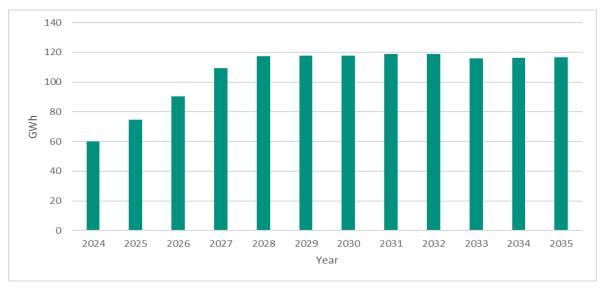
MCE plans to expand this program to monitor and control other customer owned DERs.

In addition to the City of Richmond VPP described above, MCE continues to explore opportunities for demand response in its service area while facilitating third-party demand response programs. MCE customers are eligible for many of the demand response programs administered by PG&E, and MCE receives allocations from PG&E-administered programs. Depending on the results of this analysis, MCE may launch new programs and possibly seek funding from other sources for more robust programs in this sector.

vii. Other energy efficiency not described above

MCE is an administrator of California's ratepayer-funded, energy efficiency programs alongside IOUs and Regional Energy Networks. Ratepayer funding is derived through collection of the Public Purpose Program charge from all electric service customers and is administered by the Commission. MCE has received Commission funding approval for energy efficiency programs to be administered through 2025 and currently administers programs in multifamily, single family, commercial, agriculture, and industrial sectors. Furthermore, MCE administers the Low-Income Families and Tenants ("LIFT") Program, which serves income-qualified, multifamily properties and includes a fuel-switching component to incentivize property owners to replace gas-fired space and water heaters. The forecasted cumulative savings of MCE-administered energy efficiency programs are based on average life cycle savings.

MCE also invests in multiple workforce development initiatives to encourage the growth of green jobs through the approval of its Energy Efficiency Business Plan. MCE also coordinates closely with PG&E to maximize community benefits.



MCE cumulative energy efficiency impacts (GWh)

viii. Other distributed generation not described above

Net Energy Metering and Rooftop Solar Rebates

Through its Net Energy Metering ("NEM") program, MCE supports customer-sited distributed generation within its service area by offering above-market incentives including automatic cash-outs for surplus generation each year at twice the wholesale rate (up to \$5,000). MCE's NEM Program currently includes more than 63,528 customers (10.9% of all MCE accounts) with an aggregate-installed renewable generating capacity of approximately 642 MW.

Through 2021, MCE incentivized local rooftop solar development for low-income customers. MCE has a long-standing partnership with California's Single Family Affordable Solar Housing ("SASH") program administrator, GRID Alternatives. By leveraging multiple sources of funding, GRID Alternatives installs these systems in disadvantaged communities at little to no cost for the customer. MCE contributed \$900 per solar installation to qualifying low-income, single-family homeowners. MCE also offered a \$0.41 per watt (AC) rebate to low-income, multifamily properties that install solar to benefit their tenants.

From 2012–2021, MCE allocated \$725,000 toward these two rebate programs, and supported the installation of 688 residential solar PV systems on low-income multifamily homes. These

installations represent more than 1,400 kW of new, local, renewable capacity that helps reduce monthly energy bills for low-income families.

ix. Transportation electrification, including any investments above and beyond what is included in Integrated Energy Policy Report (IEPR)

As part of its broader strategy to reduce GHG emissions through buildings and transportation electrification, MCE has been working on several EV-related initiatives since 2017. These include demand response-enabled charging devices, equity-centered incentives for EVs, and funding for charging stations. These efforts started with a strategic plan and infrastructure analysis in partnership with the U.S. Environmental Protection Agency to analyze local EV market trends and their impact on MCE's customer demand.

MCE has identified workplace EV charging as an opportunity to shift the demand of the 60,200 (and growing) EV drivers in its service area to hours of the day when energy is frequently cheaper and cleaner. MCE Solar Charge, a public EV charging station that opened in 2019 at MCE's San Rafael office, demonstrates that vision to MCE's staff and customers. In 2021, MCE launched MCE Sync, a residential smart charging pilot with the goal of reducing the peak load impacts of home charging while saving customers money and reducing GHG impacts.

MCE Sync uses an app to manage home vehicle charging. During a 6-month pilot with 232 enrolled participants, the pilot shifted 93% of EV electricity usage away from the 4–9 p.m. peak, reduced carbon intensity by 55% on average, and saved customers on an EV rate around \$12/month before event-based incentives. The expanded program has a goal of 2,500 enrolled customers by May 2023.

Since 2018, MCE has supported or funded 1,570 Level 2 EV charging ports for workplaces or multifamily properties. More than 930 ports have been installed — equivalent to 36% of all public Level 2 charging ports in the four counties that MCE serves — and more than 645 ports under planning and in construction. MCE is coordinating with PG&E on its EV Charge Network program and providing a supplemental rebate to customers who participate in that program. More than 71% of the MCE stations already deployed are enrolled in MCE's Deep Green service.

In addition to incentives for EV charging stations, MCE provides free technical assistance and helps coordinate with other funding sources for commercial and multifamily customers interested in EV charging infrastructure. A CEC grant won by Contra Costa Transportation Authority and MCE will increase EV engagement, access to electric transportation, and deployment of charging infrastructure, especially at multifamily properties, across marginalized communities in the county from summer 2021 to spring 2024.

MCE also partnered with Bay Area Air Quality Management District and GRID Alternatives to win grants from the CEC and Marin Community Foundation. These grants are anticipated to start in the second half of 2022. Implementation will focus on deepening relationships with local housing authorities, affordable housing administrators, owners, and property managers to increase awareness and adoption of tenant-based EV charging stations. The implementation consists of installing EV charging and providing concierge education on how to qualify for income-based EV incentives, including MCE's own EV rebate.

Lastly, MCE built upon its rebate program for income-qualified customers interested in purchasing a new EV with the goal of increasing understanding of and access to EVs beyond the typical early adopters. This program has helped over 261 customers purchase or lease a new EV and will expand in fiscal year 2023/2024 to include used EVs as well.

x. Building electrification, including any investments above and beyond what is included in Integrated Energy Policy Report (IEPR)

MCE is committed to electrifying its service area and is currently offering several programs that it expects will impact building electrification efforts including its: LIFT Pilot Program, Multifamily Energy Savings ("MFES") Program, Home energy Savings ("HES") Program, and Heat Pump Water Heater ("HPWH") Contractor Incentive Program. An overview of MCE's planned investment in these programs is provided below.

Multifamily Energy Saving Program

MCE's MFES provides residential energy efficiency⁵⁰ and electrification⁵¹ improvements to affordable multifamily properties in the MCE service area. The intent of the program is to support vulnerable communities, particularly those who have been traditionally underserved. MFES seeks to substantially fund energy efficiency and electrification measures for deed-restricted properties. It will also continue to co-leverage as many funding opportunities to provide comprehensive, whole building upgrades.

MFES was designed to co-leverage with MCE's LIFT pilot program, authorized in D.16-11-022, by providing funding to affordable properties where not all units qualify for LIFT incentives. LIFT provides comprehensive services and supports fuel switching from natural gas to electric heat pumps for cleaner and safer energy use. Income-qualified multifamily properties can layer

⁵⁰ Refrigerators, package terminal heat pumps, LED light fixtures, smart thermostats, low flows showerhead and aerators, and LED bulbs, T24 compliant windows, crawlspace, wall, and roof insulation.

⁵¹ Domestic hot water heat pump, space heating and cooling and electrical upgrades.

incentives from LIFT on MFES program rebates. With this model, MFES supports property-wide upgrades for all tenants who live in affordable housing.

MFES services include no-cost property assessments, project scope development, and program assistance throughout the project lifetime. The program also offers owner rebates for energy efficiency and electrification measures as well as no-cost direct installation of certain energy efficiency measures.

The program addresses market barriers by providing: (1) customized technical assistance to; overcome challenges associated with the diversity of building types, ownership types, and billing configurations, and to provide assistance with analyzing potential upgrade measures; (2) guidance through the initial assessment of multiple measure upgrade opportunities throughout the property; (3) a range of participation options to best meet the current needs and abilities of properties; and (4) a bridge for the funding gap between multifamily units that qualify for LIFT or ESA incentives and the rest of the property to promote a comprehensive and equitable whole-building upgrade.

The current budget for the MFES program is \$1,017,476 for 2022 and \$971,459 for 2023. The current timeline for the program is 2022-2024, with project renewal expected every two years.

LIFT Pilot Program

MCE launched the LIFT pilot in 2017, providing additional incentives for property owners and tenants in multifamily buildings (5+ units) beyond what is available through the MFES program. LIFT provides \$1,200 per unit for energy efficiency upgrades⁵² and additional incentives for fuel substitution and fuel switching away from natural gas and propane combustion appliances to high efficiency electric heat pumps⁵³ (HVAC and water heating). This transition will support cleaner and more efficient energy use while resolving health and safety concerns.

MCE's LIFT program aims to support income-eligible multifamily renters with improving their household efficiency, reducing their energy costs, and increasing home safety and comfort, while simultaneously maximizing benefits to owners. The program is part of a larger goal of California's climate initiatives to support disadvantaged customers and increase statewide electrification and efficiency efforts. The literature review outlines the current regulatory

⁵² Refrigerators, package terminal heat pumps, LED light fixtures, smart thermostats, low flows showerhead and aerators, and LED bulbs, T24 compliant windows, crawlspace, wall, and roof insulation.

⁵³ Domestic hot water heat pump, space heating and cooling and electrical upgrades.

context within California, discusses DAC definitions and metrics, electrification, health and safety, costs, and barriers to emerging technology adoption.

The LIFT pilot was originally approved by the CPUC to run under the Energy Savings Assistance ("ESA") program, followed by a series of extensions granted to keep this running as a pilot through 2023. The LIFT Program distributed over \$1 million in incentives to 680 qualifying households between 2018 and 2021 and successfully reached underserved customers with 95% of participants residing outside of a DAC. Participants collectively saved over 7,800 kilowatthours annually and, individually, an average of \$192 per year on their electricity bill.

MCE expects to serve more than 450 additional households in the LIFT program through 2023.

MCE's MFES and LIFT programs have different funding sources (CPUC – Energy Efficiency and CPUC – Energy Savings Assistance, respectively), which makes it possible for MF properties to leverage incentives from both programs. The two programs share the same implementor, providing a single point of contact ("SPOC") and stack incentives for low-income multifamily customers. The rebates, when combined with MCE's Multifamily Energy Savings program, cover up to 80% of total project costs. The program currently has a timeline of October 2017 – December 2023 with a budget of \$6.75 million.

Home Energy Savings ("HES") Program

MCE's Single-Family Direct Install program, or Home Energy Savings Program ("HES"), provides no-cost energy efficiency measures to eligible homeowners and tenants in single-family homes (up to 4 attached units) and dwellings in MCE's service area. This program targets moderate-income customers whose household income falls between 200% and 400% of the Federal Poverty Guidelines ("FPG"). The target group's income exceeds the limit to receive services through programs like PG&E's Energy Savings Assistance ("ESA") program and MCE's LIFT Program, yet who are still too income constrained (lower middle-income) to participate in market rate programs. MCE will refer customers who fall outside of the moderate-income threshold to available low-income and market rate programs. MCE's goal is to fill the service gap and introduce this market sector to the concepts of energy efficiency, while providing energy upgrades and emerging technologies that reduce household energy consumption. Energy efficiency measures offered under this program include: energy and water savings kits, energy advisor provided home assessments and envelope, heating, ventilation and cooling (HVAC) and electrification home upgrade measures.

The current budget for the HES program is \$2,366,392 for 2022 and \$2,384,874 for 2023. The current timeline for the program is 2022-2024, with project renewal every two years.

Heat Pump Water Heater ("HPWH") Contractor Incentive Program

BayREN has partnered with MCE, East Bay Community Energy, Silicon Valley Power, City of Santa Clara, and CleanPower SF to offer a standardized midstream electrification program serving multiple Bay Area counties. The program seeks to develop the electrification market by providing Bay Area residential contractors incentives for the installation of HPWHs.

The program offers a \$1,000 incentive — paid directly to licensed contractors who replace homeowners' natural gas or propane residential water heaters with high efficiency heat pump water heaters. Contractors enrolled in the BayREN Home+ program may participate in both programs and rebates are stackable. This program is self-funded by MCE and has a budget of \$300,000 to install 250 HPWHs in MCE's service area.

The HPWH Contractor Incentive Program has also created a resource of all electrification programs serving the Bay Area and has developed HPWH resources⁵⁴ to help contractors and homeowners understand the benefits of this technology. MCE has contributed to a memo sharing learnings from the first year of the program, including contractor barriers to participation.⁵⁵

xi. Other

MCE has no additional information in response to this sub-section xi.

b. Disadvantaged Communities

In total, MCE serves 54,897 customer accounts located within DACs. This represents approximately 9.5% of MCE's total customer accounts (approximately 580,000).

MCE is dedicated to reducing pollution impacts and encouraging the development, health, and prosperity of DAC within and outside our service area. In addition to the measures and programs described above, MCE's commitment is reflected in the practices, programs, and policies described below.

Green Access and Community Solar Connection Programs

As described in Section d.ii., above, MCE is collaborating with the CPUC, IOUs, and other CCAs to develop community solar programs for customers in DACs. These programs will be supported

⁵⁴ https://www.bayren.org/contractors/heat-pump-water-heater-hpwh-incentive-participating-contractors.

⁵⁵ https://www.bayren.org/sites/default/files/2022-02/hpwh learnings may 2021 bayren 1.pdf

by the development of an additional 5.92 MW of new, local, clean energy capacity.

Sustainable Workforce and Diversity Policy

As described in Section d.ii., above, in 2017, MCE's Board approved a Sustainable Workforce and Diversity Policy⁵⁶ to facilitate and encourage diversity and a sustainable workforce.

More recently, in 2022 MCE adopted Sustainable Workforce Guidelines⁵⁷ to create a more detailed plan for implementing its Sustainable Workforce and Diversity Policy.

These efforts have resulted in significant local developments. To date, MCE has helped build almost 48 MW of new renewable projects in our service area. All local projects over 1 MW were built with union labor. Additionally, in 2021 MCE launched two new community solar programs, Community Solar Connection and Green Access. These programs offer qualifying customers living in a CalEnviroScreen-designated DAC access to 100% renewable energy and a 20% discount on their electricity bills for up to 20 years. Both programs will be supported by the development of additional new clean energy resources.

In developing its Compliance IRP, MCE carefully considered the impact of its resource procurement on DACs. MCE's PCP minimizes the use of fossil-based resources and unspecified system power, reducing reliance on natural gas generators that have an impact on DACs.

c. Commission Direction of Actions

MCE is not seeking any specific direction of actions from the Commission at this time. However, MCE notes that it is aware of the Commission's recent *Administrative Law Judge's Ruling Seeking Comments on Staff Paper on Procurement Program and Potential Near-Term Actions to Encourage Additional Procurement* ("ALJ Ruling"). MCE looks forward to exploring the options for a programmatic approach to procurement to meet the goals of the IRP process as outlined in the *Staff Paper on Programmatic Approaches to Electricity Procurement* included with the ALJ Ruling. Whichever programmatic approach the Commission ultimately adopts, it is critical for the Commission to ensure that any new program equitably reflects an LSE's full contribution to

⁵⁶ See MCE November 16, 2017, Board of Directors Meeting Packet, Agenda Item No. 7 Attachment A https://www.mcecleanenergy.org/wp-content/uploads/2020/05/MCE-Board-Meeting-Packet-November 2017.pdf

⁵⁷ See https://www.mcecleanenergy.org/wp-content/uploads/2022/05/MCE-Sustainable-Workforce-Guidelines 05122022.pdf

⁵⁸ Administrative Law Judge's Ruling Seeking Comments on Staff Paper on Procurement Program and Potential Near-Term Actions to Encourage Additional Procurement, issued September 8, 2022.

system reliability and achievement of California's environmental goals and allows for flexibility to accommodate continuously evolving grid needs.

V. Lessons Learned

MCE shares the Commission's commitment to robust and comprehensive integrated resource planning. MCE also understands the procedural and substantive complexity that defines IRP development at the state agency level and that continues through to individual LSEs as they respond to and integrate statutory and regulatory requirements into their resource planning efforts. However, in addition to the statutory requirements articulated in 454.52(a)(1)(A) -(I), MCE's resource planning process must also give deference to its Board of Directors, which is granted statutory authority to govern MCE's procurement and approve MCE's IRP under 454.52(b)(3) and 366.2(a)(5). To meet all of the aforementioned statutory objectives and requirements, it is critical for MCE and other similarly situated LSEs to expect and receive timely and clear guidance from the Commission and adequate time to incorporate this guidance into its planning process. Administrative Law Judge Fitch alluded to this in the July 15, 2022 Ruling in which Energy Division Staff was directed to provide "final versions of the CSP Calculators and RDT . . ." within a reasonable period of time following July 1, 2022.⁵⁹ Despite this clear guidance, updated RDTs were provided to LSEs on Friday, September 30, 2022.60 MCE appreciates these updates and the diligent work being done by Energy Division Staff, but revised templates and revised guidance this late in the process, no matter how insignificant or helpful, are disruptive to and dismissive of LSEs' internal processes and timelines, particularly in the case of CCAs where other law governs procedure and timelines that must be followed when requesting their Boards take action. MCE urges the Commission to take steps in the next IRP cycle to adhere firmly to its timelines and the direction in its own rulings. Diligence on this front will aid all stakeholders in meeting statutory requirements and comprehensively and thoroughly addressing the state's resource planning efforts.

⁵⁹ Load Forecast Ruling issued June 15, 2022, at 14.

⁶⁰ Email from Ali Eshraghi to Commission-jurisdictional LSEs, *Aggregated CAM Resources for LSEs* [sic] *Plan Development*, sent September 30, 2022; LSEs were initially advised of this update on Friday, September 23, 2022, via an email from James McGarry to Commission-jurisdictional LSEs, *Notice of IRP Template Update and Q&A document* [sic], sent September 23, 2022.

Glossary of Terms

Alternative Portfolio: LSEs are permitted to submit "Alternative Portfolios" developed from scenarios using different assumptions from those used in the Preferred System Plan with updates. Any deviations from the "Conforming Portfolio" must be explained and justified.

Approve (Plan): the CPUC's obligation to approve an LSE's integrated resource plan derives from Public Utilities Code Section 454.52(b)(2) and the procurement planning process described in Public Utilities Code Section 454.5, in addition to the CPUC obligation to ensure safe and reliable service at just and reasonable rates under Public Utilities Code Section 451.

Balancing Authority Area (CAISO): the collection of generation, transmission, and loads within the metered boundaries of the Balancing Authority. The Balancing Authority maintains load-resource balance within this area.

Baseline resources: Those resources assumed to be fixed as a capacity expansion model input, as opposed to Candidate resources, which are selected by the model and are incremental to the Baseline. Baseline resources are existing (already online) or owned or contracted to come online within the planning horizon. Existing resources with announced retirements are excluded from the Baseline for the applicable years. Being "contracted" refers to a resource holding signed contract/s with an LSE/s for much of its energy and capacity, as applicable, for a significant portion of its useful life. The contracts refer to those approved by the CPUC and/or the LSE's governing board, as applicable. These criteria indicate the resource is relatively certain to come online. Baseline resources that are not online at the time of modeling may have a failure rate applied to their nameplate capacity to allow for the risk of them failing to come online.

Candidate resource: those resources, such as renewables, energy storage, natural gas generation, and demand response, available for selection in IRP capacity expansion modeling, incremental to the Baseline resources.

Capacity Expansion Model: a capacity expansion model is a computer model that simulates generation and transmission investment to meet forecast electric load over many years, usually with the objective of minimizing the total cost of owning and operating the electrical system. Capacity expansion models can also be configured to only allow solutions that meet specific requirements, such as providing a minimum amount of capacity to ensure the reliability of the system or maintaining greenhouse gas emissions below an established level.

Certify (a Community Choice Aggregator Plan): Public Utilities Code 454.52(b)(3) requires the CPUC to certify the integrated resource plans of CCAs. "Certify" requires a formal act of the Commission to determine that the CCA's Plan complies with the requirements of the statute and the process established via Public Utilities Code 454.51(a). In addition, the Commission must review the CCA Plans to determine

any potential impacts on public utility bundled customers under Public Utilities Code Sections 451 and 454, among others.

Clean System Power (CSP) methodology: the methodology used to estimate GHG, and criteria pollutant emissions associated with an LSE's Portfolio based on how the LSE will expect to rely on system power on an hourly basis.

Community Choice Aggregator: a governmental entity formed by a city or county to procure electricity for its residents, businesses, and municipal facilities.

Conforming Portfolio: the LSE portfolio that conforms to IRP Planning Standards, the 2030 LSE-specific GHG Emissions Benchmark, use of the LSE's assigned load forecast, use of inputs and assumptions matching those used in developing the Reference System Portfolio, as well as other IRP requirements including the filing of a complete Narrative Template, a Resource Data Template and Clean System Power Calculator.

Effective Load Carrying Capacity: a percentage that expresses how well a resource is able avoid loss-of-load events (considering availability and use limitations). The percentage is relative to a reference resource, for example a resource that is always available with no use limitations. It is calculated via probabilistic reliability modeling and yields a single percentage value for a given resource or grouping of resources.

Effective Megawatts (MW): perfect capacity equivalent MW, such as the MW calculated by applying an ELCC % multiplier to nameplate MW.

Electric Service Provider: an entity that offers electric service to a retail or end-use customer, but which does not fall within the definition of an electrical corporation under Public Utilities Code Section 218.

Filing Entity: an entity required by statute to file an integrated resource plan with CPUC.

Future: a set of assumptions about future conditions, such as load or gas prices.

GHG Benchmark (or LSE-specific 2030 GHG Benchmark): the mass-based GHG emission planning targets calculated by staff for each LSE based on the methodology established by the California Air Resources Board and required for use in LSE Portfolio development in IRP.

GHG Planning Price: the systemwide marginal GHG abatement cost associated with achieving a specific electric sector 2030 GHG planning target.

Integrated Resources Planning Standards (Planning Standards): the set of CPUC IRP rules, guidelines, formulas, and metrics that LSEs must include in their LSE Plans.

Integrated Resource Planning (IRP) process: integrated resource planning process; the repeating cycle through which integrated resource plans are prepared, submitted, and reviewed by the CPUC

Long term: more than 5 years unless otherwise specified.

Load Serving Entity: an electrical corporation, electric service provider, community choice aggregator, or electric cooperative.

Load Serving Entity (LSE) Plan: an LSE's integrated resource plan; the full set of documents and information submitted by an LSE to the CPUC as part of the IRP process.

Load Serving Entity (LSE) Portfolio: a set of supply- and/or demand-side resources with certain attributes that together serve the LSE's assigned load over the IRP planning horizon.

Loss of Load Expectation (LOLE): a metric that quantifies the expected frequency of loss-of-load events per year. Loss-of-load is any instance where available generating capacity is insufficient to serve electric demand. If one or more instances of loss-of-load occurring within the same day regardless of duration are counted as one loss-of-load event, then the LOLE metric can be compared to a reference point such as the industry probabilistic reliability standard of "one expected day in 10 years," i.e., a LOLE of 0.1.

Maximum Import Capability: a California ISO metric that represents a quantity in MWs of imports determined by the CAISO to be simultaneously deliverable to the aggregate of load in the ISO's Balancing Authority (BAA) Area and thus eligible for use in the Resource Adequacy process. The California ISO assess a MIC MW value for each intertie into the ISO's BAA and allocated yearly to the LSEs. A LSE's RA import showings are limited to its share of the MIC at each intertie.

Net Qualifying Capacity (NQC): Qualifying Capacity reduced, as applicable, based on: (1) testing and verification; (2) application of performance criteria; and (3) deliverability restrictions. The Net Qualifying Capacity determination shall be made by the California ISO pursuant to the provisions of this California ISO Tariff and the applicable Business Practice Manual.

Non-modeled costs: embedded fixed costs in today's energy system (e.g., existing distribution revenue requirement, existing transmission revenue requirement, and energy efficiency program cost).

Nonstandard LSE Plan: type of integrated resource plan that an LSE may be eligible to file if it serves load outside the CAISO balancing authority area.

Optimization: an exercise undertaken in the CPUC's Integrated Resource Planning (IRP) process using a capacity expansion model to identify a least-cost portfolio of electricity resources for meeting specific policy constraints, such as GHG reduction or RPS targets, while maintaining reliability given a set of assumptions about the future. Optimization in IRP considers resources assumed to be online over the planning horizon (baseline resources), some of which the model may choose not to retain, and additional resources (candidate resources) that the model is able to select to meet future grid needs.

Planned resource: any resource included in an LSE portfolio, whether already online or not, that is yet to be procured. Relating this to capacity expansion modeling terms, planned resources can be baseline

resources (needing contract renewal, or currently owned/contracted by another LSE), candidate resources, or possibly resources that were not considered by the modeling, e.g., due to the passage of time between the modeling taking place and LSEs developing their plans. Planned resources can be specific (e.g., with a CAISO ID) or generic, with only the type, size and some geographic information identified.

Qualifying capacity: the maximum amount of Resource Adequacy Benefits a generating facility could provide before an assessment of its net qualifying capacity.

Preferred Conforming Portfolio: the conforming portfolio preferred by an LSE as the most suitable to its own needs; submitted to CPUC for review as one element of the LSE's overall IRP plan.

Preferred System Plan: The Commission's integrated resource plan composed of both the aggregation of LSE portfolios (i.e., Preferred System Portfolio) and the set of actions necessary to implement that portfolio (i.e., Preferred System Action Plan).

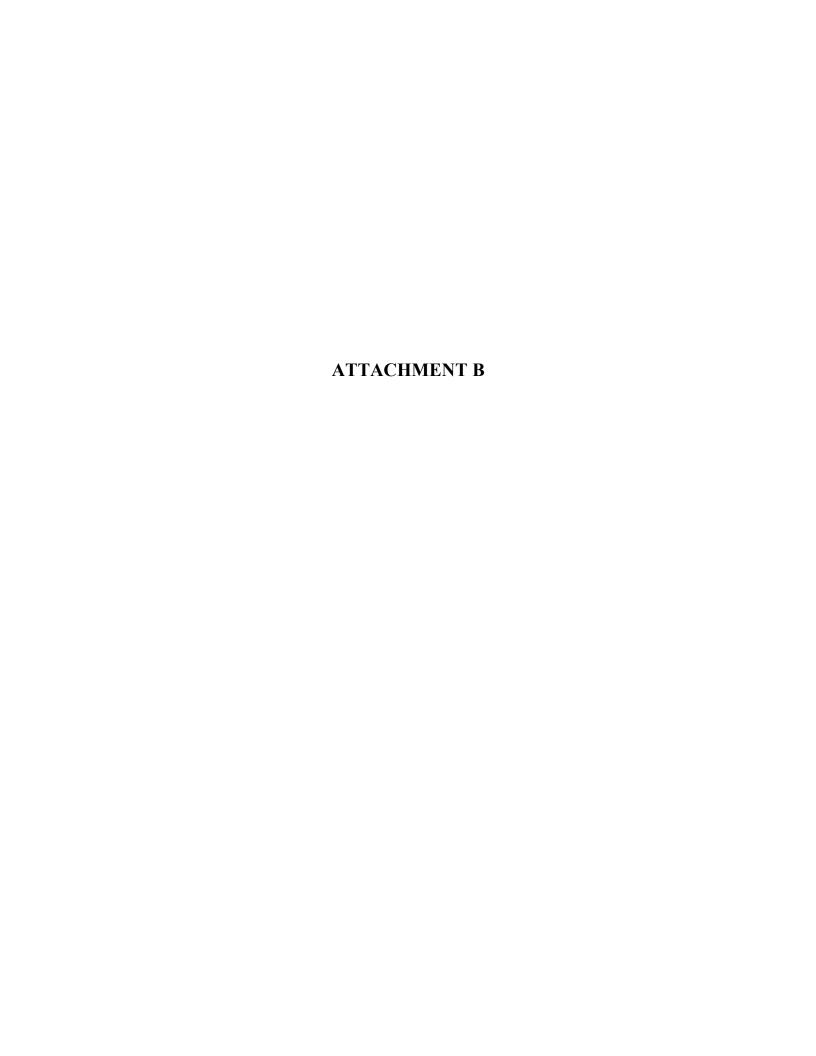
Preferred System Portfolio: the combined portfolios of individual LSEs within the CAISO, aggregated, reviewed, and possibly modified by Commission staff as a proposal to the Commission, and adopted by the Commission as most responsive to statutory requirements per Pub. Util. Code 454.51; part of the Preferred System Plan.

Short term: 1 to 3 years (unless otherwise specified).

Staff: CPUC Energy Division staff (unless otherwise specified).

Standard LSE Plan: type of integrated resource plan that an LSE is required to file if it serves load within the CAISO balancing authority area (unless the LSE demonstrates exemption from the IRP process).

Transmission Planning Process (TPP): annual process conducted by the California Independent System Operator (CAISO) to identify potential transmission system limitations and areas that need reinforcements over a 10-year horizon.



ise unique contract id				interconnection substat on								
Ise_unique_contract_id Ost om_MCE	resource WHEATL 6 LNDFIL	alternative_resource_name contract_status Online	project_interconnection_position	interconnection_substat on NA	marginal_addition	marginal_add tion_to	total_nameplate_capacity	contracted_nameplate_capacity	sep_contracted_mw_nqc	contract_gwh_annual	s_hybrid_paired NotHyb d	can_charge_from_grid
Hay MCE Geyse s MCE	PEABDY 2 LNDF L GEYS13 7 UNIT13	Online Online		NA NA	NA NA	NA NA		2	2	11 88	Nothyb d Nothyb d	
L ncoln MCE	PLSNTG 7 LNCLND VOYAGR 2 VOYWD3	Online Online		NA NA	NA NA	NA NA		5	4	27 138	NotHyb d NotHyb d	
Voyage II MCE WM MCE Antelope 2 MCE	NOVATO 6 LNDFL BGSKYN 2 AS2SR1	Onl ne Onl ne		NA NA	NA NA	NA NA		4 105	3	30 289	NotHyb d NotHyb d	
Cooley I MCE	EXISTING GENER C SOLAR FIXED	Online		NA.	NA.	NA NA	1	105	0	289	NotHyb d	
Cost Plus_MCE Dese t Ha vest MCE	EXISTING GENER C SOLAR FIXED DSRTHV 2 DH1SR1	Online Online		NA NA	NA NA	NA NA	1	1 80	9	1 252	NotHyb d NotHyb d	
F eethy 1 MCE F eethy 2 MCE G eat Valley MCE	EXISTING GENER C SOLAR FIXED EXISTING GENER C SOLAR FIXED	Online Online		NA NA	NA NA	NA NA	1	1 1	0	2	NotHyb d NotHyb d NotHyb d	
G eat Valley MCE L ttle Bea 1 MCE	TRNQL8 2 ROJSR1 LTBERA 1 LB1SR1	Online Online		NA NA NA	NA NA NA	NA NA		100 40	11 4	285 105	NotHyb d NotHyb d	
				NA NA NA	NA NA	NA NA NA		20 50	2	52 132	NotHvb d	
L ttle Bea 4 MCE L ttle Bea 5 MCE SRA po t MCE	LTBEAR 1 LB4SR4 LTBEAR 1 LB4SR5 EXISTING GENER C SOLAR FIXED	Online Online Online Online		NA NA	NA NA NA	NA NA	1	50 1	6	132	NotHyb d NotHyb d NotHyb d	
Mustang MCE Soscal Fe y Sola C_MCE	MSTANG 2 SOLAR4 _EXISTING_GENER C_SOLAR_FIXED	Online Online		NA NA	NA NA	NA NA	1	30 1	3	82 3	NotHyb d NotHyb d	
Soscal Fe y Sola D MCE Ame can Canyon Sola A MCE	EXISTING GENER C SOLAR FIXED EXISTING GENER C SOLAR FIXED	Online Online		NA NA	NA.	NA NA	1	1	0	3	NotHyb d NotHyb d	
Ame can Canyon Sola B MCE Ame can Canyon Sola C MCE	EXISTING GENER C SOLAR FIXED EXISTING GENER C SOLAR FIXED	Online Online		NA NA	NA NA	NA NA	1	1	0	3	NotHyb d NotHyb d	
S Ive a Ranch A MCE	EXISTING GENER C SOLAR FIXED	Online		NA.	NA.	NA NA	1	1	0	3	NotHyb d	
S Ive a Ranch B_MCE SR A po t 2 MCE	EXISTING GENER C SOLAR FIXED EXISTING GENER C SOLAR FIXED	Online Online		NA NA	NA NA NA	NA NA	1	1	0	2	NotHyb d NotHyb d	
EO P oducts MCE Oakley RV& Boat Sto age MCE DRES Qua y 2.4 MCE	EXISTING GENER C SOLAR FIXED EXISTING GENER C SOLAR FIXED EXISTING GENER C SOLAR FIXED	Online Online		NA NA	NA NA	NA NA	1	1	0	2	NotHyb d NotHyb d NotHyb d	
DRES Qua y 2.4 MCE Co co an_MCE	EXISTING GENER C SOLAR FIXED CORCAN_1_SOLAR2	Online Online		NA NA	NA NA	NA NA	0	0 11	1	27	NotHyb d NotHyb d	
Goose Lake MCE	GOOSLK 1 SOLAR1			NA NA	NA NA NA	NA NA	1	12	1 0	30 2	NotHyb d NotHyb d NotHyb d	
Buck MCE MCE Sola 1_8.5_MCE MCE Sola 1_2.0 MCE	R CHMN_1_CHVSR2 R CHMN 1 SOLAR	Online Online Online	-	NA NA	NA.	NA NA		9 2	1 0	17 4	NotHyb d	
Ke n Tule PCC1 1 LT MCE S Ive a Ranch C MCE	KRNCNY 6 UNIT EXISTING GENER C SOLAR FIXED			NA NA	NA NA	NA NA	1	11 1	5	37 3	NotHyb d NotHyb d	
Lake He man PCC1 1 LT MCE By on Sola PCC1 1 LT MCE	EXISTING GENER C SOLAR FIXED EXISTING GENER C SOLAR FIXED	Online Online Online		NA NA	NA NA	NA NA	5	5	0	13	NotHyb d NotHyb d	
St auss PCC1 1 LT MCE By on Sola PCC1 2 LT MCE	STRAUSSWIND EXISTING GENER C SOLAR FIXED	Development Online	WDT-1320	NA NA	NA NA	NA NA	1	,	0	3	NotHyb d	
		Online		NA NA	NA.	NA NA	1	1	0	2	NotHyb d NotHyb d	
Fallon PCC1 1 LT MCE RPCA PCC1 1 LT MCE	EXISTING GENER C SOLAR FIXED NEW GENERIC SOLAR FIXED	Online Development		NA B entwood 2105	NA NA	NA NA	5	5	0	2 13	NotHyb d NotHyb d	
Napa_PCC1_1_LT_MCE CMSA_PCC1_2_LT_MCE EBCE_PCC1_Sale_1_MCE	EXISTING_GENER C_SOLAR_FIXED EX STING_GENER C_BIOMASS/WOOD GOOSLK 1 SOLAR1	Development Online Online Online		NA NA	NA NA	NA NA	1	1 1	0	3	NotHyb d NotHyb d NotHyb d	
	CORCAN_1_SOLAR2	Online		NA NA	NA NA	NA NA			0	8 4	NotHyb d	
PCEA PCC1 Sale 1 MCE Golden Felds PCC1 LT MCE	GOOSLK 1 SOLAR1 NEW GENERIC SOLAR 1AXIS	Online Development	0.1212	NA NA	NA NA	NA NA	100	100	0 103	10 272	NotHyb d NewSola NewSto age	NO
Ranch Se eno_PCC1_LT_MCE CES Elect on Fa m PCC1_DAC_1_LT_MCE	NEW GENERIC SOLAR 1AXIS NEW GENERIC SOLAR 1AXIS	Development Development	WDT-2597	NA NA	NA NA	NA NA	2	2	1 0	5 1	NewSola NewSto age NotHvb_d	NO
CES Elect on Fa m PCC1 DAC 2 LT MCE Daggett PCC1 1 LT MCF	NEW GENERIC SOLAR 1AXIS NEW GENERIC SOLAR 1AXIS	Development Development	0-1314	NΔ	NA NA	NA NA	4	4	0	12 317	NotHyb d NewSola NewSto age	NO.
Ma sh Land ng LLC RA 1 BAF MCE WELLHEAD RA 3 POF MCE	COCOPP 2 CTG4 AGRICO 7 UNIT	Online Online	4,440	NA NA	NA NA	NA NA		81	77 48	0	NotHyb d NotHyb d	
CALPINE RA 35 S F MCE	BOGUE 1 UNITA1	Online		NA NA	NA NA	NA NA		32	32	0	NotHyb d	
CALPINE RA 34 NS MCE CALPINE_RA_44_NS_MCE	SUTTER 2 CISO _EXISTING_GENERIC_COMBINED_CYCLE	Online Online		NA.	NA.	NA NA		25	70 25	0	NotHyb d NotHyb d	
CALPINE RA 67 NS M/CE CALPINE RA 68 NSF M/CE	EXISTING GENERIC COMBINED CYCLE EXISTING GENERIC COMBINED CYCLE	Online Online		NA NA	NA NA	NA NA		15 15	15 15	0	NotHyb d NotHyb d	
ENERSPONSE_RA_2_SS_MCE Hecate Sto age RA 2024 EBMUD B1_MCE	EXISTING GENER C DR NEW GENERIC BATTERY STORAGE	Online Development Online		NA NA	NA.	NA NA	20 185	20 185	20 185	0	NotHyb d NotHyb d NotHyb d	
EBMUD B1 MCE EBMUD B1 MCE	CAMCHE 1 PL1X3 PARDEB 6 UNITS	Online Online		NA NA	NA NA	NA NA	10 30		0	46 140	NotHyb d NotHyb d	
SENA CF 13 MCE MSCG CF 5 MCF	EX STING GENERIC INSTATE LARGE HYDRO	O Online		NA NA	NA NA	NA NA			0	200 400	NotHyb d NotHyb d	
MSCG_CF_5_MCE B oold eld CF 4 MCE TENASKA CF 2 MCE	EX STING GENERIC NW HYDRO EX STING GENERIC NW HYDRO EXCHEC 7 UNIT 1	Online Online Online		NA NA NA	NA NA NA	NA NA	45		0	200 120	NotHyb d NotHyb d NotHyb d	
POWEREX_CF_3_MCE Powe ex CF 4 MCE	EX STING GENERIC NW HYDRO EX STING GENERIC NW HYDRO	Online Online		NA NA	NA NA	NA NA			0	250 206	NotHyb d NotHyb d	
Powe ex CF 5 MCE WAPA BR MCE	EX STING GENERIC NW HYDRO EX STING GENERIC INSTATE LARGE HYDRO	Onl ne		NA NA	NA NA	NA NA			0	100 25	NotHyb d NotHyb d	
WAPA BR 2 MCE GHGF ee A locat on	EX STING GENERIC INSTATE LARGE HYDRO EX STING GENERIC INSTATE LARGE HYDRO			NA NA	NA.	NA NA			0	25	Nothyb d Nothyb d	
DR A locat on	EXISTING GENER C DR	Online							19	0	NotHyb d	
OS22 New W nd 2026	NEW GENER C WIND	PlannedNew	w nd ca so planned				100	100	22	263	NotHyb d	
Gene cLTW nd NM 2030 Gene cLTW nd_2033	CREZ GENER C NEW MEX CO WIND	PlannedNew	wind import planned wind_caiso_planned	-			70 95	70 95	20 41	250 400	NotHyb d	
Gene c LT Genthe mai 2030	EZ_GENER C_MORRO_BAY_OFFSHORE_WII NEW GENERIC GEOTHERMAL NEW GENERIC BATTERY STORAGE	PlannedNew PlannedNew	geothe mal mpo t planned batte y ca so planned				75 40	75 40	70 40	580 0	NotHyb d NotHyb d NotHyb d	
MTR LDS 2026 VAMO_ST_B omass VAMO ST Sola PV	NEW GENERIC BATTERY STORAGE EX STING GENER C BIOMASS/WOOD EXISTING GENER C SOLAR FIXED	PlannedNew Online Online							0	33 206	NotHyb d NotHyb d	
VAMO ST W nd VAMO ST Small Hyd o	EXISTING GENERIC WIND EX STING GENERIC INSTATE SMALL HYDRI	Online Online							0	165 14	Nothyb d Nothyb d	
VAMO ST Geothe mal Gene c STB omass	EX STING GENERIC GEOTHERMAL EX STING GENER C BIOMASS/WOOD EXISTING GENER C SOLAR FIXED	On ne On ne PlannedEx st ng PlannedEx st ng							0	70 20	NotHyb d NotHyb d	
	EXISTING GENER C SOLAR FIXED EXISTING GENERIC WIND	PlannedEx st ng PlannedEx st ng							0	20 99 378	Nothyb d	
Gene cSTW nd Gene cSTSmall Hyd o	EXISTING GENERIC WIND EX STING_GENERIC_INSTATE_SMALL_HYDRI	PlannedEx st ng PlannedEx st ng PlannedEx st ng PlannedEx st ng							0	40	NotHyb d NotHyb d	
Gene cSTLa geHyd o/ACS	EX STING GENERIC GEOTHERMAL EX STING GENERIC NW HYDRO								0	125 144	NotHyb d NotHyb d	
Gene c LDS 2030 Gene c 4 Hou Sto age 2028	NEW GENERIC BATTERY STORAGE NEW GENERIC BATTERY STORAGE	PlannedNew PlannedNew	batte y ca so planned batte y ca so planned				50 200	50 200	50 200	0	NotHyb d NotHyb d	
Gene c 4 Hou Sto age 2034 Gene c CCGT RA_2023 Gene c CCGT RA 2024	NEW GENERIC BATTERY STORAGE EXISTING GENERIC COMBINED CYCLE EXISTING GENERIC COMBINED CYCLE	PlannedNew PlannedEx st ng PlannedEx st ng	batte y ca so planned				200 750 686	200 750 686	200 750 686	0	NotHyb d NotHyb d NotHyb d	
Gene c CCGT RA 2024 Gene c CCGT RA 2025	EXISTING GENERIC COMBINED CYCLE	PlannedEx st ng PlannedEx st ng					686 639	639	686 639	0	NotHyb d NotHyb d	
Gene c CCGT RA 2025 Gene c CCGT RA 2026 Gene c CCGT RA 2027	EXISTING GENERIC COMBINED CYCLE EXISTING GENERIC COMBINED CYCLE	PlannedEx st ng PlannedEx st ng PlannedEx st ng					731 672	731 672	731 672	0	NotHyb d NotHyb d NotHyb d	
Gene c CCGTRA_2028 Gene c CCGTRA 2029	EXISTING GENERIC COMBINED CYCLE EXISTING GENERIC COMBINED CYCLE						498 535	498 535	498 535	0	NotHyb d NotHyb d	
	EXISTING GENERIC COMBINED CYCLE	PlannedFy st ne					425	425	425	0	NotHvb d	
Gene c CCGTRA_2031 Gene c CCGTRA 2032	EXISTING GENERIC COMBINED CYCLE EXISTING GENERIC COMBINED CYCLE	PlannedEx st ng PlannedEx st ng					518 542	518 542	518 542	0	NotHyb d NotHyb d	
Gene c CCGT RA 2033 Gene c CCGT RA_2034	EXISTING GENERIC COMBINED CYCLE _EXISTING_GENERIC_COMBINED_CYCLE	PlannedEx st ng PlannedEx st ng					530 541	530 541	530 541	0	NotHyb d NotHyb d	
Gene c CCGT RA 2035 RESI RA 2 NS MCE	EXISTING GENERIC COMBINED CYCLE NEW GENERIC DR	Rev ew	d caso planned				549 15	549 15	549 15	0	NotHyb d NotHyb d	
PGE Online ccgt 1 PGE Online ccgt 2	EXISTING GENERIC COMBINED CYCLE EXISTING GENERIC COMBINED CYCLE	Online	<u> </u>		L			44 39	44 39	0	NotHyb d NotHyb d	
PGE Online_ccgt_3	EXISTING GENERIC COMBINED CYCLE EXISTING GENERIC COGEN	Onl ne	-	-			-	61 4	61 4	0	NotHyb d NotHyb d	
PGE Online chp PGE Online chp 1 PGE Online chp 2	EXISTING GENERIC COGEN EXISTING GENERIC COGEN EXISTING GENERIC COGEN	Online Online Online						3	0	5 7	NotHyb d NotHyb d	
PGE Online batte y PGE Development batte y 1	EX STING GENERIC COGEN EX STING GENER C BATTERY STORAGE NEW GENERIC BATTERY STORAGE	Online Online Development						23	23	0	NotHyb d NotHyb d	
rot peremperature partery 1	GENERIC DALIENT STURAGE	Davaropment	1	1	1	1			,	,		

Ise_unique_contract_id	total_generator_mw	contracted_generator_mw	total_storage_mw	contracted_storage_mw	solar_technology_sub_type	storage_technology_sub_type	total_storage_depth_mwh	contracted_storage_depth_mwh	wability_cod_reasonableness	viability_f nancing_sitecontrol resource_mix	d1911016_vamo_ghgfree buy_sell_own
Ost om_MCE											
Hay MCE Geyse s MCE L ncoln MCE											
L ncoln MCE											
Voyage II MCE WM MCE Antelope 2 MCE											
Cooley I MCE					1Ax s F xxd F xxd 1Ax s						
Cooley I MCE Cost Plus MCE Dese t Ha vest MCE F eathy I MCE					F xed 1Ax s						
F eethy 1 MCE F eethy 2 MCE					F xed F xed 1Ax s 1Ax s						
F eethy 2 MCE G eat Valley MCE L ttle Bea 1 MCE					1Ax s						
L ttle Bea 4 MCE L ttle Bea 5_MCE					1Ax s 1Ax s						
SRA po t MCE Mustang MCE Soscal Fe y Sola C_MCE					F xed 1Ax s F xed						
Soscal Fe y Sola C_MCE Soscal Fe y Sola D MCE											
Ame can Canyon Sola A MCE Ame can Canyon Sola B MCE					F xed F xed F xed						
Ame can Canyon Sola C MCE					Fxed						
Ame can Canyon Sola C MCE S Ive a Ranch A MCE S Ive a Ranch B MCE SR A po t 2 MCE					F xed F xed F xed						
SKA po t Z MCE EOP oducts MCE					F xed						
EO P oducts MCE Oakley RV & Boat Sto age MCE DRES Qua y 2.4 MCE					F xed F xed F xed						
Co co an_MCE			<u> </u>		F xed F xed						
Buck MCE Buck MCE MCESola 1 8.5 MCE MCESola 1 2.0 MCE Ke n Tule PCC1 1 LT MCE S Ive a Ranch C_MCE					F xed F xed						
MCE Sola 1 2.0 MCE					Fxed						
Silve a Ranch C_MCE					Fxed						
By on Sola PCC1 1 LT MCE		<u> </u>	 		F xed F xed						
St auss PCC1 1 LT MCE By on Sola PCC1 2 LT MCE Haywo th PCC1 1 LT MCE			1		F xed F xed				4 3	5	
Haywo th PCC1_1_LT_MCE Fallon PCC1_1_LT_MCF											
Fallon PCC1 1 LT MCE RPCA PCC1 1 LT MCE Napa_PCC1_1_LT_MCE					F xed F xed				4 3	4	
CMSA PCC1 2 LT MCE											Salt
CMSA PCC1 2 LT MCE EBCE PCC1 Sale 1 MCE SICE PCC1 Sale 1 MCE					F xed F xed						Sell Sell
PCEA PCC1 Sale 1 MCE Golden Fields PCC1 LT MCE Ranch Seieno PCC1 LT MCE	100	100	92 0.8	92 0.8	F xed 1Ax s F xed	L	368 3 2	368	4 3	3	Sell
Ranch Se eno_PCC1_LT_MCE CES Elect on Fa m PCC1_DAC 1 LT_MCE	2	2	0.8	0.8		L	3 2	3 2	4 3	3	
CESEIGET ON FAIR PCCL DAC 1 LT MCE CESEIGET ON FAIR PCCL DAC 2 LT MCE Daggett PCCL 1 LT MCE Ma sh Landing LLC RA 1 BAF MCE	110	110	60	60	F xed 1Ax s		240	240	4 3 4 3	3 5	
Ma sh Land ng LLC RA 1 BAF MCE											
WELLHEAD RA 3 POF MCE CALPINE RA 35 S F MCE CALPINE RA 34 NS MCE											
CALPINE RA 34 NS MCE											
CALPINE RA 44 NS MCE CALPINE RA 67 NS MCE CALPINE RA 68 NSF MCE											
ENERSPONSE_RA_2_SS_MCE Hecate Sto_age RA_2024 EBMUD B1_MCE						L	740	740	4 3	5	
EBMUD B1 MCE EBMUD B1 MCE											
SENA CE 12 MCE											
MNGG CF, SMCE B ookfeld CF 4 MCE TENAKA CF 2 MCE POWEREX, CF, 3, MCE Powe ar CF 4 MCE Power SMCE WAPA, BR, MCE											
POWEREX_CF_3_MCE											
Powe ex CF 5 MCE											
WAPA_BR_MCE WAPA_BR_2_MCE GHG F ee A locat on											
GHGF ee A locat on DR A locat on											GHG f ee PCIA Buy
Gene cLTW nd NM 2030									1 2	1	
Gene cLTW nd 2033 Gene cLTGeothe mal 2030 MTRLDS 2026									1 2 1 2	1 1	
MTR LDS 2026 VAMO_ST_B omass		<u> </u>	<u> </u>		<u> </u>	L .	320	320	1 1	1	VAMO Buy
VAMO_ST_B omass VAMO_ST_Sola_PV VAMO_ST_W nd											VAMO Buy
VAMO ST Small Hyd o VAMO ST Geothe mal Gene c STB omass											VAMO Buy VAMO Buy
Gene c ST W nd											
Gene cSTW nd Gene cSTSmall Hyd o Gene cST Geothe mall Gene cST La ge Hyd o/ACS											
Gene cSTLa ge Hyd o/ACS Gene cLDS 2030						L	400	400	1 1	1	
Gene c 4 Hou Sto age 2028 Gene c 4 Hou Sto age 2034			 			L	400 800 800	400 800 800	1 2 1 2	1 1	
Gene CLGS 198, 2028 Gene CLG 198, 2028 Gene C4 Hou Sto age 2028 Gene C4 Hou Sto age 2034 Gene CCGT RA, 2023 Gene CCGT RA, 2024 Gene CCGT RA, 2025 Gene CCGT RA, 2025 Gene CCGT RA, 2025 Gene CCGT RA, 2025 Gene CCGT RA, 2027							***	***			
Gene c CCGTRA 2025											
Gene c CCGT RA 2027											
Gono of CCGT RA 2029											
Gene c CCGTRA 2030 Gene c CCGTRA_2031											
Gene c CCGTRA 2032 Gene c CCGTRA 2033											
Gene c CCGTRA 2034											
Gene CCCGTRA 2030 Gene CCCGTRA 2031 Gene CCCGTRA 2031 Gene CCCGTRA 2031 Gene CCCGTRA 2032 Gene CCCGTRA 2034 Gene CCCGTRA 2034 Gene CCCGTRA 2035 GENE CCCGTRA 2035 GENE CCCGTRA 2035 GENE CCCGTRA 2035									4 3	5	
PGE Online ccgt 1 PGE Online ccgt 2 PGE Online ccgt 3											CAM CAM CAM
PGE_Onl ne_ccgt_3 PGE_Onl ne_chp		<u> </u>	<u> </u>		<u> </u>						CAM CAM
PGE Online chp PGE Online chp 1 PGE Online chp 2											CAM CAM CAM
PGE Online batte y PGE Development batte y 1 PGE_Development_batte y_2						L L		93 23			CAM
	-	1	+	+	1	i - i		23 0		l	CAM

lse_unique_contract_id	counterparty	generator_supplier	developer_name	capacity_area	capacity_sub_area	cpuc_approval_ref	county	COD_year	COD_month	COD_day	contract_start_date_year	contract_start_date_month	contract_start_date_day	contract_end_date_year	contract_end_date_month	contract_end_date_day
Ost om_MCE Hav MCE			NA NA	S e a PacGE			YubaCounty SolanoCounty	2013 2013	7 7	1	2013 2013	7 7	1 1	2031 2033	6	30 30
Hay MCE Geyse s MCE L ncoln MCE			NA NA	PacGE No thCoastNo thBay S e a			SolanoCounty SonomaCounty Place County	2013 1980 1985	1	1	2017 2013	1 2	1 14	2026 2033	12	31 13
Voyage II MCE WM_MCE			NA NA	SCE No thCoastNo thBay	No sub a ea		Ke nCounty Ma nCounty	2018 2017	12 9	29 14	2018 2017	12 9	29 14	2030 2037	12 9	28 13
Antelope 2 MCE Cooley I MCE			NA NA	B gC eekVentu a G eate Bay			LosAngelesCounty Ma nCounty	2019 2017	7	5	2019 2017	3	1	2038 2037	12 2	31 28
Cost Plus_MCE Dese t Ha vest MCE			NA NA	G eate Bay SCE			R ve s deCounty	2016 2020	9 12	1 17	2016 2020	9 12	1 17	2036 2040	8 12	31 16
F eethy 1 MCE F eethy 2 MCE G eat Valley MCE			NA NA	G eate Bay G eate Bay G eate F esno			Cont aCostaCount Cont aCostaCount F esnoCounty	2016 2016	10 10	6	2016 2016 2018	10 10	6	2036 2036 2033	10 10	- S
L ttle Bea 1 MCE			NA NA	G eate F esno			F esnoCounty	2018 2020	4 12	14 10	2020	4 12	14 10	2040	4 12	13 9
L ttle Bea 3 MCE L ttle Bea 4 MCE L ttle Bea 5 MCE			NA NA	G eate F esno G eate F esno G eate F esno			F esnoCounty F esnoCounty F esnoCounty	2020 2020 2020	12 12	10 10	2020 2020 2020	12 12	10 10	2040 2040 2040	12 12	9 9
			NA NA					2012	12 10	10 23	2012	12 10	10 23	2032	12 10	9 22
Mustang MCE Soscal Fe y Sola C_MCE			NA NA	G eate F esno PacGE PacGE PacGE			K ngsCounty NapaCounty	2015 2020	6 12	25 11	2015 2020	6 8	25 30	2032 2040	12 8	31 29
Soscal Fe y Sola D MCE Ame can Canyon Sola A MCE			NA NA	PacGE PacGE			NapaCounty NapaCounty	2020 2019	12 9	11 24	2020 2019	9	30 1	2040 2039	8 8	29 31
Ame can Canyon Sola B MCE Ame can Canyon Sola C MCE			NA NA	PacGE			NapaCounty	2019 2019	9	24 24	2019 2019	9	1 1	2039 2039	8 8	31 31
S Ive a Ranch A MCE S Ive a Ranch B MCE SR A po t 2 MCE			NA NA	PacGE PacGE PacGE			Ma nCounty Ma nCounty	2021 2021	3	30 30	2021 2021	3	30 30	2041 2041	3	29 29
SRA po t Z MCE EO P oducts MCE			NA NA	G eate Bay			Ma nCounty Ma nCounty Ma nCounty Ma nCounty Cont aCostaCount	2020	12	28 10	2020	12	10	2040 2038	12	9
EO P oducts MCE Oakley RV & Boat Sto age MCE DRES Qua y 2.4 MCE			NA NA NA	G eate Bay G eate Bay			Ma nCounty	2019	5	23 24	2018 2019	5	31 14	2038 2039	5	30 13
Co co an_MCE GooseLake MCE			NA NA	G eate F esno G eate F esno			K ngsCounty K ngsCounty	2015 2015	5	22	2015 2015	5	22	2040 2040	4	30
Buck MCE MCESola 1_8.5_MCE			NA NA	G eate Bay G eate Bay	No_sub_a ea No sub a ea		Ma nCounty Cont aCostaCount	2015 2017	12	22	2015 2017	12	22	2040 2037	12	30 21
MCE Sola 1 2.0 MCE Ken Tule PCC1 1 LT MCE Silve a Ranch C MCE			NA NA NA	G eate Bay PacGE PacGE	No sub a ea		Cont aCostaCount Ke nCounty NanaCounty	2017 2021 2021	6	9	2017 2021 2021	7	5	2037 2036 2041	7	21 4
S Ive a Ranch C_MCE Lake He man PCC1 1 LT MCE By on Sola PCC1 1 LT MCE			NA NA NA	PacGE PacGE PacGE			NapaCounty SolanoCounty Cont aCostaCount	2021 2021	9	30 14	2021 2021	9	30 30	2041 2041 2042	9	29 29 20
St auss PCC1 1 LT MCE			BayWa RE	PacGE PacGE PacGE	No sub a ea		SantaBa ba aCounty	2022	12	10	2022	12	1	2042	12 11	30
By on Sola PCC1 2 LT MCE Haywo th PCC1_1_LT_MCE			NA NA				Cont aCostaCount Cont aCostaCount Ma nCounty	2021 2022 2022	3	7	2021 2021 2021	10	1	2041 2041	9	30
Fallon PCC1 1 LT MCE RPCA PCC1 1 LT MCE Nana PCC1 1 LT MCF			NA RPCA Sola 3, LLC NA	PacGE PacGE PacGE				2022	11 4	30 13	2021 2022 2021	11	30	2041 2042 2041	11 11	29 31
Napa PCC1_1_LT_MCE CMSA PCC1_2_LT_MCE EBCE_PCC1_Sale_1_MCE	East Bay Commun ty Ene gy		NA NA	G eate Bay G eate F esno			NapaCounty Ma nCounty K ngsCounty	2022 2015	7	15 22	2022	7 9	16	2032 2024	7	15
SICE_PCC1_Sale_1_MCE PCEA_PCC1_Sale_1_MCE	San Jose Clean Ene gy Pen nsula Clean Ene gy Autho ty		NA NA	G eate F esno G eate F esno			K ngsCounty K ngsCounty	2015 2015	5	22	2021 2022	11	1	2024 2024	12	31
Golden Fields PCC1 LT MCF	ren name creat the gy ratho Ty		Clea way Ene gy G oup Ranch Se eno Clean Powe LLC CES Elect on Fa m One, LLC	SCE PacGE	No sub a ea		Ke nCounty	2025	3 2	1 22	2025 2024	3 2	1 22	2040 2044	2 2	29 21
Ranch Seieno PCC1 LT MCE CES Election Falm PCC1 DAC 1 LT MCE CES Election Falm PCC1 DAC 2 LT MCE			CES Elect on Fa m One, LLC CES Elect on Fa m One, LLC	PacGE PacGE			Cont aCostaCount F esnoCounty F esnoCounty	2023 2023	12	31	2023 2023	12	31	2043 2043	12	30 30
Daggett PCC1 1 LT MCE Ma sh Land ng LLC RA 1 BAF MCE			Clea way Ene gy G oup NA	SCE G eate Bay	No sub a ea		SanBe na d noCoun Cont aCostaCount	2023 2013	8 5	28	2023 2023	8 5	28	2038 2026	8 9	27
			NA.	G eate F esno			F esnoCounty	2001	1 12	1 23	2020 2023	1	1	2030	12 12	31 31
CALPINE RA 35 S F MCE CALPINE RA 34 NS MCE CALPINE RA 44 NS MCE			NA NA NA	S e a BANC PacGE	No sub a ea		Sutte County Sutte County Cal fo n a	2002 2001	7	1	2021 2022	1	1	2024 2023 2028	12	31 31
CALPINE RA 67 NS MCE CALPINE RA 68 NSF MCE			NA NA	PacGE PacGE			Cal fo n a Cal fo n a				2022 2023	7	1	2030 2030	12 12	31 31
ENERSPONSE RA 2 SS MCE			NA Hecate G d NA	PacGE			Cal fo n a	2024	4	1	2023 2024 2015	4 4	1	2025 2034 2025	12 3	31 31
Hecate Sto age RA 2024 EBMUD B1 MCE EBMUD B1 MCE			NA.	SCE Stockton PacGE			LosAngelesCounty SanJoaqu nCounty Calave asCounty	2024 1983 1930	1	1	2023	7	1 1	2024	6 12	30 31
SENA CF 13 MCE MSCG CF 5 MCE			NA NA	PacGE PACW PACW			Cal fo n a O egon				2024 2021	1	1 1	2024 2024 2024	12 12	31 31
MSCG_CF_5_MCE B oold old CF 4 MCE TENASKA CF 2 MCE			NA NA	PACW Se a			O egon O egon Place County	1966	1	1	2021 2022	1	1 1	2024 2024	12 12	31 31
TENASKA CF 2 MCE POWEREX_CF_3 MCE Powe ex CF 4 MCE			NA NA	S e a PACW PACW			O egon				2023 2022	1 5	1 20	2025 2025	12 12	31 31
Powe ex CF 5 MCE WAPA BR MCE			NA NA	PACW BANC			O egon Cal fo n a				2023 2015	1	1 1	2025 2024	12 12	31 31
WAPA BR 2 MCE GHGF ee A locat on	Pac f c Gas & Elect c		NA NA	BANC PacGE			Cal fo n a Cal fo n a				2025 2024	1	1	2054 2043	12 12	31 31
DR A locat on	Pacific Gas & Electiic		NA.	PacGE			Cal fo n a				2023	1	1	2042	12	31
OS22 New W nd 2026 Gene cLTW nd NM 2030			Unknown Unknown	SCE PacGE			Ke nCounty NewMex co	2026 2030	1	1	2026 2030	1	1	2045 2049	12	31 31
Gene c LT W nd 2033			Unknown Unknown Unknown	PacGE PacGE I D			NewMex co Cal fo n a Impe alCounty	2030 2033 2030	1 1	1	2030 2033 2030	1 1	1 1	2049 2052 2049	12 12	31 31
MTR LDS 2026 VAMO_ST_B omass VAMO_ST_Sola_PV	Pac f c Gas & Elect c Pac f c Gas & Elect c		Unknown NA NA	PacGE PacGE PacGE			Cont aCostaCount Cal fo n a Cal fo n a	2026	1	1	2026 2023 2023	1	1	2045 2024 2024	12 12	31 31
VAMO ST Sola PV VAMO ST W nd VAMO ST Small Hyd o	Pac f c Gas & Elect i c Pac f c Gas & Elect i c Pac f c Gas & Elect i c		NA NA NA	PacGE PacGE PacGE			Cal fo n a Cal fo n a Cal fo n a				2023 2023 2023	1	1	2024 2024 2024	12 12	31 31
VAMO ST Small Hyd o VAMO ST Geothe mal	Pacific Gas & Electiic Pacific Gas & Electiic		NA.	PacGE PacGE			Cal fo n a				2023	1	1	2024	12 12	31 31
VAMO ST Geothe mal Gene c STB omass Gene c STSola			NA NA	PacGE PacGE PacGE			Cal fo n a Cal fo n a Cal fo n a				2023 2023	1	1	2042 2042	12 12	31
Gene c ST W nd Gene c ST Small Hyd o Gene c ST Geothe mal			NA NA	PacGE PacGE PacGE			Cal fo n a Cal fo n a Cal fo n a				2023 2023	1	1	2042 2042	12 12	31 31
Gene cSTLa geHyd o/ACS			NA NA	PacGE							2023 2023	1 1	1	2042 2042	12 12	31 31
Gene c LDS 2030 Gene c 4 Hou Sto age 2028			Unknown Unknown	PacGE PacGE			Cont aCostaCount SolanoCounty	2030 2028	1	1	2030 2028	1 1	1 1	2049 2047	12 12	31 31
Gene c 4 Hou Sto age 2034 Gene c CCGT RA_2023 Gene c CCGT RA 2024			Unknown NA	PacGE PacGE PacGE			NapaCounty Cal fo n a Cal fo n a	2034	1	1	2034 2023 2024	1	1 1	2053 2023 2024	12 12	31 31
Gene c CCGT RA 2024 Gene c CCGT RA 2025			NA NA	PacGE PacGE			Cal fon a				2025	1	1	2024 2025	12 12	31 31
Gene c CCGT RA 2025 Gene c CCGT RA 2026 Gene c CCGT RA 2027			NA NA	PacGE PacGE PacGE			Cal fo n a Cal fo n a Cal fo n a				2026 2027	1	1	2025 2026 2027	12 12	31 31
Gene c CCGT RA_2028 Gene c CCGT RA 2029			NA NA	PacGE PacGE			Cal fon a				2028 2029	1	1	2028 2029	12	31
Gene c CCGT RA 2030 Gene c CCGT RA_2031 Gene c CCGT RA 2032			NA NA	PacGE PacGE			Cal fo n a Cal fo n a Cal fo n a				2030 2031	1	1	2030 2031 2032	12 12	31 31
Gene c CCGT RA 2032 Gene c CCGT RA 2033 Gene c CCGT RA 2034			NA NA NA	PacGE PacGE PacGE			Cal fon a Cal fon a				2032 2033 2034	1	1	2032 2033 2034	12	31
Gene c CCGT RA 2034 Gene c CCGT RA 2035 RESI RA 2 NS MCE			NA NA Res Stat on, LLC	PacGE PacGE			Cal fo n a Cal fo n a	2023		1	2034 2035 2023	1	1	2034 2035 2032	12	31
PGE Online cogt 1 PGE Online cogt 2	Pacific Gas & Electiic Pacific Gas & Electiic		MIS SEAR ON, LLC	PACOE			Cariona	2018	1	1	2024 2024 2024	1	1	2026	12	31
	Pacific Gas & Electic Pacific Gas & Electic							2018 2018	1	1	2024	1	1	2025 2024	12	31
PGE Online chp PGE Online chp 1 PGF Online chp 2	Pac f c Gas & Elect c Pac f c Gas & Elect c Pac f c Gas & Elect c							2018 2018 2018	1	1	2024 2024 2024	1	1	2024 2025 2026	12	31
PGE Online chp_2 PGE Online batte y PGE Development batte v 1	Pacific Gas & Electic Pacific Gas & Electic							2018 2018 2024	1	1	2024 2024 2025	1 1	1	2026 2035 2035	12 12	31

Ise_unique_contract_id	contract_execution_date_year	contract_execut on_date_month	contract_execut on_date_day	tx_upgrades	tx_upgrade_date_year	tx_upgrade_date_month	tx_upgrade_date_day	tx_upgrade_descript on	d1911016_tranche	d2106035_procurement_cat	mtr_tranche1_NQC	mtr_tranche2_NQC	mtr_tranche3_NQC	mtr_tranche4_NQC_LDES	mtr_tranche4_NQC_firm_ZE	mtr_NQC_ZE_gen_paired_dr	previous_COD_year
Oct on MCF	2010	12	3						NA NA	NA NA							
Hay MCE Geyse s MCE L ncoln MCE	2010 2013 2012	12 7	3 11						NA NA NA	NA NA NA							
Voyage II MCE WM MCE Antelope 2 MCE	2016	12 11	5	NA .					NA 3	NA NA							2017
Cooley I MCE	2014 2016 2014	11 10	15 7						NA NA	NA NA							
Cost Plus_MCE Dese t Ha vest MCE F eethy 1 MCE	2015 2016 2015	4 11 9	14 18 4						NA NA NA	NA NA NA							
F eethy 2_MCE G eat Valley_MCF	2015 2016	9	4 15						NA NA	NA NA							
L ttle Bea 1 MCE L ttle Bea 3 MCE	2016 2016	9	23 23						NA NA	NA NA							
L ttle Bea 4 MCE L ttle Bea 5 MCE SRA po t MCE	2016 2016 2012	9 5	23 23 8						NA NA NA	NA NA NA							
Soscal Fe y Sola C_MCE	2014	10 8	3 30						NA NA	NA NA							
Soscal Fe y Sola D MCE Ame can Canyon Sola A MCE	2018 2018	8	30 30						NA NA	NA NA NA							
Ame can Canyon Sola B MCE Ame can Canyon Sola C MCE S Ive a Ranch A MCE S Ive a Ranch B MCE S R A po t 2 MCE	2018 2018 2019 2019 2019	8 3	30 7						NA NA NA	NA NA							
S Ive a Ranch B_MCE SR A po t 2 MCE EO P oducts MCE	2019 2018	3 10	7 24						NA NA NA	NA NA NA							
Cakley RV& Boat Sto age MCE DRES Qua y 2.4 MCE Co co an_MCE	2018 2018 2018 2011	5 3	8 23						NA NA NA	NA NA NA							
Co co an MCE GooseLake MCE	2011 2011	7	8 8						NA NA	NA NA							
Goose Lake MCE Buck MCE MCE Sola 1,8.5 MCE MCF Sola 1,2.0 MCF	2011 2011 2017 2017	7 5 5	8 30 30	NA NA					NA 3	NA NA NA							2017 2017
MCE Sola 1 2.0 MCE Ke n Tule PCC1 1 LT MCE S Ive a Ranch C MCE Lake He man PCC1 1 LT MCE	2020	1 3	22 7	100					NA NA	NA NA							2027
	2020 2020	7 10	29 15	YES					NA NA	NA NA NA					-		
St auss PCC1 1 LT MCE By on Sola PCC1 2 LT MCE Haywo th_PCC1_1_LT_MCE	2018 2020 2021	10 12 3	19 11 8	YES				Completed	NA NA	NA NA NA							2022
RPCA PCC1 1 LT MCE	2021 2021	4 3	5 29						NA NA	NA NA							
Napa_PCC1_1_LT_MCE CMSA PCC1 2 LT MCE EBCE PCC1 Sale 1 MCE	2021 2021 2021	7	14 16						NA NA NA	NA NA NA							
SICE_PCC1_Sale_1_MCE	2021	11 11	1 29						NA NA	NA NA							
Goldon Felds PCC1 IT MCE RanchSe eno PCC1 LT MCE CES Elect on Fa m PCC1 DAC 1 IT MCE CES Elect on Fa m PCC1 DAC 2 IT MCE Daggett PCC1 1 IT MCE	2022 2022	2 2	4 23	YES NO	2024	10	1		NA NA	gene al & ZE gen pa ed d NA			75			61.3	
CES Elect on Fa m PCC1 DAC 1 LT MCE CES Elect on Fa m PCC1 DAC 2 LT MCE	2022 2022 2020	3	20 20	YES					NA NA NA	NA NA gene al & ZE gen pa ed d	58	7.9				48.1	2022
Ma sh Land ng LLC RA 1 BAF MCE WELLHEAD RA 3 POF MCE	2022 2019	7 8	26 1	1.5					NA NA	NA NA	30	7.2				70.4	1011
CALPINE RA 35 S F MCE	2020	2	28	NA.					NA 182 NA	NA NA NA							2001
CALPINE RA, 44, NS, MCE CALPINE RA, 67 NS MCE CALPINE RA, 68 NSF MCE									NA NA NA	NA NA NA							
	2022 2015	8	4						NA NA NA	NA gene al NA		167.795					
Hecate Sto age RA 2024 EBMUD B1 MCE EBMUD B1 MCE ESMA CF 13 MCE	2015 2015 2019	6	22 22						NA NA NA	NA NA NA							
MSCG_CF_5_MCE B oolf eld_CF_4 MCE TENASKA_CF_2_MCE	2020 2020	9 2	15 14						NA NA	NA NA							
TENASKA CF 2 MCE POWEREX_CF_3_MCE	2021 2022 2022	12 4	17 11						NA NA NA	NA NA NA							
POWERX_CF_3_MCE POWe ex_CF_4_MCE POWe ex_CF_5_MCE WAPA_BR_MCE	2022 2011	5	18 18						NA NA	NA NA							
WAPA BR 2 MCE GHGF ee A locat on	2021	3	18						NA NA	NA NA							
DR A locat on									NA.	NA.							
OS22 New W nd 2026 Gene cLT W nd NM 2030				NA NA					NA NA	NA NA							
Gene cLTW nd 2033 Gene cLT Geothe mai 2030				NA NA NA					NA NA	NA NA							
Gene cLTW nd 2033 Gene cLTGoothe mal 2030 MTR LDS 2026 VAMO ST B omass VAMO ST Sola PV				NA .					NA NA NA	long du at on sto age NA				31.28			
VAMO SI Wind									NA NA	NA NA NA							
VAMO ST Geothe mal Gene c STB omass									NA NA	NA NA							
VAMO ST Geothe mal Gene cST8 omass Gene cSTSola Gene cSTW nd Gene cSTSnall Hyd o									NA NA NA	NA NA NA							
Gene cSTGeothe mal Gene cSTLa ge Hyd o/ACS									NA NA	NA NA							
Gene CLDS 2030 Gene c 4 Hou Sto age 2028	-			NA NA					NA NA	NA NA					_		
Gene c 4 Hou Sto age 2034 Gene c CCGT RA_2023 Gene c CCGT RA 2024				NA					NA NA NA	NA NA NA							
Gene c CCGT RA 2025 Gene c CCGT RA 2026 Gene c CCGT RA 2027 Gene c CCGT RA 2027									NA NA	NA NA							
									NA NA NA	NA NA NA							
Gene c CCGT RA 2030 Gene c CCGT RA_2031 Gene c CCGT RA_2032									NA NA	NA NA							
Gene c CCGT RA 2032 Gene c CCGT RA 2033 Gene c CCGT RA 2034									NA NA NA	NA NA NA							
Gene c CCGT RA 2035	2022	8	31	NA NA					NA NA 3	NA NA							
PGE Onl no cogt 1 PGE Onl no cogt 2 PGE Onl no cogt 2 PGE Onl no cogt 3 PGE Onl no chp PGE Onl no chp PGE Onl no chp	2017 2017 2017	1 1	1														
PGE Online chp	2017 2017 2017	1 1	1 1														
PGE Onl ne chp_2 PGE Onl ne batte y PGE Development batte y 1	2017	1	1														
PGE Development batte y 1 PGE Development batte y 2	2017 2022 2022	1	1														

lse_unique_contract_id	prev ous_COD_month	previous_COD_day	remediat on_plan	signed_contract	notice_to_proceed	public_contract	buying_energy_capac ty	NQC_reporting_source	procurement_origin	csp_resource_category	csp_annual_2024 csp	annual_2026 csp_annual_2030	csp_annual_2035	macro_supertype	notes
Ost om_MCE Hav MCF						YES YES	Ene gyCapac ty Ene gyCapac ty	Calculated Calculated	RPS, RA	B ogas (GWh) B ogas (GWh)	12	12 12	0	physical physical	
Hay MCE Geyse s MCE L ncoln MCE						YES	Ene gyCapac ty Ene gyCapac ty	Calculated Calculated	RPS, RA RPS, RA RPS, RA	Geothe mal (GWh) B ogas (GWh)	88 27	88 0 27 27	0	physical physical	
Voyage II MCE						YES	Ene gyCapac ty	Calculated	RPS, RA	W nd Ex st ng Cal fo n a GWh)	138	138 137	0	phys cal	
WM_MCE Antelope 2_MCE	9	14	NO.	YES	NO NO	YES YES	E gyCapa ty Ene gyCapac ty	C ic ate Calculated Calculated	RPS, R RPS, RA RPS, RA	B gas GWh Sola Ex st ng Cal fo n a (GWh)	30 294	0 0 292 286	3 279	y cal physical	executed cont act n ts Feb ua y 1, 2021 compl at
Cooley I MCE Cost Plus MCF						YES YES	Ene gyCapac ty Ene gyCapac ty		RPS, RA RPS, RA	Sola Ex st ng Cal fo n a (GWh) Sola Ex st ng Cal fo n a (GWh)	2	2 2	2	ex st nggene c ex st nggene c	
Dese t Ha vest MCE F eethy 1 MCE						YES	Ene gyCapac ty	Calculated Calculated	RPS, RA RPS, RA	Sola Ex st ng Cal fo n a (GWh) Sola Ex st ng Cal fo n a (GWh)	258 2	255 250 2 2	243	phys cal	
F eathy 2 MCE						YES	Ene gyCapac ty Ene gyCapac ty	Calculated	RPS. RA	Sola Ex st ng Cal fo n a (GWh)	2	2 2	2	ex st nggene c ex st nggene c phys cal	
G eat Valley MCE L ttle Bea 1 MCE						YES YES	Ene gyCapac ty Ene gyCapac ty	Calculated Calculated	RPS, RA RPS, RA	Sola Ex st ng Cal fo n a (GWh) Sola Ex st ng Cal fo n a (GWh)	286 108	284 281 107 105	102	phys cal	
L ttle Bea 3 MCE L ttle Bea 4 MCE						YES	Ene gyCapac ty Ene gyCapac ty	Calculated Calculated	RPS RA	Sola Ex st ng Cal fo n a (GWh) Sola Ex st ng Cal fo n a (GWh)	54	53 52 133 131	51 127	physical physical	
L ttle Bea 5_MCE						YES	Ene gyCapac ty	Calculated	RPS, RA RPS, RA RPS. RA	Sola Ex st ng Cal fo n a (GWh)	135 135	133 131 133 131	127 127	phys cal	
SRA po t MCE Mustang MCE						YES	Ene gyCapac ty Ene gyCapac ty	Calculated Calculated	RPS, RA RPS, RA RPS	Sola Ex st ng Cal fo n a (GWh) Sola Ex st ng Cal fo n a (GWh)	82	2 2 81 79	0	ex st nggene c phys cal	
Mustang MCE Soscal Fe y Sola C_MCE Soscal Fe y Sola D MCE						YES YES	Ene gyCapac ty Ene gyCapac ty Ene gyCapac ty	Calculated Calculated	RPS RPS	Sola Ex st ng Cal fo n a (GWh) Sola Ex st ng Cal fo n a (GWh) Sola Ex st ng Cal fo n a (GWh)	3	3 3	3	ex st nggene c ex st nggene c	
Ame can Canyon Sola A MCE						YES	Ene gyCapac ty	Calculated Calculated	RPS	Sola Ex st ng Cal fo n a (GWh)	3	3 3	3	ex st nggene c	
Ame can Canyon Sola B_MCE Ame can Canyon Sola C_MCE						YES YES	Ene gyCapac ty Ene gyCapac ty	Calculated Calculated	RPS RPS	Sola Ex st ng Cal fo n a (GWh) Sola Ex st ng Cal fo n a (GWh)	3	3 3	3	ex st nggene c ex st nggene c	
Ame can Canyon Sola C MCE S Ive a Ranch A MCE S Ive a Ranch B MCE						YES	Ene gyCapac ty	Calculated Calculated	RPS ppc	Sola Ex st ng Cal fo n a (GWh) Sola Ex st ng Cal fo n a (GWh)	3	3 3	3	ex st nggene c	
SRA po t 2 MCE						YES	Ene gyCapac ty Ene gyCapac ty	Calculated	RPS RPS	Sola Ex st ng Cal fo n a (GWh)	2	2 2	ő	ex st nggene c ex st nggene c	
EO P oducts MCE Oakley RV & Boat Sto age MCE						YES		Calculated Calculated	RPS RPS	Sola Ex st ng Cal fo n a (GWh) Sola Ex st ng Cal fo n a (GWh)	2	2 2	2	ex st negene c	
Oakley RV & Boat Sto age MCE DRES Qua y 2.4 MCE Co co an_MCE						YES	Ene gyCapac ty Ene gyCapac ty Ene gyCapac ty	Calculated Calculated Calculated	RPS RPS, RA	Sola Ex st ng Cal fo n a (GWh) Sola Ex st ng Cal fo n a (GWh) Sola Ex st ng Cal fo n a (GWh)	1 28	1 0 28 27	0 26	ex st nggene c phys cal	
Goosel ake MCF						YES	Ene gyCapac ty	Calculated Calculated	RPS, RA	Sola Ex st ng Cal fo n a (GWh)	31	30 30	29	phys cal	
Buck MCE MCESola 1_8.5_MCE	12	22	NO	YES	NO	YES YES	Ene gyCapac ty E gyCapa ty	C Ic ate	RPS RPS, R	Sola Ex st ng Cal fo n a (GWh) S I Ex st g I o a GWh)	3 17	7 7	1	ex st nggene c y cal	executed cont act n ts Feb ua y 1, 2021 compl a
MCESola 1 2.0 MCE Ken Tule PCC1 1 LT MCE	12	22	NO	YES	NO	YES	En g Ca ac y Ene gyCapac ty	C Ic t d Calculated	RPS RA RPS, RA	SlaEst Cafo (W)	4 37	37 27	37	hsal	executed cont act n ts Feb ua y 1, 2021 compl a
S Ive a Ranch C MCE						YES	Ene gyCapac ty	Calculated		Sma I Hyd o (GWh) Sola Ex st ng Cal fo n a (GWh)	3	3 3	3	phys cal ex st nggene c	
Lake He man PCC1 1 LT MCE By on Sola PCC1 1 LT MCE	1					YES YES	Ene gyCapac ty Ene gyCapac ty	Calculated Calculated	RPS, RA RPS, RA	Sola Ex st ng Cal fo n a (GWh) Sola Ex st ng Cal fo n a (GWh)	3	3 3	3	ex st nggene c ex st nggene c	
St auss PCC1 1 LT MCE By on Sola PCC1 2 LT MCE	7	1	YES	YES	YES	aynca aton YES	e vaat	C Ic t d Calculated	RP . R	W Ne PG E(GWh) Sola Ex st ng Cal fo n a (GWh)	91	2 90	290	y I ex st nggene c	med at on Plan and (2) a P oject T mel ne. In ts Fe
Havwo th PCC1 1 LT MCE						YES	Ene gyCapac ty Ene gyCapac ty	Calculated	RPS RPS	Sola Ex st ng Cal fo n a (GWh)	2	2 2	2	ex st nggene c	
Fallon PCC1 1 LT MCE RPCA PCC1 1 LT MCE Napa_PCC1_1_LT_MCE	1			YES	Yes, but p c ng and	YES any financial information	Ene gyCapac ty Ene gyCapac ty	Calculated Calculated	RPS RPS, RA	Sola Ex st ng Cal fo n a (GWh) Sola D st buted (GWh)	2 14	2 2 14 14	2 13	ex st nggene c newgene c	Feed n ta ff
Napa_PCC1_1_LT_MCE CMSA_PCC1_2_LT_MCE						YES			RPS RPS	Sola Ex st ng Cal fo n a (GWh)	1	1 1	1	ex st nggene c	
EBCE PCC1 Sale 1 MCE						YES	Ene gyCapac ty Ene gyOnly	Calculated Calculated	RPS	B omass (GWh) Sola Ex st ng Cal fo n a (GWh)	8	0 0	0	ex st nggene c phys cal	
SICE_PCC1_Sale_1_MCE PCEA_PCC1_Sale_1_MCE						YES	Ene gyOnly Ene gyOnly	Calculated Calculated	RPS RPS	Sola Ex st ng Cal fo n a (GWh) Sola Ex st ng Cal fo n a (GWh)	4 10	0 0	0	phys cal phys cal	
G ld n F PC 1 LT MCE Ranch Se eno_PCC1_LT_MCE				Y S YES	Y, tpcn n	n fn nf n any fnanc al nfo mat on	Ene gyOnly E e C a t Ene gyCapac ty	Calculated Cal t d Calculated	R S D.21-06-0 S RPS, RA	Sola Existing Califolnia (GWh) Hybid Pid Sila att (Wh) Sola Dist buted (GWh)	0	30 95	2 5	ne gen newgene c	u availability equiement ("61MW of NQC) and the Feed in tail ff
CES Elect on Fa m PCC1 DAC 1 LT MCE				YES YES		any financial info mation	Ene gyCapac ty	Calculated	RPS,RA	Sola D st buted (GWh)	1	1 1	1	newgene c	Feed nta ff
CES Elect on Fa m PCC1 DAC 2 LT MCE D g e t PCC1 1 T MCE	1	31	NA NA	YES YES	Yes, but p c ng and Y b t c g	n fn c Inf m n	Ene gyCapac ty Ene Ca a	Calculated C Icula d	RPS RPS, R	Sola D st buted (GWh) Hy d So a a d Bat (GW)	12 3	12 12 324 319	12 11	newgene c wge	Feed in taliff DCPP S hou lava lab lity lequilement.MCE plans to
Ma sh Land ng LLC RA 1 BAF MCE						YES	Capac tyOnly	Calculated In the contact	RA RA	NA NA	0	0 0	0	phys cal	
WELLHEAD_RA_3_POF_MCE CALPINE RA 35 S F MCE						YES	Capac tyOnly Capac tyOnly Cap ct O y	In the cont act	RA	NA NA	0	0 0	0	physical physical	
CALPINE RA 34 NS MCE CALPINE_RA_44_NS_MCE	7	1	NO	YES	NO	YES	Cap ct O y Capac tyOnly	th ont act In the cont act	D19 101 RA RA	NA NA	0	0 0	0	physical s e ed m t existinggene c	n ts Feb ua y 1, 2021 compl ancef l ng pe D.20-12
CALPINE RA 67 NS MCE CALPINE RA 68 NSE MCE						YES	Capac tyOnly Capac tyOnly	In the cont act	RA RA	NA NA	0	0 0	0	ex st nggene c ex st nggene c	
ENERSPONSE_RA_2_SS_MCE						YES	Capac tyOnly	In the contact	RA	NA NA	0	0 0	0	ex st nggene c	
Hecate Sto age RA 2024 EBMUD B1 MCE				YES	Yes, but p c ng and	any financial info mation YES	Capac tyOnly Ene gyOnly	Calculated Calculated	D2106035 RPS	Batte y Sto age MWh Ene gy Capac ty) Sma i Hvd o (GWh)	555 45.8	7 0 740 0 0	7 0	ne phys cal	nt pu suant to D.21-06-035. MCE ntends and exper
EBMUD B1 MCE SENA CF 13 MCE						YES	Ene gyOnly	Calculated	RPS	Sma I Hyd o (GWh)		0 0	0	phys cal	
MSCG_CF_5_MCE B oold eld CF 4 MCE						YES	Ene gyOnly Ene gyOnly	Calculated Calculated Calculated Calculated	pol cy pol cy	La ge Hyd o (GWh) Impo ted Hyd o (GWh) Impo ted Hyd o (GWh)	200 400 200	0 0	0	ex st nggene c ex st nggene c	
B oolf eld CF 4 MCE TENASKA CF 2 MCE						YES	Ene gyOnly Ene gyOnly	Calculated Calculated	pol cy pol cy	Impo ted Hyd o (GWh) La ge Hyd o (GWh)	200 120	0 0	0	ex st nggene c	
POWEREX_CF_3_MCE Powe ex CF 4 MCE						YES	Ene gyOnly	Calculated	pol cy	Impo ted Hyd o (GWh)	250	0 0	0	ex st nggene c	
Powe ex CF 5 MCE WAPA_BR_MCE						YES	Ene gyOnly Ene gyOnly	Calculated Calculated	pol cy pol cy RPS	Impo ted Hyd o (GWh) Impo ted Hyd o (GWh)	200 100	0 0	0	ex st nggene c ex st nggene c	
WAPA_BR_MCE WAPA_BR_2_MCE						YES	Ene gyOnly Ene gyOnly	Calculated Calculated	RPS RPS	La ge Hyd o (GWh) La ge Hyd o (GWh)	25 0	0 0	0 25	ex st nggene c ex st nggene c	
GHG F ee A locat on						No	Ene gyOnly	Calculated	allocat on	La ge Hyd o (GWh)	500	500 500	500	ex st nggene c	
DR A locat on						NO	CapacityOnly	in the contract	anocat on	Still Dr. WW)	Ü	0	Ü	ex st riggerie C	
OS22 New W nd 2026			NA.	NO.		No	Ene gyCapac ty	Calculated	RPS, RA	W nd New SCE SDG&E (GWh)		263 263	263	newgene c	Gene c
Gene cLTW nd NM 2030			nA NA	NO NO		No No	Ene gyCapac ty	Calculated	RPS, RA	W nd New Mex co (GWh)	0	263 263 0 250	253 250	new esolve	Gene c
Gene cLTW nd_2033 Gene cLTGeothe mal 2030	1		NA NA	NO NO		No No	Ene gyCapac ty Ene gyCapac ty	Calculated Calculated	RPS, RA RPS, RA RPS, RA	W nd Offsho e Mo o Bay (GWh) Geothe mai (GWh)	0	0 0 580	250 400 580	new esolve newgene c	Gene c
MTR LDS 2026			NA NA	NO		No Vor	Ene gyCapac ty	Calculated	D2106035	Batte y Sto age MWh Ene gy Capac ty)	0	0 0	0	newgene c	Gene c
VAMO_ST_B omass VAMO_ST Sola_PV						Yes	Ene gyOnly Ene gyOnly	Calculated Calculated	allocat on allocat on	B omass (GWh) Sola Ex st ng Cal fo n a (GWh)	206	0 0	0	ex st nggene c ex st nggene c	
VAMO ST W nd VAMO ST Small Hyd o	1			· · · · · · · · · · · · · · · · · · ·		Yes Yes	Ene gyOnly Ene gyOnly	Calculated Calculated	allocat on allocat on	W nd Ex st ng Cal fo n a GWh) Sma l Hyd o (GWh)	165 14	0 0	0	ex st nggene c ex st nggene c	<u> </u>
VAMO ST Geothe mal Gene c STB omass						Yes	Ene gyOnly Ene gyOnly	Calculated	allocation RPS RPS	Geothe mal (GWh)	70	0 0	0	ex st nggene c	
Gene cSTSola						No No	Ene gyOnly	Calculated Calculated	RPS	B omass (GWh) Sola Ex st ng Cal fo n a (GWh)	28 138	34 0 171 0	16 79	ex st nggene c ex st nggene c	
Gene c ST W nd Gene c ST Small Hyd o						No No	Ene gyOnly Ene gyOnly	Calculated Calculated	RPS RPS	W nd Ex st ng Cal fo n a GWh) Sma l Hyd o (GWh)	303 55	558 214 69 0	374 32	ex st nggene c ex st nggene c	1
Gene c ST Geothe mal						No	Ene gyOnly	Calculated	RPS RPS	Geothe mal (GWh) Impo ted Hyd o (GWh)	142	98 117	149	ex st nggene c	
Gene c ST La ge Hyd o/ACS Gene c LDS 2030			NA NA	NO		No No	Ene gyOnly Ene gyCapac ty	Calculated Calculated	RA	Batte y Sto age MWh Ene gy Capac ty)	0	0 400	120 400	ex st nggene c newgene c	Gene c
Gene c 4 Hou Sto age 2028 Gene c 4 Hou Sto age 2034			NA NA	NO NO		No No	Ene gyCapac ty Ene gyCapac ty	Calculated Calculated	RA RA	Batte y Sto age MWh Ene gy Capac ty) Batte y Sto age MWh Ene gy Capac ty)	0	0 800	800 800	newgene c newgene c	Gene c
Gene c CCGT RA_2023 Gene c CCGT RA 2024						No	Capac tyOnly Capac tyOnly	Calculated Calculated	RA DA	NA NA	0	0 0	0	ex st nggene c	
Gene c CCGT RA 2025						No No	Capac tyOnly	Calculated	NA RA	NA NA	0	0 0	0	ex st nggene c ex st nggene c	
Gene c CCGT RA 2026 Gene c CCGT RA 2027						No No	Capac tyOnly Capac tyOnly	Calculated Calculated	RA RA	NA NA	0	0 0	0	ex st nggene c ex st nggene c	
Gene c CCGT RA_2028						No	Capac tyOnly	Calculated	RA RA	NA NA	0	0 0	ő	ex st nggene c	
	1			· · · · · · · · · · · · · · · · · · ·		No No			RA RA	NA NA	0	0 0	0	ex st nggene c ex st nggene c	<u> </u>
Gene c CCGTRA 2030 Gene c CCGTRA 2031						No	Capac tyOnly Capac tyOnly	Calculated Calculated	RA	NA NA	ō	0 0	0	ex scriggene c	
Gene c CCGT RA 2032 Gene c CCGT RA 2033 Gene c CCGT RA_2034						No No	Capac tyOnly Capac tyOnly Capac tyOnly	Calculated Calculated Calculated	RA RA RA	NA NA	0	0 0	0	ex st nggene c ex st nggene c ex st nggene c	1
Gene c CCGTRA 2034 Gene c CCGTRA 2035				-		No No	Capac tyOnly Capac tyOnly	Calculated Calculated	RA RA	NA NA	0	0 0	0	ex st nggene c	
Gene c CCGT RA 2035 RESI RA 2 NS MCE				YES	NO	any financial information	Capac tyOnly	In the contact	D1911016, RA	Shed DR MW)	15	15 15	0	ex st nggene c new e e	east 15 MW of no emental NQC towards MCE's D 1
PGE Online ccgt 1 PGE Online ccgt 2							Ene gyCapac ty Ene gyCapac ty			NA NA	0	0 0	0		1
PGE_Onl ne_ccgt_3 PGE_Onl ne_chp							Ene gyCapac ty			NA NA	0	0 0	0		
PGE Online chp 1							Ene gyCapac ty Ene gyCapac ty			NA NA	0	0 0	0		
PGE Online chp_2 PGE Online batte y							Ene gyCapac ty Capac tyOnly			NA Batte y Sto age MWh Ene gy Capac ty)	0 93.23439546 9:	0 0 1.23439546 93.23439546	93.23439546		
BGE Davidonment batto v 1	1		1					+		,g g,pac ty)	22 20050007 23	20050007 22 20050007			+

			I					L "			
resource WHEATL_6_LNDFIL	Contract_status	contracted_nameplate_capacity	is_hybrid_paired NotHvbrid	can_charge_from_grid	contracted_generator_mw	contracted_storage_mw	contracted_storage_depth_mwh	buy_sell_own	contract_start_date_year 2013	contract_start_date_month	contract_start_date_day
WHEATL_6_LNDFIL PEABDY 2 LNDFIL	Online	2	NotHybrid NotHybrid	0	0	0	0	0	2013	7	1
GEYS13_7_UNIT13	Online	10	NotHybrid	0	0	0	0	0	2013	1	
PLSNTG 7 LNCLND	Online	5	NotHybrid	0	0	0	0	0	2017	2	1
VOYAGR 2 VOYWD3	Online	0	NotHybrid	0	0	0	0	0	2018	12	
NOVATO 6 LNDFL	Online		NotHybrid	0	0	0	0	0	2017	9	
BGSKYN 2 AS2SR1	Online	105	NotHybrid	0	0	0	0	0	2019	1	
_EXISTING_GENERIC_SOLAR_FIXED	Online	1	NotHybrid	0	0	0	0	0	2017	3	
_EXISTING_GENERIC_SOLAR_FIXED	Online	1	NotHybrid	0	0	0	0	0	2016	9	
DSRTHV_2_DH1SR1	Online	80	NotHybrid	0	0	0	0	0	2020	12	1
_EXISTING_GENERIC_SOLAR_FIXED	Online	1	NotHybrid	0	0	0	0	0	2016	10	
EXISTING GENERIC SOLAR FIXED	Online		NotHybrid	0	0	0	0	0	2016	10	
TRNQL8_2_ROJSR1	Online	100	NotHybrid	0	0	0	0	0	2018	4	1
LTBERA_1_LB1SR1	Online	40	NotHybrid	0	0	0	0	0	2020	12	
LTBEAR_1_LB3SR3 LTBEAR_1_LB4SR4	Online	20	NotHybrid NotHybrid	0	0	0	0	0	2020	12	
	Online	50	HOLHYDIIG	0	U	Ü	0	0	2020	12	
EXISTING GENERIC SOLAR FIXED	Online	50	NotHybrid	0	0	0	0	0	2020	12	
MSTANG 2 SOLAR4	Online	30	NotHybrid	0	0	0	0	0	2012	6	
EXISTING GENERIC SOLAR FIXED	Online	1	NotHybrid	0	0	0	0	0	2020		
EXISTING GENERIC SOLAR FIXED	Online	1	NotHybrid	0	0	0	0	0	2020	8	
EXISTING GENERIC SOLAR FIXED	Online	1	NotHybrid	0	0	0	0	0	2019	9	
	Online	1	NotHybrid	0	0	0	0	0	2019	9	
EXISTING GENERIC SOLAR FIXED	Online	1	NotHybrid	0	0	0	0	0	2019	9	
_EXISTING_GENERIC_SOLAR_FIXED	Online	1	NotHybrid	0	0	0	0	0	2021	3	
_EXISTING_GENERIC_SOLAR_FIXED	Online	1	NotHybrid	0	0	0	0	0	2021	3	
EXISTING GENERIC SOLAR FIXED	Online	1	NotHybrid	0	0	0	0	0	2020	9	
_EXISTING_GENERIC_SOLAR_FIXED	Online	1	NotHybrid	0	0	0	0	0	2018	12	
_EXISTING_GENERIC_SOLAR_FIXED	Online	1	NotHybrid	0	0	0	0	0	2018	7	
	Online	0	NotHybrid	0	0	0	0	0	2019	5	
CORCAN_1_SOLAR2	Online	11	NotHybrid	0	0	0	0	0	2015	5	
GOOSLK 1 SOLAR1	Online Online	12	NotHybrid NotHybrid	0	0	0	0	U	2015	5	
	Online Online	1	NotHybrid NotHybrid	0	0	0	0	0	2015 2017	<u>5</u>	2
RICHMN_1_CHVSR2 RICHMN 1 SOLAR	Online	3	NotHybrid	0	0	0	0	0	2017	12	2
	Online	11	NotHybrid	0	0	0	0	0	2017	72	2
EXISTING GENERIC SOLAR FIXED	Online	1	NotHybrid	0	0	0	0	0	2021	3	
_EXISTING_GENERIC_SOLAR_FIXED	Online	5	NotHybrid	0	0	0	0	0	2021	9	
_EXISTING_GENERIC_SOLAR_FIXED	Online	3	NotHybrid	0	0	0	0	0	2022	5	2
STRAUSSWIND	Development	91	NotHybrid	0	0	0	0	0			
_EXISTING_GENERIC_SOLAR_FIXED	Online	1	NotHybrid	0	0	0	0	0	2021	12	
EXISTING GENERIC SOLAR FIXED	Online	1	NotHybrid	0	0	0	0	0	2021	10	
_EXISTING_GENERIC_SOLAR_FIXED	Online	1	NotHybrid	0	0	0	0	0	2021	12	
_NEW_GENERIC_SOLAR_FIXED	Development	5	NotHybrid	0	0	0	0	0	2022	11	3
	Online	1	NotHybrid	0	0	0	0	0	2021	11	
_EXISTING_GENERIC_BIOMASS/WOOD		1	NotHybrid	0	0	0	0	0	2022		1
	Online	0	NotHybrid	0	0	0	0	Sell	2021	9	
CORCAN_1_SOLAR2	Online	0	NotHybrid	0	0	0	0	Sell	2021	11	
	Online Development	100	NotHybrid NewSolarNewStorage	0	100	0	368	Sell	2022	1	1
	Development		NewSolarNewStorage	NO	3	0.8	3.2	0	2023	3	2
NEW GENERIC SOLAR TAXIS	Development	2	NotHybrid	NO n	2	0.8	3.2	0	2024	12	
	Development	4	NotHybrid	0	0	0	0	0	2023	12	
NEW_GENERIC_SOLAR_1AXIS	Development	110	NewSolarNewStorage	NO	110	60	240	0	2023	8	2
COCOPP_2_CTG4	Online	81		0	0	0	0	0	2023	5	
	Online	50	NotHybrid	0	0	0	0	0	2020	1	
BOGUE 1 UNITA1	Online		NotHybrid	0	0	0	0	0	2023	1	
SUTTER_2_CISO	Online	70	NotHybrid	0	0	0	0	0	2021	1	
_EXISTING_GENERIC_COMBINED_CYCLE		25	NotHybrid	0	0	0	0	0	2022	1	
EXISTING_GENERIC_COMBINED_CYCLE		15	NotHybrid	0	0	0	0	0	2022	7	
_EXISTING_GENERIC_COMBINED_CYCLE		15	NotHybrid	0	0	0	0	0	2023	1	
	Online		NotHybrid	0	0	0	0	0	2023	4	
_NEW_GENERIC_BATTERY_STORAGE	Development Online		NotHybrid NotHybrid	0	0	0	740	0	2024	4	ļ
CAMCHE_1_PL1X3 PARDEB 6 UNITS	Online Online	0	NotHybrid NotHybrid	0	0	0	0	0	2015 2023	7	
PARDEB_6_UNITS _EXISTING_GENERIC_INSTATE_LARGE_HY		0	NotHybrid NotHybrid	0	0	0	0	0	2023	1	
EXISTING_GENERIC_INSTATE_LARGE_HY EXISTING GENERIC NW HYDRO	Online	0	NotHybrid NotHybrid	U	0	0	0	0	2024	1	1
	Online	0	NotHybrid	0	0	0	0	0	2021	1	
EXCHEC 7 UNIT1	Online	0	NotHybrid	0	n	n	0	0	2022	1	
	Online	0	NotHybrid	0	n	n	0	0	2023	1	
	Online	0	NotHybrid	n	n	n	0	0	2022	5	1
EXISTING GENERIC NW HYDRO	Online	0	NotHybrid	0	0	0	0	0	2023	1	
_EXISTING_GENERIC_INSTATE_LARGE_H		0	NotHybrid	0	0	0	0	0	2015	1	
_EXISTING_GENERIC_INSTATE_LARGE_H)	Online	0	NotHybrid	0	0	0	0	0	2025	1	
_EXISTING_GENERIC_INSTATE_LARGE_H		0	NotHybrid	0	0	0	0	Buy	2024	1	
EXISTING GENERIC DR	Online	0	NotHybrid	0	0	0	0	Buy	2023	1	
NEW GENERIC WIND	PlannedNew	100	NotHybrid	0	0	0	0	0	2026	1	
_CREZ_GENERIC_NEW_MEXICO_WIND	PlannedNew		NotHybrid	0	0	0	0	0	2030	1	
_CREZ_GENERIC_MORRO_BAY_OFFSHOR	PlannedNew	95	NotHybrid	0	0	0	0	0	2033	1	
_CREZ_GEIVERIC_IVIORNO_BAT_OFFSHOR			ALCOHOLD TO	- 0	0	- 0	0	0	2030	1	
_NEW_GENERIC_GEOTHERMAL	PlannedNew		NotHybrid	U	U	0	U	U			
_NEW_GENERIC_GEOTHERMAL _NEW_GENERIC_BATTERY_STORAGE	PlannedNew	40	NotHybrid	0	0	0	320	0	2026	1	
_NEW_GENERIC_GEOTHERMAL	PlannedNew Online	40		0	0	0	320 0	0 Buy		1	

EXISTING_GENERIC_WIND	Online	0	NotHybrid	0	0	0	0	Buy	2023	1	1
	Online	0	NotHybrid	0	0	0	0	Buy	2023	1	1
	Online	0	NotHybrid	0	0	0	0	Buy	2023	1	1
	PlannedExisting	0	NotHybrid	0	0	0	0	0	2023	1	1
	PlannedExisting	0	NotHybrid	0	0	0	0	0	2023	1	1
_EXISTING_GENERIC_WIND	PlannedExisting	0	NotHybrid	0	0	0	0	0	2023	1	1
_EXISTING_GENERIC_INSTATE_SMALL_H	PlannedExisting	0	NotHybrid	0	0	0	0	0	2023	1	1
EXISTING GENERIC GEOTHERMAL	PlannedExisting	0	NotHybrid	0	0	0	0	0	2023	1	1
_EXISTING_GENERIC_NW_HYDRO	PlannedExisting	0	NotHybrid	0	0	0	0	0	2023	1	1
_NEW_GENERIC_BATTERY_STORAGE	PlannedNew	50	NotHybrid	0	0	0	400	0	2030	1	1
_NEW_GENERIC_BATTERY_STORAGE	PlannedNew	200	NotHybrid	0	0	0	800	0	2028	1	1
_NEW_GENERIC_BATTERY_STORAGE	PlannedNew	200	NotHybrid	0	0	0	800	0	2034	1	1
EXISTING GENERIC COMBINED CYCLE	PlannedExisting	750	NotHybrid	0	0	0	0	0	2023	1	1
_EXISTING_GENERIC_COMBINED_CYCLE	PlannedExisting	686	NotHybrid	0	0	0	0	0	2024	1	1
_EXISTING_GENERIC_COMBINED_CYCLE	PlannedExisting	639	NotHybrid	0	0	0	0	0	2025	1	1
_EXISTING_GENERIC_COMBINED_CYCLE		731	NotHybrid	0	0	0	0	0	2026	1	1
_EXISTING_GENERIC_COMBINED_CYCLE	PlannedExisting	672	NotHybrid	0	0	0	0	0	2027	1	1
EXISTING GENERIC COMBINED CYCLE	PlannedExisting	498	NotHybrid	0	0	0	0	0	2028	1	1
_EXISTING_GENERIC_COMBINED_CYCLE	PlannedExisting	535	NotHybrid	0	0	0	0	0	2029	1	1
_EXISTING_GENERIC_COMBINED_CYCLE	PlannedExisting	425	NotHybrid	0	0	0	0	0	2030	1	1
_EXISTING_GENERIC_COMBINED_CYCLE	PlannedExisting		NotHybrid	0	0	0	0	0	2031	1	1
_EXISTING_GENERIC_COMBINED_CYCLE	PlannedExisting	542	NotHybrid	0	0	0	0	0	2032	1	1
EXISTING GENERIC COMBINED CYCLE	PlannedExisting		NotHybrid	0	0	0	0	0	2033	1	1
_EXISTING_GENERIC_COMBINED_CYCLE	PlannedExisting		NotHybrid	0	0	0	0	0	2034	1	1
_EXISTING_GENERIC_COMBINED_CYCLE	PlannedExisting	549	NotHybrid	0	0	0	0	0	2035	1	1
_NEW_GENERIC_DR	Review		NotHybrid	0	0	0	0	0	2023	1	1
_EXISTING_GENERIC_COMBINED_CYCLE	Online	44	NotHybrid	0	0	0	0	0	2024	1	1
EXISTING GENERIC COMBINED CYCLE	Online	39	NotHybrid	0	0	0	0	0	2024	1	1
_EXISTING_GENERIC_COMBINED_CYCLE	Online	61	NotHybrid	0	0	0	0	0	2024	1	1
_EXISTING_GENERIC_COGEN	Online	4	NotHybrid	0	0	0	0	0	2024	1	1
_EXISTING_GENERIC_COGEN	Online	3	NotHybrid	0	0	0	0	0	2024	1	1
_EXISTING_GENERIC_COGEN	Online	1	NotHybrid	0	0	0	0	0	2024	1	1
EXISTING GENERIC BATTERY STORAGE	Online	23	NotHybrid	0	0	0	93.23439546	0	2024	1	1
_NEW_GENERIC_BATTERY_STORAGE	Development	6	NotHybrid	0	0	0	23.30859887	0	2025	1	1
_NEW_GENERIC_BATTERY_STORAGE	Development	0	NotHybrid	0	0	0	0.385368835	0	2024	1	1

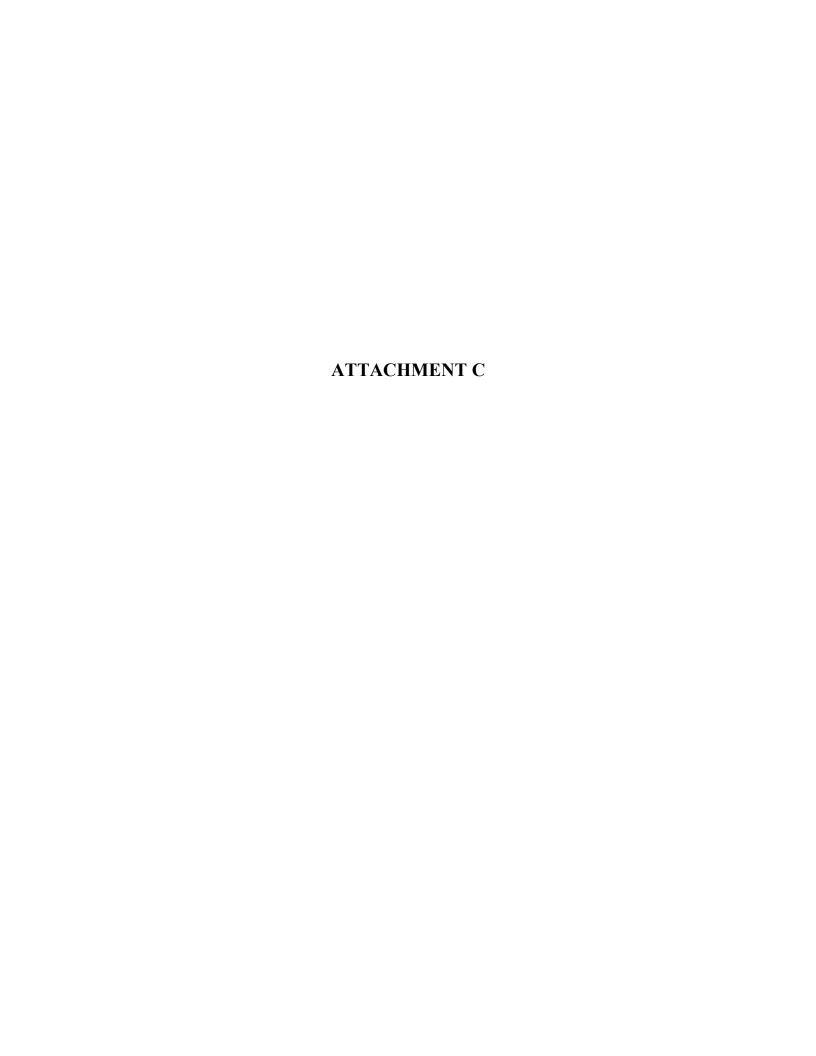
contract_end_date_year	contract_end_date_month	contract_end_date_day	buying_energy_capacity	multiplier		hybrid/pai	elcc type (f	start year	end year	hybrid stor	short durat	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	1 20
2031	6	30	EnergyCapacity	1	biomass_w	n/a	biomass_w	2014	2030	100%	100%	1.513355	1.548507	1.583658	1.597592	1.611526	1.589226	1.566927	0	1 336974	0	0)
2033	12		EnergyCapacity EnergyCapacity	1	aentherma	n/a	ponthermo	2014	2032	100%	100%	8 603574	8.884542	9.165511	1.310845	1.3222/8	1.303981	1.285684	1.311304	1.336924	0	0	2
2033	2		EnergyCapacity	1	biomass w	n/a	biomass w	2013	2032	100%	100%	3.864877	3.954648	4.044419	4.080004	4.115589	4.05864	4.001691	4.081434	4.161177	0	0)
2030	12	28	EnergyCapacity	1	in state w	n/a	in_state_w	2019	2030	100%	100%	0	0	0	0	0	0	0	0	0	0	0)
2037	9	13	EnergyCapacity	1	biogas	n/a	biogas	2018	2036	100%	100%	2.924747	2.988238	3.051728	3.063706	3.075684	3.03129	2.986897	3.058498	3.1301	3.201702	3.273303	3.344
2038	12		EnergyCapacity	1	utility pv	n/a	utility pv	2019	2038	100%	100%	13.05631	12.70809	0.116536	0.51701	8.67416	8.043484	7.412808	7.274247	7.135685	6.997123	0.858562	2 6
2037	2		EnergyCapacity	1	utility_pv	n/a	utility_pv	2017	2036	100%	100%	0.123102	0.119819	0.116536	0.09916	0.081785	0.075839	0.069892	0.068586	0.067279	0.065973	0.064666	0.06
2030	12	16	EnergyCapacity EnergyCapacity	1	utility_pv utility_pv	n/a	utility_pv utility_pv	2017	2033	100%	100%	9.947667	0.119819	9.417044	8.012964	6.608884	6 128369	5.647854	5.542283	5.436712	5.331142	5 225571	1 5
2036	10	5	EnergyCapacity	1	utility pv	n/a	utility pv	2017	2036	100%	100%	0.123102	0.119819	0.116536	0.09916	0.008384	0.075839	0.069892	0.068586	0.067279	0.065973	0.064666	0.06
2036	10	5	EnergyCapacity	1	utility pv	n/a	utility pv	2017	2036	100%	100%	0.123102	0.119819	0.116536	0.09916	0.081785	0.075839	0.069892	0.068586	0.067279	0.065973	0.064666	0.06
2033	4	13	EnergyCapacity	1	utility_pv	n/a	utility_pv	2018	2032	100%	100%	12.43458	12.10294	11.7713	10.0162	8.261105	7.660461	7.059817	6.927854	6.79589	0	0)
2040	12	9	EnergyCapacity	1	utility_pv	n/a	utility_pv	2021	2040	100%	100%	4.973834	4.841178	4.708522	4.006482	3.304442	3.064185	2.823927	2.771142	2.718356	2.665571	2.612785	5 2
2040	12		EnergyCapacity	1	utility_pv	n/a	utility_pv	2021	2040	100%	100%	2.486917	2.420589 6.051472	2.354261	2.003241	1.652221	1.532092	1.411963	1.385571	1.359178	1.332785	1.306393	3 1
2040	12		EnergyCapacity EnergyCapacity	1	utility_pv utility_pv	n/a	utility_pv utility_pv	2021	2040	100%	20070	6.217292	6.051472	5.885652	5.008102	4.130553	3.830231	3.529909	3.463927	3.397945	3.331963	3.265982	2
2032	10		EnergyCapacity EnergyCapacity	1	utility pv	n/a n/a	utility pv	2021	2040	100%		0.123102	0.119819	0.116536	0.09916	0.081785	0.075839	0.069892	0.068586	0.067279	3.331903	0.203902	2
2032	12	31		1	utility_pv	n/a	utility pv	2016	2032	100%	100%	3.730375	3.630883	3.531391	3.004861	2.478332	2.298138	2.117945	2.078356	2.038767	0	0)
2040	8	29	EnergyCapacity	1	utility pv	n/a	utility pv	2021	2039	100%	100%	0.123102	0.119819	0.116536	0.09916	0.081785	0.075839	0.069892	0.068586	0.067279	0.065973	0.064666	0.06
2040	8	29	EnergyCapacity	1	utility_pv	n/a	utility_pv	2021	2039	100%	100%	0.123102	0.119819	0.116536	0.09916	0.081785	0.075839	0.069892	0.068586	0.067279	0.065973	0.064666	0.06
2039	8	31	EnergyCapacity	1	utility pv	n/a	utility pv	2020	2038	100%	100%	0.123102	0.119819	0.116536	0.09916	0.081785	0.075839	0.069892	0.068586	0.067279	0.065973	0.064666	0.06
2039	8		EnergyCapacity	1	utility_pv	n/a	utility_pv	2020	2038	100%		0.123102	0.119819	0.116536	0.09916	0.081785	0.075839	0.069892	0.068586	0.067279	0.065973	0.064666	0.06
2039	8	31	EnergyCapacity	1	utility_pv	n/a	utility_pv	2020	2038	100%		0.123102	0.119819	0.116536	0.09916	0.081785	0.075839	0.069892	0.068586	0.067279	0.065973	0.064666	0.06
2041 2041	3	29	EnergyCapacity EnergyCapacity	1 4	utility_pv utility_pv	n/a n/a	utility_pv utility_pv	2021 2021	2040 2040	100% 100%	100% 100%	0.123102	0.119819	0.116536 0.116536	0.09916	0.081785	0.075839	0.069892	0.068586	0.067279	0.065973	0.064666	0.06
2040	9		EnergyCapacity	1	utility_pv	n/a	utility pv	2021	2039	100%	100%	0.120615	0.117399	0.114182	0.097157	0.080133	0.073839	0.06848	0.0672	0.06592	0.06464	0.06336	0.06
2038	12		EnergyCapacity	1	utility_pv	n/a	utility pv	2019	2038	100%	100%	0.123102	0.119819	0.116536	0.09916	0.081785	0.075839	0.069892	0.068586	0.067279	0.065973	0.064666	0.06
2038		30	EnergyCapacity	1	utility_pv	n/a	utility_pv	2019	2037	100%	100%	0.123102	0.119819	0.116536	0.09916	0.081785	0.075839	0.069892	0.068586	0.067279	0.065973	0.064666	0.06
2039	5	13	EnergyCapacity	1	utility_pv	n/a	utility_pv	2019	2038	100%	100%	0.012435	0.012103	0.011771	0.010016	0.008261	0.00766	0.00706	0.006928	0.006796	0.006664	0.006532	0.0
2040	4	30	EnergyCapacity	1	utility_pv	n/a	utility_pv	2015	2039	100%	100%	1.367804	1.331324	1.294843	1.101783	0.908722	0.842651	0.77658	0.762064	0.747548	0.733032	0.718516	5 0.
2040 2040	4		EnergyCapacity	1	utility pv	n/a	utility pv	2015	2039	100%	100%	1.49215	1.452353 0.119819	1.412557 0.116536	1.201945 0.09916	0.991333	0.919255	0.847178	0.831342	0.815507	0.799671	0.783836	0.06
2040	4		EnergyCapacity	- 1	utility_pv utility_pv	n/a	utility_pv	2018	2039	100%	100%	1.05694	1.02875	1.000561	0.09916	0.702194	0.075839	0.600084	0.068586	0.06/2/9	0.566434	0.064666	7 0.06.
2037	12	21	EnergyCapacity EnergyCapacity	1	utility_pv utility_pv	n/a n/a	utility_pv utility_pv	2018	2037	100%		0.248692	0.242059	0.235426	0.200324	0.702194	0.051139	0.141196	0.388557	0.377631	0.300434	0.555217	
2036	7	4	EnergyCapacity	1	small_hydr	n/a	small_hydr	2022	2035	100%	100%	3.862597	3.963558	4.064519	3.988405	3.912291	4.026608	4.140925	3.966288	3.791651	3.617015	3.442378	3.267
2041	3	29	EnergyCapacity	1	utility pv	n/a	utility pv	2021	2040	100%	100%	0.123102	0.119819	0.116536	0.09916	0.081785	0.075839	0.069892	0.068586	0.067279	0.065973	0.064666	0.06
2041	9		EnergyCapacity	1	utility_pv	n/a	utility_pv	2022	2040	100%	100%	0.621729	0.605147	0.588565	0.50081	0.413055	0.383023	0.352991	0.346393	0.339795	0.333196	0.326598	3 0
2042	5	20	EnergyCapacity	1	utility_pv	n/a	utility_pv	2022	2041	100%		0.373038	0.363088	0.353139	0.300486	0.247833	0.229814	0.211795	0.207836	0.203877	0.199918	0.195959	0.
2041	11		EnergyCapacity	1	in_state_w	n/a	in_state_w	2023	2042 2041	100%	100%	0.43344	0.119819	0.110000	0.0004	0.00470	0.075839	0.05000	0.00000	0.003355	0.00000	0.00446	0.06
2041	11	20	EnergyCapacity EnergyCapacity	1	utility_pv utility_pv	n/a	utility_pv	2022	2041	100%	100%	0.123102	0.119819	0.116536	0.09916	0.081785	0.075839	0.069892	0.068586	0.067279	0.065973	0.064666	7 0.06
2041	11		EnergyCapacity EnergyCapacity	1	utility no	n/a	utility no	2022	2040	100%	100%	0.119372	0.116188	0.110356	0.095902	0.077448	0.07354	0.067774	0.066507	0.065741	0.063974	0.062707	7 0.06
2042	11			-	7,50	- /-	utility pv	2022		100%	100%	0.621729	0.605147	0.588565	0.50081	0.073307	0.383023	0.352991	0.346393			0.326598	8 0
	11	29	EnergyCapacity		utility by			2023	2042	100%	100%	0.021/29		U.288202					0.346393	0.339795	0.333196		
2041	11 10	31	EnergyCapacity EnergyCapacity	1	utility_pv utility_pv	n/a n/a	utility_pv utility_pv	2023	2042	100%	100%	0.021729	0.119819	0.116536	0.09916	0.413033	0.075839	0.069892	0.346393	0.339795	0.333196	0.064666	
2032	10	31 15	EnergyCapacity EnergyCapacity	1	utility_pv biomass_w	n/a n/a n/a		2022		100% 100%	100% 100%												
2032 2024	10 7 12	31 15 31	EnergyCapacity EnergyCapacity EnergyOnly	1 1 0	utility_pv biomass_w utility_pv	n/a n/a n/a n/a	utility_pv biomass_w utility_pv	2022 2023 2022	2041 2031 2024	100% 100% 100%	100% 100% 100%	0.123102	0.119819		0.09916	0.081785	0.075839	0.069892	0.068586				0.06
2032 2024 2024	10 7 12 12	31 15 31 31	EnergyCapacity EnergyCapacity EnergyOnly EnergyOnly	1 1 0 0	utility_pv biomass_w utility_pv utility_pv	n/a n/a n/a n/a n/a	utility_pv biomass_w utility_pv utility_pv	2022 2023 2022 2022	2041 2031 2024 2024	100% 100% 100% 100%	100% 100% 100% 100%	0.123102	0.119819		0.09916	0.081785	0.075839	0.069892	0.068586				
2032 2024 2024 2024	10 7 12	31 15 31 31 31	EnergyCapacity EnergyCapacity EnergyOnly EnergyOnly EnergyOnly	1 1 0 0 0	utility_pv biomass_w utility_pv utility_pv utility_pv	n/a n/a n/a n/a n/a	utility_pv biomass w utility_pv utility_pv utility_pv	2022 2023 2022 2022 2022	2041 2031 2024 2024 2024	100% 100% 100% 100% 100%	100% 100% 100% 100% 100%	0.123102	0.119819 0.790135 0 0	0.116536 0.808072 0 0	0.09916 0.815181 0 0	0.081785 0.822291 0 0	0.075839 0.810913 0 0	0.069892 0.799535 0 0	0.068586 0.815467 0 0	0.067279 0 0 0	0.065973 0 0 0 0	0.064666 0 0 0	0.063
2032 2024 2024	10 7 12 12	31 15 31 31 31 29	EnergyCapacity EnergyCapacity EnergyOnly EnergyOnly EnergyCapacity EnergyCapacity	1 1 0 0 0	utility_pv biomass_w utility_pv utility_pv utility_pv utility_pv	n/a n/a n/a n/a n/a n/a n/a 4hr_batte	utility_pv biomass_w utility_pv utility_pv	2022 2023 2022 2022	2041 2031 2024 2024 2024 2039	100% 100% 100% 100%	100% 100% 100% 100%	0.123102	0.119819		0.09916	0.081785	0.075839	0.069892	0.068586				
2032 2024 2024 2024 2040	10 7 12 12	31 15 31 31 31 29	EnergyCapacity EnergyCapacity EnergyOnly EnergyOnly EnergyCapacity EnergyCapacity EnergyCapacity	1 1 0 0 0 1 1	utility_pv biomass_w utility_pv utility_pv utility_pv	n/a n/a n/a n/a n/a n/a n/a 4hr_battei n/a	utility_pv biomass_w utility_pv utility_pv utility_pv hybrid	2022 2023 2022 2022 2022 2022 2025	2041 2031 2024 2024 2024	100% 100% 100% 100% 100% 100%	100% 100% 100% 100% 100% 100%	0.123102 0.772199 0 0 0	0.119819 0.790135 0 0 0 91.59094	0.116536 0.808072 0 0 0 92.1793	0.09916 0.815181 0 0 0 87.7562	0.081785 0.822291 0 0 0 83.33311	0.075839 0.810913 0 0 0 86.13646	0.069892 0.799535 0 0 0 88.93982	0.068586 0.815467 0 0 0 79.81025	0.067279 0 0 0 0 0 70.68069	0.065973 0 0 0 0 0 61.55113	0.064666 0 0 0 0 0 52.42156	0.06
2032 2024 2024 2024 2040 2040	10 7 12 12 12 2 2	31 15 31 31 31 29 21	EnergyCapacity EnergyCapacity EnergyOnly EnergyOnly EnergyCapacity EnergyCapacity	1 1 0 0 0 1 1 1	utility_pv biomass_w utility_pv utility_pv utility_pv utility_pv utility_pv		utility_pv biomass_w utility_pv utility_pv utility_pv thybrid hybrid	2022 2023 2022 2022 2022 2022 2025	2041 2031 2024 2024 2024 2039	100% 100% 100% 100% 100% 100%	100% 100% 100% 100% 100% 100%	0.123102 0.772199 0 0 0	0.119819 0.790135 0 0 0 91.59094	0.116536 0.808072 0 0 0 92.1793	0.09916 0.815181 0 0 0 87.7562	0.081785 0.822291 0 0 0 83.33311 0.818022	0.075839 0.810913 0 0 0 86.13646	0.069892 0.799535 0 0 0 88.93982	0.068586 0.815467 0 0 0 79.81025	0.067279 0 0 0 0 0 70.68069	0.065973 0 0 0 0 0 61.55113	0.064666 0 0 0 0 0 52.42156	0 0.063 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0
2032 2024 2024 2024 2040 2044 2043 2043	10 7 12 12 12 2 2 2	31 31 31 31 31 29 29 21 30 30	EnergyCapacity EnergyCapacity EnergyOnly EnergyOnly EnergyOnly EnergyCapacity EnergyCapacity EnergyCapacity EnergyCapacity EnergyCapacity EnergyCapacity EnergyCapacity EnergyCapacity	1 1 1 0 0 0 1 1 1 1	utility pv biomass_w utility pv utility pv utility pv utility pv utility pv utility pv utility pv utility pv utility pv		utility_pv biomass_w utility_pv utility_pv utility_pv thybrid hybrid	2022 2023 2022 2022 2022 2025 2024 2024 2024 2024	2041 2031 2024 2024 2024 2039 2043 2043 2043 2043	100% 100% 100% 100% 100% 100% 100% 100%	100% 100% 100% 100% 100% 100% 100% 100%	0.123102 0.772199 0 0 0 0 0 0.931892 0.029843	0.119819 0.790135 0 0 91.59094 0.933259 0.029047	0.116536 0.808072 0 0 0 92.1793 0.934626 0.028251	0.09916 0.815181 0 0 0 87.7562 0.876324 0.024039	0.081785 0.822291 0 0 0 83.33311 0.818022 0.019827	0.075839 0.810913 0 0 0 86.13646 0.835609 0.018385	0.069892 0.799535 0 0 0 88.93982 0.853196 0.016944	0.068586 0.815467 0 0 79.81025 0.772317 0.016627 0.304826	0.067279 0 0 0 0 0 70.68069	0.065973 0 0 0 0 61.55113 0.610559 0.015993 0.293213	0.064666 0 0 0 0 0 52.42156	0.063 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0
2032 2024 2024 2024 2040 2044 2043 2043	100 7 7 122 122 122 2 2 2 122 122 123 8 8 9 9	31 155 31 31 31 29 21 30 30 27	EnergyCapacity EnergyCapacity EnergyOnly EnergyOnly EnergyOnly EnergyOnly EnergyCapacity EnergyCapacity EnergyCapacity EnergyCapacity EnergyCapacity EnergyCapacity EnergyCapacity CapacityOnly	1 1 0 0 0 1 1 1 1 1	utility pv biomass_w utility pv utility pv utility pv utility pv utility pv utility pv utility pv utility pv utility pv utility pv gas_ct	4hr_battei n/a n/a 4hr_battei n/a	utility pv biomass w utility pv utility pv utility pv hybrid hybrid utility pv utility pv hybrid gas_ct	2022 2023 2022 2022 2022 2025 2025 2024 2024 2024	2041 2031 2024 2024 2024 2039 2043 2043 2043 2043 2043 2025	100% 100% 100% 100% 100% 100% 100% 100%	100% 100% 100% 100% 100% 100% 100% 100%	0.123102 0.772199 0 0 0 0 0 0.931892 0.029843 0.547122 64.91804 65.50175	0.119819 0.790135 0 0 91.59094 0.933259 0.029047 0.53253 65.15324 67.2924	0.116536 0.808072 0 0 0 92.1793 0.934626 0.028251 0.517937 65.38843	0.09916 0.815181 0 0 0 87.7562 0.876324 0.024039 0.440713 61.71783	0.081785 0.822291 0 0 0 83.33311 0.818022 0.019827 0.363489 58.04722	0.075839 0.810913 0 0 0 86.13646 0.835609 0.018385 0.33706 59.60651	0.069892 0.799535 0 0 0 88.93982 0.853196 0.016944 0.310632 61.1658	0.068586 0.815467 0 0 79.81025 0.772317 0.016627 0.304826	0.067279 0 0 0 0 70.68069 0.691438 0.01631 0.299019	0.065973 0 0 0 0 61.55113 0.610559 0.015993 0.293213	0.064666 0 0 0 0 52.42156 0.529679 0.015677 0.287406	5 0.06: 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0
2032 2024 2024 2024 2024 2040 2043 2043	10 7 122 12 2 2 2 2 12 12 12 12 12 12 12 12	31 155 31 31 31 29 21 30 30 30 27 30	EnergyCapacity EnergyCapacity EnergyCapacity EnergyCally EnergyCally EnergyCapacity EnergyCapacity EnergyCapacity EnergyCapacity EnergyCapacity EnergyCapacity EnergyCapacity EnergyCapacity CapacityOnly CapacityOnly CapacityOnly	1 1 1 0 0 0 1 1 1 1 1 1 1	utility pv biomass w utility pv utility pv utility pv utility pv utility pv utility pv utility pv utility pv utility pv gas ct gas cc	4hr_battei n/a n/a	utility pv biomass w utility pv utility pv utility pv hybrid hybrid utility pv utility pv utility pv utility pv utility pv gas ct gas cc	2022 2023 2022 2022 2022 2022 2025 2024 2024 2024	2041 2031 2024 2024 2024 2039 2043 2043 2043 2043 2037 2025 2030	100% 100% 100% 100% 100% 100% 100% 100%	100% 100% 100% 100% 100% 100% 100% 100%	0.123102 0.772199 0 0 0 0 0.931892 0.029843 0.029843 64.91804 65.50175 42.11837	0.119819 0.790135 0 0 0 91.59094 0.933259 0.029047 0.53253 65.15324	0.116536 0.808072 0 0 0 92.1793 0.934626 0.028251 0.517937	0.09916 0.815181 0 0 87.7562 0.876324 0.024039 0.440713	0.081785 0.822291 0 0 0 83.33311 0.818022 0.019827 0.363489	0.075839 0.810913 0 0 0 86.13646 0.835609 0.018385 0.33706	0.069892 0.799535 0 0 0 88.93982 0.853196 0.016944 0.310632	0.068586 0.815467 0 0 79.81025 0.772317 0.016627 0.304826	0.067279 0 0 0 0 70.68069 0.691438 0.01631 0.299019	0.065973 0 0 0 0 61.55113 0.610559 0.015993 0.293213	0.064666 0 0 0 0 52.42156 0.529679 0.015677 0.287406	5 0.06. 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0
2032 2024 2024 2024 2040 2044 2043 2038 2038 2030 2030	100 7 7 122 123 124 125 127 129 120 120 121 120 121 121 121 121 121 121	31 155 31 31 31 29 29 21 21 21 30 30 27 30 31 31	EnergyCapacity EnergyCapacity EnergyCapacity EnergyCaly EnergyCaly EnergyCaly EnergyCapacity EnergyCapacity EnergyCapacity EnergyCapacity EnergyCapacity EnergyCapacity CapacityCaly CapacityCaly CapacityCaly CapacityCaly	1 1 1 0 0 0 1 1 1 1 1 1 1 1	utility pv biomass w utility pv utility nv utility nv u	4hr_battei n/a n/a 4hr_battei n/a	utility pv biomass w utility pv utility pv utility pv hybrid hybrid utility pv utility pv hybrid gas ct gas cc	2022 2023 2022 2022 2022 2022 2025 2024 2024 2024	2041 2031 2024 2024 2024 2039 2043 2043 2043 2043 2037 2025 2030 2024	100% 100% 100% 100% 100% 100% 100% 100%	100% 100% 100% 100% 100% 100% 100% 100%	0.123102 0.772199 0 0 0 0 0 0.931892 0.029843 0.547122 64.91804 65.50175	0.119819 0.790135 0 0 91.59094 0.933259 0.029047 0.53253 65.15324 67.2924	0.116536 0.808072 0 0 0 92.1793 0.934626 0.028251 0.517937 65.38843	0.09916 0.815181 0 0 0 87.7562 0.876324 0.024039 0.440713 61.71783	0.081785 0.822291 0 0 0 83.33311 0.818022 0.019827 0.363489 58.04722	0.075839 0.810913 0 0 0 86.13646 0.835609 0.018385 0.33706 59.60651	0.069892 0.799535 0 0 0 88.93982 0.853196 0.016944 0.310632 61.1658	0.068586 0.815467 0 0 79.81025 0.772317 0.016627 0.304826	0.067279 0 0 0 0 70.68069 0.691438 0.01631 0.299019	0.065973 0 0 0 0 61.55113 0.610559 0.015993 0.293213	0.064666 0 0 0 0 52.42156 0.529679 0.015677 0.287406	5 0.06: 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0
2032 2024 2024 2024 2040 2040 2043 2033 203	100 77 122 122 122 122 122 122 122 122 122	31 15 31 31 31 29 21 30 30 30 27 27 30 31 31	EnergyCapacity EnergyCapacity EnergyOnly EnergyOnly EnergyOnly EnergyOnly EnergyCapacity EnergyCapacity EnergyCapacity EnergyCapacity EnergyCapacity EnergyCapacity EnergyCapacity EnergyCapacity CapacityOnly CapacityOnly CapacityOnly CapacityOnly	1 1 0 0 0 1 1 1 1 1 1 1	utility pv biomass w utility pv utility pv utility pv utility pv utility pv utility pv utility pv utility pv utility pv qas ct qas cc gas cc	4hr_battei n/a n/a 4hr_battei n/a	utility pv biomass w utility pv utility pv utility pv hybrid hybrid utility pv utility pv hybrid gas ct gas ct gas cc	2022 2023 2023 2022 2022 2025 2024 2024 2024 2024 2024	2041 2031 2024 2024 2024 2039 2043 2043 2043 2043 2037 2025 2030	100% 100% 100% 100% 100% 100% 100% 100%	100% 100% 100% 100% 100% 100% 100% 100%	0.123102 0.772199 0 0 0 0 0.931892 0.029843 0.547122 64.91804 65.50175 42.11837 25.79289	0.119819 0.790135 0 0 91.59094 0.933259 0.029047 0.53253 65.15324 42.60402 0	0.116536 0.808072 0 0 92.1793 0.934626 0.028251 0.517937 65.38843 0 43.08968	0.09916 0.815181 0 0 87.7562 0.876324 0.024039 0.440713 61.71783 0 43.23086 0	0.081785 0.822291 0 0 83.33311 0.818022 0.019827 0.363489 58.04722 0 43.37203	0.075839 0.810913 0 0 0 86.13646 0.835609 0.018385 0.33706 59.60651	0.069892 0.799535 0 0 0 88.93982 0.853196 0.016944 0.310632 61.1658	0.068586 0.815467 0 0 79.81025 0.772317 0.016627 0.304826	0.067279 0 0 0 0 70.68069 0.691438 0.01631 0.299019	0.065973 0 0 0 0 61.55113 0.610559 0.015993 0.293213	0.064666 0 0 0 0 52.42156 0.529679 0.015677 0.287406	5 0.06: 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0
2032 2024 2024 2024 2040 2044 2043 2043	100 7 7 122 123 124 125 127 127 128 129 129 120 120 121 121 121 121 121 121 121 121	31 155 31 31 31 29 29 27 30 30 27 30 31 31 31	EnergyCapacity EnergyCapacity EnergyCapacity EnergyChly EnergyChly EnergyChly EnergyChly EnergyCapacity EnergyCapacity EnergyCapacity EnergyCapacity EnergyCapacity ChapacityChly CapacityChly CapacityChly CapacityChly CapacityChly CapacityChly CapacityChly CapacityChly CapacityChly CapacityChly	1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	utility pv biomass w utility pv qas ct qas cc qas cc qas cc qas cc	4hr_battei n/a n/a 4hr_battei n/a	utility pv biomass w utility pv utility pv hybrid hybrid utility pv utility pv hybrid gas ct gas cc gas cc gas cc gas cc gas cc	2022 2023 2022 2022 2022 2025 2024 2024 2024 2024	2041 2031 2024 2024 2024 2039 2043 2043 2043 2043 2037 2025 2030 2024	100% 100% 100% 100% 100% 100% 100% 100%	100% 100% 100% 100% 100% 100% 100% 100%	0.123102 0.772199 0 0 0 0 0 0.931892 0.029843 0.547122 64.91804 65.50175 42.11837 25.79289 0 21.10139	0.119819 0.790135 0 0 91.59094 0.933259 0.029047 0.53253 65.15324 67.2924 42.60402 0 0	0.116536 0.808072 0 0 92.1793 0.934626 0.028251 0.517937 65.38843 0 43.08968 0 0 21.58802	0.09916 0.815181 0 0 87.7562 0.876324 0.024039 0.440713 61.71783 0 43.23086 0 21.65875	0.081785 0.822291 0 0 0 83.33311 0.818022 0.019827 0.363489 58.04722	0.075839 0.810913 0 0 0 86.13646 0.835609 0.018385 0.33706 59.60651	0.069892 0.799535 0 0 88.93982 0.853196 0.016944 0.310632 61.1658 0 42.41238 0	0.068586 0.815467 0 0 79.81025 0.772317 0.016627 0.304826	0.067279 0 0 0 0 70.68069 0.691438 0.01631 0.299019	0.065973 0 0 0 0 61.55113 0.610559 0.015993 0.293213	0.064666 0 0 0 0 52.42156 0.529679 0.015677 0.287406	5 0.06. 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0
2032 2024 2024 2024 2040 2040 2043 2043	100 77 122 122 122 122 122 122 122 122 122	31 15 31 31 31 29 21 30 30 27 31 31 31 31	EnergyCapacity EnergyCapacity EnergyOnly EnergyOnly EnergyOnly EnergyOnly EnergyCapacity EnergyCapacity EnergyCapacity EnergyCapacity EnergyCapacity EnergyCapacity EnergyCapacity EnergyCapacity CapacityOnly CapacityOnly CapacityOnly CapacityOnly	1 1 1 0 0 0 0 1 1 1 1 1 1 1 1 1 1 1 1 1	utility pv biomass w utility pv utility pv utility pv utility pv utility pv utility pv utility pv utility pv utility pv qas ct qas cc gas cc	4hr_battei n/a n/a 4hr_battei n/a	utility pv biomass w utility pv utility pv utility pv hybrid hybrid utility pv utility pv hybrid gas ct gas ct gas cc	2022 2023 2023 2022 2022 2025 2024 2024 2024 2024 2024	2041 2031 2024 2024 2039 2043 2043 2043 2037 2025 2030 2024 2023 2022 2023	100% 100% 100% 100% 100% 100% 100% 100%	100% 100% 100% 100% 100% 100% 100% 100%	0.123102 0.772199 0 0 0 0 0.931892 0.029843 0.547122 64.91804 65.50175 42.11837 25.79289	0.119819 0.790135 0 0 91.59094 0.933259 0.029047 0.53253 65.15324 42.60402 0	0.116536 0.808072 0 0 92.1793 0.934626 0.028251 0.517937 65.38843 0 43.08968	0.09916 0.815181 0 0 87.7562 0.876324 0.024039 0.440713 61.71783 0 43.23086 0	0.081785 0.822291 0 0 83.33311 0.818022 0.019827 0.363489 58.04722 0 43.37203 0 0 21.72947	0.075839 0.810913 0 0 86.13646 0.835609 0.018385 0.33706 59.60651 0 42.8922 0	0.069892 0.799535 0 0 0 88.93982 0.853196 0.016944 0.310632 61.1658	0.068586 0.815467 0 0 79.81025 0.772317 0.016627 0.304826	0.067279 0 0 0 0 70.68069 0.691438 0.01631 0.299019	0.065973 0 0 0 0 61.55113 0.610559 0.015993 0.293213	0.064666 0 0 0 0 52.42156 0.529679 0.015677 0.287406	5 0.06. 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0
2632 2 2024 2024 2024 2024 2024 2043 2043 204	10 77 12 12 12 12 12 12 12 12 12 12 12 12 12	31 15 31 31 31 31 30 30 27 30 31 31 31 31 31 31	EnergyCapacity EnergyCapacity EnergyOnly EnergyOnly EnergyOnly EnergyConly EnergyCopacity EnergyCapacity EnergyCapacity EnergyCapacity EnergyCapacity EnergyCapacity EnergyCapacity EnergyCapacity CapacityOnly	1 1 1 0 0 0 0 1 1 1 1 1 1 1 1 1 1 1 1 1	utility pv biomass w utility pv gas_ct gas_cc gas_cc gas_cc gas_cc gas_cc gas_cc demand ri	4hr_battei n/a n/a 4hr_battei n/a	utility pv biomass w utility pv utility pv utility pv hybrid hybrid hybrid dutility pv utility pv qas_ct qas_cc qas_cc qas_cc qas_cc qas_cc demand n	2022 2022 2022 2022 2022 2025 2024 2024 2024 2023 2020 2023 2021 2022 2023 2023 2023 2023 2023 2023	2041 2031 2024 2024 2024 2039 2043 2043 2043 2025 2030 2024 2023 2028 2030 2028 2030 2028	100% 100% 100% 100% 100% 100% 100% 100%	100% 100% 100% 100% 100% 100% 100% 100%	0.123102 0.772199 0 0 0 0 0 0.931892 0.029843 0.547122 64.91804 65.50175 42.11837 25.79289 0 21.10139 12.66083 12.66083 12.66083	0.119819 0.790135 0 0 0 0 0 9.1.59094 0.933259 0.029047 0.53253 65.15324 42.60402 0 0 21.3447 12.80682 12.80682 12.80682	0.116536 0.808072 0 0 0 92.1793 0.934626 0.028251 0.517937 65.38843 0 43.08968 0 0 21.58802 12.95281 12.95281	0.09916 0.815181 0 0 0 87.7562 0.876324 0.024039 0.440713 61.7183 0 43.23086 0 0 21.65875 12.99525 12.99525	0.081785 0.822291 0 0 0 0 83.33331 0.818022 0.019827 0.363489 58.04722 0.43.37203 0 0 21.72947 13.03768	0.075839 0.810913 0 0 0 0 0 85.13646 0.835609 0.018385 0.33706 59.60551 0 42.89322 0 0 12.89345 12.89345	0.069892 0.799535 0 0 0 0 88.93982 0.853196 0.016944 0.310632 61.1658 0 0 42.41238 0 0 12.74921 12.74921	0.068586 0.815467 0 0 79.81025 0.772317 0.016627 0.304826 55.15264 0 0 0 0	0.067279 0 0 0 0 0 0 0.06311 0.299019 49.13948 0 0 0 0 0 0 0 0	0.065973 0 0 0 0 61.55113 0.610559 0.015993 0.293213 43.12632 0 0 0 0 0	0.064666 0 0 0 0 52.42156 0.529679 0.015677 0.287406	5 0.06. 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0
2032 2024 2024 2024 2040 2043 2043 2043	10 7 12 12 12 2 2 2 12 12 8 8 9 12 12 12 12 12 12 12 12 12 12 12 12 12	31 15 31 31 31 29 21 30 30 30 31 31 31 31 31 31 31	EnergyCapacity EnergyCapacity EnergyCapacity EnergyOnly EnergyOnly EnergyOnly EnergyCapacity EnergyCapacity EnergyCapacity EnergyCapacity EnergyCapacity EnergyCapacity EnergyCapacity EnergyCapacity EnergyCapacityOnly CapacityOnly	1 1 1 1 0 0 0 0 1 1 1 1 1 1 1 1 1 1 1 1	utility pv biomass w utility pv gas_cc	4hr_battei n/a n/a 4hr_battei n/a	utility pv biomass w utility pv utility pv utility, pv hybrid hybrid utility pv utility pv utility pv utility pv utility pv hybrid gas ct gas cc	2022 2023 2022 2022 2022 2025 2026 2024 2024 2024 2024 2023 2020 2023 2020 2023 2020 2023 2021 2022 2023 2023	2041 2031 2024 2024 2024 2023 2043 2043 2043 2043	100% 100% 100% 100% 100% 100% 100% 100%	100% 100% 100% 100% 100% 100% 100% 100%	0.123102 0.772199 0 0 0 0 0 0 0 0 0 0 0 0 0	0.119819 0.790135 0 0 0 91.59084 0.933259 0.029047 0.53253 65.15324 67.2924 42.604020 0 21.3447 12.80682 12.80682	0.116536 0.808072 0 0 0 92.1793 0.934626 0.028251 0.517937 65.38843 0 43.08968 0 0 21.58802 12.95281	0.09916 0.815181 0 0 87.7562 0.876324 0.024039 0.440713 61.71783 0 43.23086 0 0 21.65875	0.081785 0.822291 0 0 0.83.33311 0.818022 0.019827 0.363489 58.04722 0 43.37203 0 0 21.72947 13.03768	0.075839 0.810913 0 0 0 86.13646 0.835609 0.018385 0.33706 59.60651 0 42.8922 0 0 12.89345	0.069892 0.799535 0 0 0 88.93982 0.853196 0.016944 0.310632 61.1658 0 42.41238	0.068586 0.815467 0 0 79.81025 0.772317 0.016627 0.304826 55.15264 0 0 0 0	0.067279 0 0 0 0 70.68069 0.691438 0.01631 0.299019	0.065973 0 0 0 0 61.55113 0.610559 0.015993 0.293213	0.064666 0 0 0 0 52.42156 0.529679 0.015677 0.287406	5 0.06. 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0
2032 2024 2024 2024 2040 2044 2043 2033 203	100 170 170 170 170 170 170 170 170 170	31 155 311 311 311 311 311 300 27 300 311 311 311 311 311 311 311	EnergyCapacity EnergyCapacity EnergyOnly EnergyOnly EnergyOnly EnergyOnly EnergyCapacity EnergyCapacity EnergyCapacity EnergyCapacity EnergyCapacity EnergyCapacity (apacityOnly CapacityOnly	1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	utility pv biomass w utility pv qas_ct qas_cc qas_cc qas_cc qas_cc qas_cc qas_cc qas_cc hydro	4hr_battei n/a n/a 4hr_battei n/a	utility pv biomass w utility pv tybrid utility pv tybrid ags ct gas cc gas cc gas cc gas cc gas cc gas cc fomand n shr batter hydro	2022 2023 2022 2022 2022 2025 2024 2024 2024 2024 2024 2023 2020 2023 2021 2022 2023 2023 2024 2025 2027	2041 2031 2024 2024 2024 2024 2043 2043 2043 2043	100% 100% 100% 100% 100% 100% 100% 100%	100% 100% 100% 100% 100% 100% 100% 100%	0.123102 0.772199 0 0 0 0 0 0.931892 0.029843 0.547122 64.91804 65.50175 42.11837 25.79289 0 21.10139 12.66083 12.66083 12.66083	0.119819 0.790135 0 0 0 0 0 9.1.59094 0.933259 0.029047 0.53253 65.15324 42.60402 0 0 21.3447 12.80682 12.80682 12.80682	0.116536 0.808072 0 0 0 92.1793 0.934626 0.028251 0.517937 65.38843 0 43.08968 0 0 21.58802 12.95281 12.95281	0.09916 0.815181 0 0 0 87.7562 0.876324 0.024039 0.440713 61.7183 0 43.23086 0 0 21.65875 12.99525 12.99525	0.081785 0.822291 0 0 0 0 83.33331 0.818022 0.019827 0.363489 58.04722 0.43.37203 0 0 21.72947 13.03768	0.075839 0.810913 0 0 0 0 0 85.13646 0.835609 0.018385 0.33706 59.60551 0 42.89322 0 0 12.89345 12.89345	0.069892 0.799535 0 0 0 0 88.93982 0.853196 0.016944 0.310632 61.1658 0 0 42.41238 0 0 12.74921 12.74921	0.068586 0.815467 0 0 79.81025 0.772317 0.016627 0.304826 55.15264 0 0 0 0	0.067279 0 0 0 0 0 0 0.06311 0.299019 49.13948 0 0 0 0 0 0 0 0	0.065973 0 0 0 0 61.55113 0.610559 0.015993 0.293213 43.12632 0 0 0 0 0	0.064666 0 0 0 0 52.42156 0.529679 0.015677 0.287406	5 0.06: 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0
2032 2024 2024 2024 2040 2043 2043 2043	100 17 122 122 2 2 2 127 129 120 120 120 121 121 121 121 122 122 122	31 15 31 31 31 31 31 30 30 30 30 31 31 31 31 31 31 31 31 31 31	EnergyCapacity EnergyCapacity EnergyCapacity EnergyOnly EnergyOnly EnergyCapacity EnergyCapacity EnergyCapacity EnergyCapacity EnergyCapacity EnergyCapacity EnergyCapacity EnergyCapacity EnergyCapacity CapacityOnly EnergyOnly EnergyOnly EnergyOnly EnergyOnly EnergyOnly EnergyOnly	1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	utility pu biomass w utility pu utility pu utility, pu	4hr_battei n/a n/a 4hr_battei n/a	utility, pv biomass w utility pv utility, pv utility, pv utility, pv hybrid hybrid utility, pv hybrid gas_ct gas_cc gas_cc gas_cc gas_cc demand n hybrio hybrio hybrid utility, pv hybrid	2022 2023 2022 2022 2022 2025 2024 2024 2024 2023 2020 2020 2023 2021 2022 2023 2021 2022 2023 2023	2041 2031 2024 2024 2039 2043 2043 2043 2043 2037 2025 2030 2024 2030 2030 2030 2030 2033 2024 2033 2030 2030	100% 100% 100% 100% 100% 100% 100% 100%	100% 100% 100% 100% 100% 100% 100% 100%	0.123102 0.772199 0 0 0 0 0 0.931892 0.029843 0.547122 64.91804 65.50175 42.11837 25.79289 0 21.10139 12.66083 12.66083 12.66083	0.119819 0.790135 0 0 0 0 0 9.1.59094 0.933259 0.029047 0.53253 65.15324 42.60402 0 0 21.3447 12.80682 12.80682 12.80682	0.116536 0.808072 0 0 0 92.1793 0.934626 0.028251 0.517937 65.38843 0 43.08968 0 0 21.58802 12.95281 12.95281	0.09916 0.815181 0 0 0 87.7562 0.876324 0.024039 0.440713 61.7183 0 43.23086 0 0 21.65875 12.99525 12.99525	0.081785 0.822291 0 0 0 0 83.33331 0.818022 0.019827 0.363489 58.04722 0 43.37203 0 0 21.72947 13.03768	0.075839 0.810913 0 0 0 0 0 85.13646 0.835609 0.018385 0.33706 59.60551 0 42.89322 0 0 12.89345 12.89345	0.069892 0.799535 0 0 0 0 88.93982 0.853196 0.016944 0.310632 61.1658 0 0 42.41238 0 0 12.74921 12.74921	0.068586 0.815467 0 0 79.81025 0.772317 0.016627 0.304826 55.15264 0 0 0 0	0.067279 0 0 0 0 0 0 0.06311 0.299019 49.13948 0 0 0 0 0 0 0 0	0.065973 0 0 0 0 61.55113 0.610559 0.015993 0.293213 43.12632 0 0 0 0 0	0.064666 0 0 0 0 52.42156 0.529679 0.015677 0.287406	5 0.06. 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0
2032 2024 2024 2024 2040 2044 2043 2043	100 77 122 122 122 122 122 122 122 122 122	31 155 311 311 292 211 300 300 27 30 31 31 31 31 31 31 31 31 31 31	EnergyCapacity EnergyCapacity EnergyCapacity EnergyChly EnergyChly EnergyChly EnergyChly EnergyChly EnergyCapacity EnergyCapacity EnergyCapacity EnergyCapacity EnergyCapacity (EnergyCapacity EnergyCapacity (EnergyCapacity CapacityChly CapacityOnly EnergyChly	1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	utility pu biomass wu utility pu gas ct gas cc gas cc gas cc gas cc gas cc demand r 4hr batter hydro hydro hydro	4hr_battei n/a n/a 4hr_battei n/a	utility, pv biomass, w utility, pv utility, pv utility, pv hybrid hybrid hybrid utility, pv hybrid gas, ct gas, cc hydro hydro hydro hydro hydro hydro	2022 2023 2022 2022 2022 2022 2024 2024 2024 2023 2023 2023 2023 2023 2023 2023 2023 2023 2023 2023 2023 2024 2026 2027 2027 2028 2029 2029 2020 2020 2020 2021 2021 2022 2023 2024 2026 2027 2028 2029	2041 2031 2024 2024 2039 2043 2043 2043 2043 2043 2025 2030 2024 2023 2024 2030 2030 2030 2042 2030 2030	100% 100% 100% 100% 100% 100% 100% 100%	100% 100% 100% 100% 100% 100% 100% 100%	0.123102 0.772199 0 0 0 0 0 0.931892 0.029843 0.547122 64.91804 65.50175 42.11837 25.79289 0 21.10139 12.66083 12.66083 12.66083	0.119819 0.790135 0 0 91.59094 0.933259 0.029047 0.53253 65.15324 67.2924 42.60402 0 0 21.3447 12.80682 12.80682 13.90682 15.95682 15.95682 15.95682 0 0 0 0 0 0 0 0 0 0 0 0 0	0.116536 0.808072 0 0 0 0 92.1793 0.934626 0.028251 0.517937 65.38843 0 0 21.58802 21.58802 12.95281 0 0 0.02851 0.02851 0 0 0.02851 0 0 0.02851 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	0.09916 0.815181 0 0 0 87.7562 0.876324 0.024039 0.440713 61.7183 0 43.23086 0 0 21.65875 12.99525 12.99525	0.081785 0.822291 0 0 0 0 83.33331 0.818022 0.019827 0.363489 58.04722 0 43.37203 0 0 21.72947 13.03768	0.075839 0.810913 0 0 0 0 0 85.13646 0.835609 0.018385 0.33706 59.60551 0 42.89322 0 0 12.89345 12.89345	0.069892 0.799535 0 0 0 88.93982 0.853196 0.016944 0.310632 61.1658 0 0 12.74921 12.74921 12.74921 0 164.65	0.068586 0.815467 0 0 0 0 79.81025 0.772317 0.016627 0.304826 55.15264 0 0 0 0 0 0 0 0 146.557	0.067279 0 0 0 0 0 0 0.06311 0.299019 49.13948 0 0 0 0 0 0 0 0	0.065973 0 0 0 0 61.55113 0.610559 0.015993 0.293213 43.12632 0 0 0 0 0	0.064666 0 0 0 0 52.42156 0.529679 0.015677 0.287406	5 0.06 0 0 0 0 0 0 5 43. 9 0.4 7 0.01 5 0.2
2032 2024 2024 2024 2040 2043 2043 2043	100 17 122 122 2 2 2 127 129 120 120 120 121 121 121 121 122 122 122	31 15 31 31 31 32 29 21 30 30 31 31 31 31 31 31 31 31 31 31	EnergyCapacity EnergyCapacity EnergyCapacity EnergyOnly EnergyOnly EnergyOnly EnergyCapacity EnergyCapacity EnergyCapacity EnergyCapacity EnergyCapacity EnergyCapacity EnergyCapacity CapacityOnly CapacityOnly CapacityOnly CapacityOnly CapacityOnly CapacityOnly CapacityOnly CapacityOnly CapacityOnly EnergyConly EnergyConly EnergyConly EnergyConly EnergyOnly	1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	utility pu biomass w utility pu utility pu utility, pu	4hr_battei n/a n/a 4hr_battei n/a	utility, pv biomass w utility pv utility, pv utility, pv utility, pv hybrid hybrid utility, pv hybrid gas_ct gas_cc gas_cc gas_cc gas_cc demand n hybrio hybrio hybrid utility, pv hybrid	2022 2023 2022 2022 2022 2025 2024 2024 2024 2023 2020 2020 2023 2021 2022 2023 2021 2022 2023 2023	2041 2031 2024 2024 2039 2043 2043 2043 2043 2037 2025 2030 2024 2030 2030 2030 2030 2033 2024 2033 2030 2030	100% 100% 100% 100% 100% 100% 100% 100%	100% 100% 100% 100% 100% 100% 100% 100%	0.123102 0.772199 0 0 0 0 0 0.931892 0.029843 0.547122 64.91804 65.50175 42.11837 25.79289 0 21.10139 12.66083 12.66083 12.66083	0.119819 0.790135 0 0 0 0 0 9.1.59094 0.933259 0.029047 0.53253 65.15324 42.60402 0 0 21.3447 12.80682 12.80682 12.80682	0.116536 0.808072 0 0 0 0 92.1793 0.934626 0.028251 0.517937 65.38843 0 0 21.58802 21.58802 12.95281 0 0 0.02851 0.02851 0 0 0.02851 0 0 0.02851 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	0.09916 0.815181 0 0 0 87.7562 0.876324 0.024039 0.440713 61.7183 0 43.23086 0 0 21.65875 12.99525 12.99525	0.081785 0.822291 0 0 0 0 83.33331 0.818022 0.019827 0.363489 58.04722 0 43.37203 0 0 21.72947 13.03768	0.075839 0.810913 0 0 0 0 0 85.13646 0.835609 0.018385 0.33706 59.60551 0 42.89322 0 0 12.89345 12.89345	0.069892 0.799535 0 0 0 0 88.93982 0.853196 0.016944 0.310632 61.1658 0 0 42.41238 0 0 12.74921 12.74921	0.068586 0.815467 0 0 0 0 79.81025 0.772317 0.016627 0.304826 55.15264 0 0 0 0 0 0 0 0 146.557	0.067279 0 0 0 0 0 0 0.06311 0.299019 49.13948 0 0 0 0 0 0 0 0	0.065973 0 0 0 0 61.55113 0.610559 0.015993 0.293213 43.12632 0 0 0 0 0	0.064666 0 0 0 0 52.42156 0.529679 0.015677 0.287406	5 0.06 0 0 0 0 0 0 5 43. 9 0.4 7 0.01 5 0.2
2032 2024 2024 2024 2040 2044 2043 2043	100 77 122 123 124 125 127 127 128 129 129 120 121 121 121 121 122 122 122 122 122	31 155 311 311 292 211 300 300 27 30 31 31 31 31 31 31 31 31 31 31	EnergyCapacity EnergyCapacity EnergyCapacity EnergyChly EnergyChly EnergyChly EnergyChly EnergyChly EnergyCapacity EnergyCapacity EnergyCapacity EnergyCapacity EnergyCapacity (EnergyCapacity EnergyCapacity (EnergyCapacity CapacityChly CapacityOnly EnergyChly	1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	utility pu biomass wu utility pu gas ct gas cc gas cc gas cc gas cc gas cc demand r 4hr batter hydro hydro hydro	4hr_battei n/a n/a 4hr_battei n/a	utility, pv biomass, w utility, pv utility, pv utility, pv hybrid hybrid hybrid utility, pv hybrid gas, ct gas, cc hydro hydro hydro hydro hydro hydro	2022 2022 2022 2022 2022 2025 2024 2024	2041 2031 2024 2024 2039 2043 2043 2043 2043 2043 2025 2030 2024 2023 2024 2030 2030 2030 2042 2030 2030	100% 100% 100% 100% 100% 100% 100% 100%	100% 100% 100% 100% 100% 100% 100% 100%	0.123102 0.772199 0 0 0 0 0 0.931892 0.029843 0.547122 64.91804 65.50175 42.11837 25.79289 0 21.10139 12.66083 12.66083 12.66083	0.119819 0.790135 0 0 91.59094 0.933259 0.029047 0.53253 65.15324 67.2924 42.60402 0 0 21.3447 12.80682 12.80682 13.90682 15.95682 15.95682 15.95682 0 0 0 0 0 0 0 0 0 0 0 0 0	0.116536 0.808072 0 0 0 0 92.1793 0.934626 0.028251 0.517937 65.38843 0 0 21.58802 21.58802 12.95281 0 0 0.02851 0.02851 0 0 0.02851 0 0 0.02851 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	0.09916 0.815181 0 0 0 87.7562 0.876324 0.024039 0.440713 61.7183 0 43.23086 0 0 21.65875 12.99525 12.99525	0.081785 0.822291 0 0 0 0 83.33331 0.818022 0.019827 0.363489 58.04722 0 43.37203 0 0 21.72947 13.03768	0.075839 0.810913 0 0 0 0 0 85.13646 0.835609 0.018385 0.33706 59.60551 0 42.89322 0 0 12.89345 12.89345	0.069892 0.799535 0 0 0 88.93982 0.853196 0.016944 0.310632 61.1658 0 0 12.74921 12.74921 12.74921 0 164.65	0.068586 0.815467 0 0 0 0 79.81025 0.772317 0.016627 0.304826 55.15264 0 0 0 0 0 0 0 0 146.557	0.067279 0 0 0 0 0 0 0.06311 0.299019 49.13948 0 0 0 0 0 0 0 0	0.065973 0 0 0 0 61.55113 0.610559 0.015993 0.293213 43.12632 0 0 0 0 0	0.064666 0 0 0 0 52.42156 0.529679 0.015677 0.287406	5 0.06 0 0 0 0 0 0 5 43. 9 0.4 7 0.01 5 0.2
2032 2024 2024 2024 2024 2024 2024 2024	100 77 72 122 122 122 122 123 124 125 127 127 128 129 129 120 120 121 121 121 121 121 122 122 122	31 155 311 311 311 312 313 300 27 300 311 311 311 311 311 311 311	EnergyCapacity EnergyCapacity EnergyCapacity EnergyCaly EnergyCaly EnergyCaly EnergyCaly EnergyCapacity EnergyCapacity EnergyCapacity EnergyCapacity EnergyCapacity EnergyCapacity EnergyCapacity CapacityCaly CapacityCaly CapacityCaly CapacityCaly CapacityCaly CapacityCaly CapacityCaly CapacityCaly EnergyCaly	1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	utility, pu biomass, w utility pu utility, pu qua_cc qas_cc	4hr_battei n/a n/a 4hr_battei n/a	utility, pv biomass w utility pv utility pv utility pv utility pv utility pv hybrid hybrid utility pv utility pv hybrid gas ct gas cc gas cc gas cc gas cc gas cc hybrid gas cd gas cc hybrid gas ch pv utility pv hybrid gas ch gas cc gas cc hybrid gas cc hybrid pv utility pv hybrid gas cc hybrid pv hybrid hybri	2022 2022 2022 2022 2022 2022 2024 2024	2041 2031 2024 2024 2024 2039 2043 2043 2043 2043 2025 2030 2024 2026 2030 2030 2030 2030 2030 2030 2042 2024 2024	100% 100% 100% 100% 100% 100% 100% 100%	100% 100% 100% 100% 100% 100% 100% 100%	0.123102 0.772199 0 0 0 0 0 0.931892 0.029843 0.547122 64.91804 65.50175 42.11837 25.79289 0 21.10139 12.66083 12.66083 12.66083	0.119819 0.790135 0 0 91.59094 0.933259 0.029047 0.53253 65.15324 67.2924 42.60402 0 0 21.3447 12.80682 12.80682 13.90682 15.95682 15.95682 15.95682 0 0 0 0 0 0 0 0 0 0 0 0 0	0.116536 0.808072 0 0 0 0 92.1793 0.934626 0.028251 0.517937 65.38843 0 0 21.58802 21.58802 12.95281 0 0 0.02851 0.02851 0 0 0.02851 0 0 0.02851 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	0.09916 0.815181 0 0 0 87.7562 0.876324 0.024039 0.440713 61.7183 0 43.23086 0 0 21.65875 12.99525 12.99525	0.081785 0.822291 0 0 0 0 83.33331 0.818022 0.019827 0.363489 58.04722 0 43.37203 0 0 21.72947 13.03768	0.075839 0.810913 0 0 0 0 0 85.13646 0.835609 0.018385 0.33706 59.60551 0 42.89322 0 0 12.89345 12.89345	0.069892 0.799535 0 0 0 88.93982 0.853196 0.016944 0.310632 61.1658 0 0 12.74921 12.74921 12.74921 0 164.65	0.068586 0.815467 0 0 0 0 79.81025 0.772317 0.016627 0.304826 55.15264 0 0 0 0 0 0 0 0 146.557	0.067279 0 0 0 0 0 0 0.06311 0.299019 49.13948 0 0 0 0 0 0 0 0	0.065973 0 0 0 0 61.55113 0.610559 0.015993 0.293213 43.12632 0 0 0 0 0	0.064666 0 0 0 0 52.42156 0.529679 0.015677 0.287406	5 0.06 0 0 0 0 0 0 5 43. 9 0.4 7 0.01 5 0.2
2032 2 303.4 303.4 2040 2044 2044 2043 2043 2043 2043 204	10 77 12 12 12 12 12 12 12 12 12 12 12 12 12	31 15 31 31 31 31 31 30 30 27 30 31 31 31 31 31 31 31 31 31 31	EnergyCapacity EnergyCapacity EnergyOnly EnergyOnly EnergyOnly EnergyOnly EnergyCapacity EnergyCapacity EnergyCapacity EnergyCapacity EnergyCapacity EnergyCapacity EnergyCapacity EnergyCapacity EnergyCapacity CapacityOnly EnergyOnly	1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	utility, pu biomass, w utility pu utility,	4hr_battei n/a n/a 4hr_battei n/a	utility, pv biomass, w utility, pv biomass, w utility pv utility pv utility, pv hybrid sybrid utility, pv hybrid sas cc gas cc gas cc gas cc gas cc gas cc gas cc hydro	2022 2023 2022 2022 2022 2025 2024 2024 2024 2023 2020 2021 2022 2023 2023 2024 2024 2024 2024 2024	2041 2031 2032 2024 2024 2039 2043 2043 2043 2043 2043 2025 2026 2030 2030 2030 2030 2030 2030 2030	100% 100% 100% 100% 100% 100% 100% 100%	100% 100% 100% 100% 100% 100% 100% 100%	0.123102 0.772199 0 0 0 0 0 0.931892 0.029843 0.547122 64.91804 65.50175 42.11837 25.79289 0 21.10139 12.66083 12.66083 12.66083	0.119819 0.790135 0 0 91.59094 0.933259 0.029047 0.53253 65.15324 67.2924 42.60402 0 0 21.3447 12.80682 12.80682 13.90682 15.95682 15.95682 15.95682 0 0 0 0 0 0 0 0 0 0 0 0 0	0.116536 0.808072 0 0 0 92.1793 0.934626 0.028251 0.517937 65.38843 43.08968 0 0 12.15802 12.95281 12.95281 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	0.09916 0.815181 0 0 0 87.7562 0.876324 0.024039 0.440713 61.7183 0 43.23086 0 0 21.65875 12.99525 12.99525	0.081785 0.822291 0 0 0 0 83.33331 0.818022 0.019827 0.363489 58.04722 0 43.37203 0 0 21.72947 13.03768	0.075839 0.810913 0 0 0 0 0 85.13646 0.835609 0.018385 0.33706 59.60551 0 42.89322 0 0 12.89345 12.89345	0.069892 0.799535 0 0 0 88.93982 0.853196 0.016944 0.310632 61.1658 0 0 12.74921 12.74921 12.74921 0 164.65	0.068586 0.815467 0 0 0 0 79.81025 0.772317 0.016627 0.304826 55.15264 0 0 0 0 0 0 0 0 146.557	0.067279 0 0 0 0 0 0 0.06311 0.299019 49.13948 0 0 0 0 0 0 0 0	0.065973 0 0 0 0 61.55113 0.610559 0.015993 0.293213 43.12632 0 0 0 0 0	0.064666 0 0 0 0 52.42156 0.529679 0.015677 0.287406	5 0.06 0 0 0 0 0 0 5 43. 9 0.4 7 0.01 5 0.2
2032 2024 2024 2024 2024 2024 2024 2024	100 17 122 122 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2	31 155 311 311 311 312 313 314 315 317 317 317 318 319 319 311 311 311 311 311 311	EnergyCapacity EnergyCapacity EnergyCapacity EnergyCally EnergyCally EnergyCally EnergyCally EnergyCapacity EnergyCapacity EnergyCapacity EnergyCapacity EnergyCapacity EnergyCapacity CapacityCally EnergyCally	1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	utility pu biomass w utility pu utility pu utility, pu das ct gas cc hydro	4hr_battei n/a n/a 4hr_battei n/a	utility, pu biomass, w utility pu utility pu utility, pu utility, pu hybrid hybrid hybrid gas, ct gas, ct gas, ct gas, cc hydro	2022 2023 2022 2022 2022 2025 2024 2024 2024 2024	2041 2032 2024 2024 2024 2039 2043 2043 2043 2047 2025 2030 2030 2030 2030 2030 2030 2030	100% 100% 100% 100% 100% 100% 100% 100%	100% 100% 100% 100% 100% 100% 100% 100%	0.123102 0.772199 0 0 0 0 0 0.931892 0.029843 0.547122 64.91804 65.50175 42.11837 25.79289 0 21.10139 12.66083 12.66083 12.66083	0.119819 0.790135 0 0 0 0 91.59094 0.933259 0.029047 0.53253 65.15324 42.60402 12.80682 12.80682 12.80682 12.80682 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	0.116536 0.808072 0 0 0 92.1793 0.934626 0.028251 0.517937 65.38843 43.08968 0 0 12.15802 12.95281 12.95281 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	0.09916 0.815181 0 0 0 87.7562 0.876324 0.024039 0.440713 61.7183 0 43.23086 0 0 21.65875 12.99525 12.99525	0.081785 0.822291 0 0 0 0 83.33331 0.818022 0.019827 0.363489 58.04722 0 43.37203 0 0 21.72947 13.03768	0.075839 0.810913 0 0 0 0 0 85.13646 0.835609 0.018385 0.33706 59.60551 0 42.89322 0 0 12.89345 12.89345	0.069892 0.799535 0 0 0 88.93982 0.853196 0.016944 0.310632 61.1658 0 0 12.74921 12.74921 12.74921 0 164.65	0.068586 0.815467 0 0 0 79.81025 0.772317 0.016627 0.304826 55.15264 0 0 0 0 0 0 0 146.557	0.067279 0 0 0 0 0 0 0.06311 0.299019 49.13948 0 0 0 0 0 0 0 0	0.065973 0 0 0 0 61.55113 0.610559 0.015993 0.293213 43.12632 0 0 0 0 0	0.064666 0 0 0 0 52.42156 0.529679 0.015677 0.287406	5 0.06 0 0 0 0 0 0 5 43. 9 0.4 7 0.01 5 0.2
2032 2024 2024 2024 2024 2040 2043 2043	100 77 72 122 122 123 124 125 126 127 127 128 129 129 121 121 121 121 122 122 122 122	31 155 311 311 311 311 311 30 30 27 30 31 31 31 31 31 31 31 31 31 31	EnergyCapacity EnergyCapacity EnergyCapacity EnergyOnly EnergyOnly EnergyOnly EnergyCapacity EnergyCapacity EnergyCapacity EnergyCapacity EnergyCapacity EnergyCapacity EnergyCapacity (apacityOnly CapacityOnly CapacityOnly CapacityOnly CapacityOnly CapacityOnly CapacityOnly CapacityOnly CapacityOnly CapacityOnly EnergyConly EnergyConly EnergyConly EnergyOnly	1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	utility pu biomass, w utility pu utility pu utility pu utility, pu gas, ct gas cc gas cc gas cc gas cc gas cc demand n 4 hydro	4hr_battei n/a n/a 4hr_battei n/a	utility, pv biomass, w utility pv utility, pv utility, pv hybrid hybrid hybrid hybrid gas, ct gas, cc gas, cc gas, cc gas, cc gas, cc demand n hydro	2022 2023 2022 2022 2022 2024 2024 2024	2041 2031 2032 2034 2039 2043 2043 2043 2043 2025 2024 2024 2024 2024 2024 2024 2024	100% 100% 100% 100% 100% 100% 100% 100%	100% 100% 100% 100% 100% 100% 100% 100%	0.123102 0.772199 0 0 0 0 0 0.931892 0.029843 0.547122 64.91804 65.50175 42.11837 25.79289 0 21.10139 12.66083 12.66083 12.66083	0.119819 0.790135 0 0 0 0 91.59094 0.933259 0.029047 0.53253 65.15324 42.60402 12.80682 12.80682 12.80682 12.80682 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	0.116536 0.808072 0 0 0 92.1793 0.934626 0.028251 0.517937 65.38843 43.08968 0 0 12.15802 12.95281 12.95281 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	0.09916 0.815181 0 0 0 87.7562 0.876324 0.024039 0.440713 61.7183 0 43.23086 0 0 21.65875 12.99525 12.99525	0.081785 0.822291 0 0 0 0 83.33331 0.818022 0.019827 0.363489 58.04722 0 43.37203 0 0 21.72947 13.03768	0.075839 0.810913 0 0 0 0 0 85.13646 0.835609 0.018385 0.33706 59.60551 0 42.89322 0 0 12.89345 12.89345	0.069892 0.799535 0 0 0 88.93982 0.853196 0.016944 0.310632 61.1658 0 0 12.74921 12.74921 12.74921 0 164.65	0.068586 0.815467 0 0 0 79.81025 0.772317 0.016627 0.304826 55.15264 0 0 0 0 0 0 0 146.557	0.067279 0 0 0 0 0 0 0.06311 0.299019 49.13948 0 0 0 0 0 0 0 0	0.065973 0 0 0 0 61.55113 0.610559 0.015993 0.293213 43.12632 0 0 0 0 0	0.064666 0 0 0 0 52.42156 0.529679 0.015677 0.287406	5 0.06 0 0 0 0 0 0 5 43. 9 0.4 7 0.01 5 0.2
2032 2 2024 2 2 2024 2 2 2024 2 2 2 2	100 77 122 122 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2	31 155 311 311 311 312 313 314 315 317 317 317 318 319 319 311 311 311 311 311 311	EnergyCapacity EnergyCapacity EnergyCapacity EnergyCally EnergyCally EnergyCally EnergyCally EnergyCapacity EnergyCapacity EnergyCapacity EnergyCapacity EnergyCapacity EnergyCapacity EnergyCapacity CapacityCally EnergyCally	1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	utility, pu biomass, wa utility, pu biomass, wa utility, pu gas, cct gas, cc g	4hr_battei n/a n/a 4hr_battei n/a	utility, pu biomass, w utility pu utility, pu utility, pu utility, pu hybrid hybrid hybrid tutility pu hybrid gas, ct gas, ct gas, ct gas, ct gas, cc hydro	2022 2023 2022 2022 2022 2022 2024 2024	2041 2024 2024 2024 2039 2043 2043 2043 2043 2043 2043 2025 2025 2026 2026 2026 2027 2024 2024 2024 2024 2024 2024 2024	100% 100% 100% 100% 100% 100% 100% 100%	100% 100% 100% 100% 100% 100% 100% 100%	0.123102 0.772199 0 0 0 0 0 0.931892 0.029843 0.547122 64.91804 65.50175 42.11837 25.79289 0 21.10139 12.66083 12.66083 12.66083	0.119819 0.790135 0 0 0 0 91.59094 0.933259 0.029047 0.53253 65.15324 42.60402 12.80682 12.80682 12.80682 12.80682 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	0.116536 0.808072 0 0 0 92.1793 0.934626 0.028251 0.517937 65.38843 43.08968 0 0 12.15802 12.95281 12.95281 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	0.09916 0.815181 0 0 0 87.7562 0.876324 0.024039 0.440713 61.7183 0 43.23086 0 0 21.65875 12.99525 12.99525	0.081785 0.822291 0 0 0 0 83.33331 0.818022 0.019827 0.363489 58.04722 0 43.37203 0 0 21.72947 13.03768	0.075839 0.810913 0 0 0 0 0 85.13646 0.835609 0.018385 0.33706 59.60551 0 42.89322 0 0 12.89345 12.89345	0.069892 0.799535 0 0 0 88.93982 0.853196 0.016944 0.310632 61.1658 0 0 12.74921 12.74921 12.74921 0 164.65	0.068586 0.815467 0 0 0 79.81025 0.772317 0.016627 0.304826 55.15264 0 0 0 0 0 0 0 146.557	0.067279 0 0 0 0 0 0 0.06311 0.299019 49.13948 0 0 0 0 0 0 0 0	0.065973 0 0 0 0 61.55113 0.610559 0.015993 0.293213 43.12632 0 0 0 0 0	0.064666 0 0 0 0 52.42156 0.529679 0.015677 0.287406	5 0.06 0 0 0 0 0 0 5 43. 9 0.4 7 0.01 5 0.2
2012 2024 2024 2024 2024 2024 2024 2024	100 100 100 100 100 100 100 100 100 100	31 15 31 31 31 31 30 30 30 27 30 31 31 31 31 31 31 31 31 31 31	EnergyCapacity EnergyCapacity EnergyCapacity EnergyCaly EnergyCaly EnergyCaly EnergyCaly EnergyCaly EnergyCapacity EnergyCapacity EnergyCapacity EnergyCapacity EnergyCapacity EnergyCapacity (apacityCaly CapacityOnly EnergyCaly	1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	utility pu biomass, w utility pu utility pu utility pu utility, pu gas, ct gas cc gas cc gas cc gas cc gas cc demand n 4 hydro	4hr_battei n/a n/a 4hr_battei n/a	utility, pv biomass, w utility pv utility, pv utility, pv hybrid hybrid hybrid hybrid gas, ct gas, cc gas, cc gas, cc gas, cc gas, cc demand n hydro	3022 2022 2022 2022 2025 2024 2024 2024 2	2041 2031 2031 2032 2024 2024 2039 2043 2043 2043 2043 2037 2025 2030 2023 2023 2023 2024 2024 2024 2024	100% 100% 100% 100% 100% 100% 100% 100%	100% 100% 100% 100% 100% 100% 100% 100%	0.123102 0.772199 0 0 0 0 0 0.931892 0.029843 0.547122 64.91804 65.50175 42.11837 25.79289 0 21.10139 12.66083 12.66083 12.66083 15.44808	0.119819 0.790135 0 0 0 0 91.59094 0.933259 0.029047 0.53253 65.15324 42.60402 12.80682 12.80682 12.80682 12.80682 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	0.116536 0.808072 0 0 0 92.1793 0.934626 0.028251 0.517937 65.38843 43.08968 0 0 12.15802 12.95281 12.95281 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	0.09916 0.815181 0 0 0 87.7562 0.876324 0.024039 0.440713 61.7183 0 43.23086 0 0 21.65875 12.99525 12.99525	0.081785 0.822291 0 0 0 0 83.33331 0.818022 0.019827 0.363489 58.04722 0 43.37203 0 0 21.72947 13.03768	0.075839 0.810913 0 0 0 0 0 85.13646 0.835609 0.018385 0.33706 59.60551 0 42.89322 0 0 12.89345 12.89345	0.069892 0.799535 0 0 0 88.93982 0.853196 0.016944 0.310632 61.1658 0 0 12.74921 12.74921 12.74921 0 164.65	0.068586 0.815467 0 0 0 79.81025 0.772317 0.016627 0.304826 55.15264 0 0 0 0 0 0 0 146.557	0.067279 0 0 0 0 0 0 0.06311 0.299019 49.13948 0 0 0 0 0 0 0 0	0.065973 0 0 0 0 61.55113 0.610559 0.015993 0.293213 43.12632 0 0 0 0 0	0.064666 0 0 0 0 52.42156 0.529679 0.015677 0.287406	0.00 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0
2032 2024 2024 2024 2040 2041 2043 2043 2043 2043 2043 2043 2025 2024 2024 2024 2024 2024 2024 2024	100 77 122 122 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2	31 15 31 31 31 31 30 30 30 27 30 31 31 31 31 31 31 31 31 31 31	EnergyCapacity EnergyCapacity EnergyCapacity EnergyCally EnergyCally EnergyCally EnergyCally EnergyCapacity EnergyCapacity EnergyCapacity EnergyCapacity EnergyCapacity EnergyCapacity EnergyCapacity CapacityCally EnergyCally	1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	utility, pu biomass, wa utility, pu biomass, wa utility, pu gas, cct gas, cc g	4hr_battei n/a n/a 4hr_battei n/a	utility, pu biomass, w utility pu utility, pu utility, pu utility, pu hybrid hybrid hybrid tutility pu hybrid gas, ct gas, ct gas, ct gas, ct gas, cc hydro	2022 2023 2022 2022 2022 2022 2024 2024	2041 2024 2024 2024 2039 2043 2043 2043 2043 2043 2043 2025 2025 2026 2026 2026 2027 2024 2024 2024 2024 2024 2024 2024	100% 100% 100% 100% 100% 100% 100% 100%	100% 100% 100% 100% 100% 100% 100% 100%	0.123102 0.772199 0 0 0 0 0 0.931892 0.029843 0.547122 64.91804 65.50175 42.11837 25.79289 0 21.10139 12.66083 12.66083 12.66083 15.44808	0.119819 0.790135 0 0 0 0 91.59094 0.933259 0.029047 0.53253 65.15324 42.60402 12.80682 12.80682 12.80682 12.80682 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	0.116536 0.808072 0 0 0 92.1793 0.934626 0.028251 0.517937 65.38843 43.08968 0 0 12.15802 12.95281 12.95281 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	0.09916 0.815181 0 0 0 87.7562 0.876324 0.024039 0.440713 61.7183 0 43.23086 0 0 21.65875 12.99525 12.99525	0.081785 0.822291 0 0 0 0 83.33331 0.818022 0.019827 0.363489 58.04722 0 43.37203 0 0 21.72947 13.03768	0.075839 0.810913 0 0 0 0 0 85.13646 0.835609 0.018385 0.33706 59.60551 0 42.89322 0 0 12.89345 12.89345	0.069892 0.799535 0 0 0 88.93982 0.853196 0.016944 0.310632 61.1658 0 0 12.74921 12.74921 12.74921 0 164.65	0.068586 0.815467 0 0 0 79.81025 0.772317 0.016627 0.304826 55.15264 0 0 0 0 0 0 0 146.557	0.067279 0 0 0 0 0 0 0.06311 0.299019 49.13948 0 0 0 0 0 0 0 0	0.065973 0 0 0 0 61.55113 0.610559 0.015993 0.293213 43.12632 0 0 0 0 0	0.064666 0 0 0 0 52.42156 0.529679 0.015677 0.287406	0.00 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0
2032 2024 2024 2024 2024 2040 2040 2043 2043	100 100 100 100 100 100 100 100 100 100	31 15 31 31 31 31 30 30 30 27 30 31 31 31 31 31 31 31 31 31 31	EnergyCapacity EnergyCapacity EnergyCapacity EnergyCaly EnergyCaly EnergyCaly EnergyCaly EnergyCaly EnergyCapacity EnergyCapacity EnergyCapacity EnergyCapacity EnergyCapacity EnergyCapacity (apacityCaly CapacityOnly EnergyCaly	1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	utility, pu biomass, wa utility, pu biomass, wa utility, pu gas, cct gas, cc g	4hr_battei n/a n/a 4hr_battei n/a	utility, pu biomass, w utility pu utility, pu utility, pu utility, pu hybrid hybrid hybrid tutility pu hybrid gas, ct gas, ct gas, ct gas, ct gas, cc hydro	3022 2022 2022 2022 2025 2024 2024 2024 2	2041 2031 2031 2032 2024 2024 2039 2043 2043 2043 2043 2037 2025 2030 2023 2023 2023 2024 2024 2024 2024	100% 100% 100% 100% 100% 100% 100% 100%	100% 100% 100% 100% 100% 100% 100% 100%	0.123102 0.772199 0 0 0 0 0 0.931892 0.029843 0.547122 64.91804 65.50175 42.11837 25.79289 0 21.10139 12.66083 12.66083 12.66083 15.44808	0.119819 0.790135 0 0 0 0 91.59094 0.933259 0.029047 0.53253 65.15324 42.60402 12.80682 12.80682 12.80682 12.80682 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	0.116536 0.808072 0 0 0 92.1793 0.934626 0.028251 0.517937 65.38843 43.08968 0 0 12.15802 12.95281 12.95281 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	0.09916 0.815181 0 0 0 87.7562 0.876324 0.024039 0.440713 61.7183 0 43.23086 0 0 21.65875 12.99525 12.99525	0.081785 0.822291 0 0 0 0 83.33331 0.818022 0.019827 0.363489 58.04722 0 43.37203 0 0 21.72947 13.03768	0.075839 0.810913 0 0 0 0 0 85.13646 0.835609 0.018385 0.33706 59.60551 0 42.89322 0 0 12.89345 12.89345	0.069892 0.799535 0 0 0 88.93982 0.853196 0.016944 0.310632 61.1658 0 0 12.74921 12.74921 12.74921 0 164.65	0.068586 0.815467 0 0 0 79.81025 0.772317 0.016627 0.304826 55.15264 0 0 0 0 0 0 0 146.557	0.067279 0 0 0 0 0 0 0.06311 0.299019 49.13948 0 0 0 0 0 0 0 0	0.065973 0 0 0 0 61.55113 0.610559 0.015993 0.293213 43.12632 0 0 0 0 0	0.064666 0 0 0 0 52.42156 0.529679 0.015677 0.287406	0.00 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0
2032 2024 2024 2024 2024 2040 2040 2043 2043	100 100 100 100 100 100 100 100 100 100	31 15 31 31 31 31 30 30 30 27 30 31 31 31 31 31 31 31 31 31 31	EnergyCapacity EnergyCapacity EnergyCapacity EnergyCaly EnergyCaly EnergyCaly EnergyCaly EnergyCaly EnergyCapacity EnergyCapacity EnergyCapacity EnergyCapacity EnergyCapacity EnergyCapacity (apacityCaly CapacityOnly EnergyCaly	1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	utility, pu biomass, wa utility, pu biomass, wa utility, pu gas, cct gas, cc g	4hr_battei n/a n/a 4hr_battei n/a	utility, pu biomass, w utility pu utility, pu utility, pu utility, pu hybrid hybrid hybrid tutility pu hybrid gas, ct gas, ct gas, ct gas, ct gas, cc hydro	3022 2022 2022 2022 2025 2024 2024 2024 2	2041 2031 2031 2032 2024 2024 2039 2043 2043 2043 2043 2037 2025 2030 2023 2023 2023 2024 2024 2024 2024	100% 100% 100% 100% 100% 100% 100% 100%	100% 100% 100% 100% 100% 100% 100% 100%	0.123102 0.772199 0 0 0 0 0 0.931892 0.029843 0.547122 64.91804 65.50175 42.11837 25.79289 0 21.10139 12.66083 12.66083 12.66083 15.44808	0.119819 0.790135 0 0 0 0 91.59094 0.933259 0.029047 0.53253 65.15324 42.60402 12.80682 12.80682 12.80682 12.80682 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	0.116536 0.808072 0 0 0 92.1793 0.934626 0.028251 0.517937 65.38843 43.08968 0 0 12.15802 12.95281 12.95281 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	0.09916 0.815181 0 0 0 87.7562 0.876324 0.024039 0.440713 61.7183 0 43.23086 0 0 21.65875 12.99525 12.99525	0.081785 0.822291 0 0 0 0 83.33331 0.818022 0.019827 0.363489 58.04722 0 43.37203 0 0 21.72947 13.03768	0.075839 0.810913 0 0 0 0 0 85.13646 0.835609 0.018385 0.33706 59.60551 0 42.89322 0 0 12.89345 12.89345	0.069892 0.799535 0 0 0 88.93982 0.853196 0.016944 0.310632 61.1658 0 0 12.74921 12.74921 12.74921 0 164.65	0.068586 0.815467 0 0 0 79.81025 0.772317 0.016627 0.304826 55.15264 0 0 0 0 0 0 0 146.557	0.067279 0 0 0 0 0 0 0.06311 0.299019 49.13948 0 0 0 0 0 0 0 0	0.065973 0 0 0 0 61.55113 0.610559 0.015993 0.293213 43.12632 0 0 0 0 0	0.064666 0 0 0 0 52.42156 0.529679 0.015677 0.287406	0.00 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0
2012 2024 2024 2024 2024 2024 2024 2024	100 100 100 100 100 100 100 100 100 100	31 15 31 31 31 32 30 30 27 30 31 31 31 31 31 31 31 31 31 31	EnergyCapacity EnergyCapacity EnergyCapacity EnergyCapacity EnergyCaly EnergyCaly EnergyCaly EnergyCapacity EnergyCapacity EnergyCapacity EnergyCapacity EnergyCapacity EnergyCapacity EnergyCapacity (EnergyCapacity EnergyCapacity CapacityOnly CapacityOnly CapacityOnly CapacityOnly CapacityOnly CapacityOnly CapacityOnly EnergyCaly CapacityCaly CapacityCaly	1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	utility, pu biomass, w utility pu utility, pu sa cc gas cc ga	Shr batter n/a n/a Ahr batter n/a Ahr batter n/a	utility, pu biomass, w utility, pu utility, pu vutility, pu hybrid hybrid hybrid gas, ct gas, cc gas, cc hydro	2022 2022 2022 2022 2024 2024 2024 2024	2041 2031 2031 2032 2024 2024 2039 2043 2043 2043 2043 2037 2025 2030 2023 2023 2023 2024 2024 2024 2024	100% 100% 100% 100% 100% 100% 100% 100%	100% 100% 100% 100% 100% 100% 100% 100%	0.123102 0.772199 0 0 0 0 0 0.931892 0.029843 0.547122 64.91804 65.50175 42.11837 25.79289 0 21.10139 12.66083 12.66083 12.66083 15.44808	0.119819 0.790135 0 0 91.59034 0.039239 0.039239 65.15324 42.60402 0 0 21.80662 12.80662 12.80662 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	0.116536 0.808072 0 0 92.1793 0.934626 0.028251 0.0517937 63.38843 0 43.08958 0 21.95281 12.95281 12.95281 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	0.09916 0.815181 0 0 87.7562 0.876324 0.024039 0.440713 61.71783 0.040713 12.99525 12.99525 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	0.081785 0.82291 0 0 0 0 0 0 83.33311 0.818022 0.019827 0 0 0 0 0 0 13.03768 13.03768 13.03768 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	0.075839 0.810913 0 0 0 0 0 0.018385 0.337606 0.218385 0.33706 0.21839345 12.89345 12.89345 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	0.069892 0.799535 0 0 0 85.93982 0.853196 0.016944 0.310632 0.310632 0 0 12.74921 12.74921 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	0.0685465 0.815465 0.00000000000000000000000000000000000	0.067279 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.	0.065973 0 0 0 0 6.1.55113 0.6105593 0.015993 0.	0.0646865 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.	0.000 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0
2032 2024 2024 2024 2024 2024 2023 2033 2033 2033 2035	100 170 171 172 172 172 172 172 173 174 175 177 177 177 177 177 177 177 177 177	31 31 31 31 31 31 31 30 30 27 30 31 31 31 31 31 31 31 31 31 31	EnergyCapacity EnergyCapacity EnergyCapacity EnergyOnly EnergyOnly EnergyConly EnergyCapacity EnergyCapacity EnergyCapacity EnergyCapacity EnergyCapacity EnergyCapacity (EspacityCapacity (EspacityOnly CapacityOnly CapacityOnly CapacityOnly CapacityOnly CapacityOnly CapacityOnly CapacityOnly EnergyConly EnergyConly EnergyConly EnergyConly EnergyConly EnergyOnly	1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	utility, pu biomass, wa utility, pu biomass, wa utility, pu gas, cct gas, cc g	Shr batter n/a n/a Ahr batter n/a Ahr batter n/a	utility, pu biomass, w utility pu utility, pu utility, pu utility, pu hybrid hybrid hybrid tutility pu hybrid gas, ct gas, ct gas, ct gas, ct gas, cc hydro	2022 2022 2022 2022 2024 2024 2024 2024	2041 2041 2031 2031 2034 2024 2039 2043 2043 2043 2043 2043 2043 2043 2044 2030 2030	100% 100% 100% 100% 100% 100% 100% 100%	100% 100% 100% 100% 100% 100% 100% 100%	0.123102 0.772199 0 0 0 0 0 0 0 0 0 0 0 0 0	0.119819 0.790135 0 0 91.59034 0.039239 0.039239 65.15324 42.60402 0 0 21.80662 12.80662 12.80662 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	0.116536 0.808072 0 0 0 92.1793 0.934626 0.028251 0.517937 65.38843 43.08968 0 0 12.15802 12.95281 12.95281 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	0.09916 0.815181 0 0 87.7562 0.876324 0.024039 0.440713 61.71783 0.040713 12.99525 12.99525 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	0.081785 0.82291 0 0 0 0 0 0 83.33311 0.818022 0.019827 0 0 0 0 0 0 13.03768 13.03768 13.03768 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	0.075839 0.810913 0 0 0 0 0 0.018385 0.337606 0.218385 0.33706 0.21839345 12.89345 12.89345 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	0.069892 0.799535 0 0 0 85.93982 0.853196 0.016944 0.310632 0.310632 0 0 12.74921 12.74921 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	0.0685465 0.815465 0.00000000000000000000000000000000000	0.067279 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.	0.065973 0 0 0 0 6.1.55113 0.6105593 0.015993 0.	0.0646865 0.00 0.00 0.00 0.232456 0.232456 0.23740 0.015677 0.015677 0.015677 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0	0.08
2032 3034 3034 2044 2044 2043 2043 2043	100 77 72 122 122 123 124 125 126 127 127 128 129 129 120 121 121 121 121 122 122 122 122 122	31 155 311 311 311 312 313 314 315 317 317 317 318 319 319 319 311 311 311 311 311	EnergyCapacity EnergyCapacity EnergyCapacity EnergyCally EnergyCally EnergyCally EnergyCally EnergyCapacity EnergyCapacity EnergyCapacity EnergyCapacity EnergyCapacity EnergyCapacity EnergyCapacity EnergyCapacity CapacityCally CapacityCally CapacityCally CapacityCally CapacityCally CapacityCally CapacityCally EnergyCally EnergyCapacity EnergyCapacity EnergyCapacity	1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	utility, pu biomass, wa utility pu utility, pu gas ct gas cc qas cc gas cc pas cc pas cc pas cc pas cc qas	Shr batter n/a n/a Ahr batter n/a Ahr batter n/a	utility, pu biomass, w utility, pu utility, pu utility, pu utility, pu utility, pu hybrid hybrid utility, pu hybrid gas, ct gas, cc ga	2022 2023 2024 2024 2024 2024 2024 2024	2041 2041 2031 2034 2024 2024 2039 2043 2043 2043 2043 2043 2024 2030 2030	100% 100% 100% 100% 100% 100% 100% 100%	100% 100% 100% 100% 100% 100% 100% 100%	0.123102 0.772199 0 0 0 0 0 0 0 0 0 0 0 0 0	0.119819 0.790135 0 0 91.59034 0.039239 0.039239 65.15324 42.60402 0 0 21.80662 12.80662 12.80662 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	0.116536 0.808072 0 0 92.1793 0.934626 0.028251 0.0517937 63.38843 0 43.08958 0 21.95281 12.95281 12.95281 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	0.09916 0.815181 0 0 87.7562 0.876324 0.024039 0.440713 61.71783 0.040713 12.99525 12.99525 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	0.081785 0.82291 0 0 0 0 0 0 83.33311 0.818022 0.019827 0 0 0 0 0 0 13.03768 13.03768 13.03768 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	0.075839 0.810913 0 0 0 0 0 0.018385 0.337606 0.218385 0.33706 0.21839345 12.89345 12.89345 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	0.069892 0.799535 0 0 85.93982 0.853196 0.0169644 0.016964 0.016964 0.016964 0.016964 0.016964 0.016964 0.01696	0.085586 0.815467 0.005586 0.005586 0.005586 0.00586 0	0.067279 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	0.065973 0 0 0 61.55113 0.065973 0 0 62.55113 0.079213 43.126322 0.09213 43.12632 0.09213 43.12632 0.0000 0.0000 0.0000 0.00000 0.00000 0.000000	0.064686 00 00 0.05242196 0.2324396 0.2324396 0.23743166 0.23743166 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0	0.06
2032 3034 2024 2024 2024 2024 2023 2023 2025 2030 2031 2032 2030 2031 2031 2032 2034 2035 2036 2036 2037 2037 2037 2038 2039 2049	10 17 17 18 18 18 18 18 18 18 18 18 18 18 18 18	31 155 31 31 31 31 30 30 30 30 31 31 31 31 31 31 31 31 31 31	EnergyCapacity EnergyCapacity EnergyCapacity EnergyCally EnergyCally EnergyCally EnergyCally EnergyCapacity EnergyCapacity EnergyCapacity EnergyCapacity EnergyCapacity EnergyCapacity EnergyCapacity CapacityCally CapacityCally CapacityCally CapacityCally CapacityCally CapacityCally CapacityCally EnergyCally EnergyCapacity	1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	utility publiomass, was utility publiomass, was utility publify, pas cc gas cc publify,	Shr batter n/a n/a Ahr batter n/a Ahr batter n/a	utility, pu biomass, w utility, pu biomass, w utility, pu utility, pu hybrid hybrid hybrid tutility, pu hybrid tutility, pu hybrid tutility, pu hybrid gas cc gas c	2022 2022 2022 2023 2024 2024 2024 2024	2041 2041 2031 2031 2034 2024 2039 2043 2043 2043 2043 2043 2043 2043 2043	100% 100% 100% 100% 100% 100% 100% 100%	100% 100% 100% 100% 100% 100% 100% 100%	0.123102 0.772199 0 0 0 0 0 0 0 0 0 0 0 0 0	0.119819 0.790135 0 0 91.59034 0.039239 0.039239 65.15324 42.60402 0 0 21.80662 12.80662 12.80662 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	0.116536 0.808072 0 0 0 0 0 2.1793 0.934626 0.028251 0.028251 0.517937 53.8843 0 0 115.95281 12.95281 10.00 0 0 0 0 0 0 0 0 0 0 0 0 0 0	0.9916 0.815181 0 0 0 87.7562 0.876324 0.024039 0.440713 61.7183 61.71	0.081785 0.82291 0 0 0 0 0 0 0 3.338102 0.15947 0.	0.075839 0.810913 0 0 0 0 0 0.018385 0.337606 0.218385 0.33706 0.21839345 12.89345 12.89345 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	0.069892 0.799535 0 0 0 0 88.93982 0.853196 0.016944 0.310632 61.16384 0 0 0 0 12.74921 12.74921 0.01646 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	0.085385 0.815467 0.085385 0.815467 0.005325 0.0	0.067279 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.	0.065973 0 0 0 0 6.1.55113 0.610559 0.015993 0.0	0.0646866 0.00 0.00 0.00 0.2421669 0.2421669 0.0126470 0.0126470 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0	0.06
2032 2032 3024 2044 2044 2044 2043 2043 2036 2036 2036 2034 2038 2038 2038 2039 2034 2038 2039 2034 2044	100 77 72 122 122 123 124 125 127 127 128 129 129 121 121 121 121 121 121 121 121	31 15 31 31 31 31 30 30 30 30 31 31 31 31 31 31 31 31 31 31	EnergyCapacity EnergyCapacity EnergyCapacity EnergyCally EnergyCally EnergyCally EnergyCally EnergyCapacity EnergyCapacity EnergyCapacity EnergyCapacity EnergyCapacity EnergyCapacity EnergyCapacity EnergyCapacity CapacityCally CapacityCally CapacityCally CapacityCally CapacityCally CapacityCally CapacityCally EnergyCally EnergyCapacity EnergyCapacity EnergyCapacity	1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	utility, pu biomass, wa utility pu utility, pu utility	Shr batter n/a n/a Ahr batter n/a Ahr batter n/a	utility, pu biomass, w utility pu utility, pu utility, pu utility, pu hybrid hybrid hybrid utility pu hybrid gas cc hydro	2022 2023 2024 2024 2024 2024 2024 2024	2041 2041 2041 2024 2024 2024 2039 2043 2043 2043 2043 2043 2043 2043 2043	100% 100% 100% 100% 100% 100% 100% 100%	100% 100% 100% 100% 100% 100% 100% 100%	0.123102 0.772199 0 0 0 0 0 0 0 0 0 0 0 0 0	0.119819 0.790135 0 0 91.59034 0.039239 0.039239 65.15324 42.60402 0 0 21.80662 12.80662 12.80662 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	0.116536 0.808072 0 0 92.1793 0.934626 0.028251 0.0517937 63.38843 0 43.08958 0 21.95281 12.95281 12.95281 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	0.09916 0.815181 0 0 87.7562 0.876324 0.024039 0.440713 61.71783 0.040713 12.99525 12.99525 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	0.081785 0.82291 0 0 0 0 0 0 83.33311 0.818022 0.019827 0 0 0 0 0 0 13.03768 13.03768 13.03768 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	0.075839 0.810913 0 0 0 0 0 0.018385 0.337606 0.218385 0.33706 0.21839345 12.89345 12.89345 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	0.069892 0.799535 0.00 8.93982 0.833982 0.833982 0.110384 0.110384 0.110384 0.110384 0.110384 0.110384 0.110384 0.110384 0.110384 0.110384 0.010384	0.085586 0.815467 0.085586 0.815467 0.007 0.79.712317 0.0164276 0.	0.067279 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	0.065973 0 0 0 0 61.555139 0.1595131 0.1595131 0.1595131 0.159513	0.064686 00 00 0.054219679 0.2527406 37.113166 37.113166 00 00 00 00 00 00 00 00 00 00 00 00 0	5 0.06. 5 0.06. 5 43.3 6 0.06. 6 43.3 7 0.04. 7 0.0

2024 12	31 EnergyOnly	0 in_state_w n/a		2023	2024	100%	100%	0	0 0	0	0	0	0	0	0	0	0	0
2024 12	31 EnergyOnly	0 hydro n/a	hydro	2023	2024	100%	100%	0	0 0	0	0	0	0	0	0	0	0	0
2024 12	31 EnergyOnly	0 geotherma n/a	geotherma	2023	2024	100%	100%	0	0 0	0	0	0	0	0	0	0	0	0
2042 12	31 EnergyOnly	0 biomass_w n/a	biomass_w	2023	2042	100%	100%	0	0 0	0	0	0	0	0	0	0	0	0
2042 12	31 EnergyOnly	0 utility_pv n/a	utility_pv	2023	2042	100%	100%	0	0 0	0	0	0	0	0	0	0	0	0
2042 12	31 EnergyOnly	0 in_state_w n/a	in_state_w	2023	2042	100%	100%	0	0 0	0	0	0	0	0	0	0	0	0
2042 12	31 EnergyOnly	0 hydro n/a	hydro	2023	2042	100%	100%	0	0 0	0	0	0	0	0	0	0	0	0
2042 12	31 EnergyOnly	0 geotherma n/a	geotherma	2023	2042	100%	100%	0	0 0	0	0	0	0	0	0	0	0	0
2042 12	31 EnergyOnly	0 hydro n/a	hydro	2023	2042	100%	100%	0	0 0	0	0	0	0	0	0	0	0	0
2049 12	31 EnergyCapacity	1 8hr_batter n/a	8hr_batter	2030	2049	100%	100%	0	0 0	0	0	0	44.5	42.56	40.62	38.68	36.74	34.8
2047 12	31 EnergyCapacity	1 4hr_batter n/a	4hr_batter	2028	2047	100%	100%	0	0 0	0	163.2	170.6	178	158.44	138.88	119.32	99.76	80.2
2053 12	31 EnergyCapacity	1 4hr_batter n/a	4hr_batter	2034	2053	100%	100%	0	0 0	0	0	0	0	0	0	0	99.76	80.2
2023 12	31 CapacityOnly	1 gas cc n/a	gas cc	2023	2023	100%	100%	0	0 0	0	0	0	0	0	0	0	0	0
2024 12	31 CapacityOnly	1 gas_cc n/a	gas_cc	2024	2024	100%	100%	579.022	0 0	0	0	0	0	0	0	0	0	0
2025 12	31 CapacityOnly	1 gas_cc n/a	gas_cc	2025	2025	100%	100%	0	545.5706 0	0	0	0	0	0	0	0	0	0
2026 12	31 CapacityOnly	1 gas_cc n/a	gas_cc	2026	2026	100%	100%	0	0 630.9817	0	0	0	0	0	0	0	0	(
2027 12	31 CapacityOnly	1 gas_cc n/a	gas_cc	2027	2027	100%	100%	0	0 0	582.1871	0	0	0	0	0	0	0	(
2028 12	31 CapacityOnly	1 gas cc n/a	gas cc	2028	2028	100%	100%	0	0 0	0	432.8511	0	0	0	0	0	0	C
2029 12	31 CapacityOnly	1 gas cc n/a	gas cc	2029	2029	100%	100%	0	0 0	0	0	459.8663	0	0	0	0	0	C
2030 12	31 CapacityOnly	1 gas cc n/a	gas cc	2030	2030	100%	100%	0	0 0	0	0	0	361.2277	0	0	0	0	(
2031 12	31 CapacityOnly	1 gas cc n/a	gas cc	2031	2031	100%	100%	0	0 0	0	0	0	0	446.2075	0	0	0	(
2032 12	31 CapacityOnly	1 gas cc n/a	gas cc	2032	2032	100%	100%	0	0 0	0	0	0	0	0	473.0909	0	0	(
2033 12	31 CapacityOnly	1 gas cc n/a	gas cc	2033	2033	100%	100%	0	0 0	0	0	0	0	0	0	468.6887	0	(
2034 12	31 CapacityOnly	1 gas cc n/a	gas cc	2034	2034	100%	100%	0	0 0	0	0	0	0	0	0	0	484.6144	(
2035 12	31 CapacityOnly	1 gas cc n/a	gas cc	2035	2035	100%	100%	0	0 0	0	0	0	0	0	0	0	0	498.0705
2032 12	31 CapacityOnly	1 demand ren/a	demand re	2023	2032	100%	100%	11.58606	11.96252 12.33898	11.6229	10.90682	11.92616	12.9455	10.7884	8.6313	0	0	(
2026 12	31 EnergyCapacity	1 gas cc n/a	gas cc	2024	2026	100%	100%	37.38013	37.81115 38.24217	0	0	0	0	0	0	0	0	(
2025 12	31 EnergyCapacity	1 gas cc n/a	gas cc	2024	2025	100%	100%	33.11748	33.49935 0	0	0	0	0	0	0	0	0	(
2024 12	31 EnergyCapacity	1 gas cc n/a	gas cc	2024	2024	100%	100%	51.67638	0 0	0	0	0	0	0	0	0	0	(
2024 12	31 EnergyCapacity	1 cogen n/a	cogen	2024	2024	100%	100%	3.402331	0 0	0	0	0	0	0	0	0	0	(
2025 12	31 EnergyCapacity	1 cogen n/a	cogen	2024	2025	100%		2.895601	2.889729 0	0	0	0	0	0	0	0	0	-
2026 12	31 EnergyCapacity	1 cogen n/a	coaen	2024	2026	100%	100%	1.266825	1.264257 1.261688	0	0	0	0	0	0	0	0	-
2035 12	31 CapacityOnly	1 4hr batter n/a	4hr batter	2024	2035	100%		19.90554	20.13863 20.37172	19.69577	19.01982	19.88223	20.74465	18.46507	16.18549	13.90591	11.62633	9.346748
2035 12	31 CapacityOnly	1 4hr batter n/a	4hr batter	2025	2035	100%	100%	0	5.034657 5.092929	4.923942	4.754954	4.970559	5.186163	4.616268	4.046373	3.476478	2.906582	2.336687
2035 12	31 EnergyCapacity	1 4hr batter n/a	4hr batter	2024	2035	100%	100%	0.066352	0.067129 0.067906	0.065653	0.063399	0.066274	0.069149	0.06155	0.053952	0.046353	0.038754	0.031156

Attachment B - 25 MMT RDT Page 14 of 14

${\tt CSPReportSheet}$

Resource	2024	2026	2030	2035	Units	Туре
Large Hydro	845	525	525	525	GWh	GHG-Free
Imported Hydro	1,150	766	69	120	GWh	GHG-Free
Asset Controlling Supplier	-	-	-	-	GWh	GHG-Free (Partial)
Nuclear	-	-	-	-	GWh	GHG-Free
Biogas	80	80	80	30	GWh	RPS Eligible
Biomass	65	38	4	16	GWh	RPS Eligible
Geothermal	332	454	1,753	1,785	GWh	RPS Eligible
Small Hydro	291	106	37	69	GWh	RPS Eligible
Wind Resources						
Wind Existing California	606	783	438	461	GWh	RPS Eligible
Wind New PG&E	291	290	290	290	GWh	RPS Eligible
Wind New SCE SDG&E	-	263	263	263	GWh	RPS Eligible
Wind Pacific Northwest	-	-	-	-	GWh	RPS Eligible
Wind Wyoming	-	-	-	-	GWh	RPS Eligible
Wind New Mexico	-	-	250	250	GWh	RPS Eligible
Wind Offshore Morro Bay	-	-	-	400	GWh	RPS Eligible
Wind Offshore Humboldt	-	-	-	-	GWh	RPS Eligible
Solar Resources						
Solar Existing California	1,815	1,649	1,451	1,137	GWh	RPS Eligible
Solar New PG&E	-	-	-	-	GWh	RPS Eligible
Solar New SCE SDG&E	-	-	-	-	GWh	RPS Eligible
Solar Distributed	32	32	32	31	GWh	RPS Eligible
Hybrid						
Hybrid or Paired Solar and Battery	328	626	614	596	GWh	RPS Eligible
Storage & DR						
Shed DR	15	15	15	-	MW	GHG-Free
Pumped Storage	-	-	-	-	MW	n/a
Battery Storage	649	857	2,057	2,117	MWh Energy Capacity	n/a
User-Specified Profies						
Storage Resource Custom Profile	-	-	-	-	MW	n/a
RPS Resource Custom Profile	-	-	-	-	GWh	RPS Eligible
GHG-free non-RPS Resource	-	-	-	-	GWh	GHG-Free
Coal						
Coal	-	-	-	-	GWh	n/a



lse_unique_contract_id	resource	alternative_resource_name contract_status	project_interconnection_position	interconnection_substat on	marginal_addition	marginal_add tion_to	total_nameplate_capacity	contracted_nameplate_capacity	sep_contracted_mw_nqc	contract_gwh_annual	s_hybrid_paired	can_charge_from_grid
Ost om_MCE	WHEATL_6_LNDFIL PEABDY 2 LNDF L	Online		NA NA	NA.	NA NA		2	2	12	NotHyb d	
Hay MCE Geyse s MCE	GEYS13 7 UNIT13	Online Online		NA NA	NA NA	NA NA		2 10	2 10	11 88	NotHyb d NotHyb d	
L ncoln MCE Voyage II MCE	PLSNTG 7 LNCLND VOYAGR 2 VOYWD3	Online Online		NA NA	NA NA	NA NA		5	4 5	27 138	NotHyb d NotHyb d	
WM MCE Antelope 2 MCE	NOVATO & INDEL	Online		NA NA	NA.	NA NA		4 105	3 12	30 289	Mottlish d	
Cooley I MCE Cost Plus MCE	BGSKYN 2 AS2ST1 EXISTING GENER C SOLAR FIXED EXISTING GENER C SOLAR FIXED	Online Online Online		NA NA	NA NA NA	NA NA NA	1	1	0	2	NotHyb d NotHyb d NotHyb d	
Dese t Ha vest MCE F eethy 1 MCE	DSRTHV 2 DH1SR1	Online Online		NA NA	NA NA	NA NA	1	1 80	9	1 252	NotHyb d	
F eethy 1 MCE F eethy 2 MCE G eat Valley MCE	EXISTING GENER C SOLAR FIXED EXISTING GENER C SOLAR FIXED TRNQL8 2 ROISR1	Online Online Online		NA NA	NA NA	NA NA	1	1	0	2 2	NotHyb d NotHyb d NotHyb d	
G eat Valley MCE L ttle Bea 1 MCE	TRNQL8 2 ROJSR1 LTBERA 1 LB1SR1	Online Online		NA NA	NA NA	NA NA		100 40	11 4	285 105	NotHyb d NotHyb d	
	ITREAR 1 IRRSR3			NA NA	NA NA	NA NA		20	2	52 132		
L ttle Bea 4 MCE L ttle Bea 5 MCE	LTBEAR 1 LB45R4 LTBEAR_1_LB45R5 EXISTING GENER C SOLAR FIXED	Online Online		NA NA	NA NA	NA NA		50	6	132	NotHyb d NotHyb d	
SRA po t MCE Mustang MCE Soscal Fe y Sola C_MCE	MSTANG 2 SOLAR4 EXISTING GENER C SOLAR FIXED	Online Online		NA NA	NA.	NA NA	· ·	30	3	82	NotHyb d NotHyb d	
Soscal Fe y Sola D MLE	EXISTING GENER C SOLAR FIXED	Online Online Online		NA NA	NA NA	NA NA	1	1	0	3	NotHyb d NotHyb d NotHyb d	
Ame can Canyon Sola A MCE Ame can Canyon Sola B MCE	EXISTING GENER C SOLAR FIXED EXISTING GENER C SOLAR FIXED	Online Online		NA NA	NA NA	NA NA	1	1 1	0	3	NotHyb d NotHyb d	
Ame can Canyon Sola C MCE S Ive a Ranch A MCE	EXISTING GENER C SOLAR FIXED EXISTING GENER C SOLAR FIXED	Online Online		NA NA	NA NA NA	NA NA NA	1	1	0	3	NotHyb d NotHyb d	
S Ive a Ranch B_MCE SR A po t 2 MCE	EXISTING GENER C SOLAR FIXED EXISTING GENER C SOLAR FIXED	Online Online		NA NA	NA NA	NA NA	1	1	0	3	NotHyb d NotHyb d	
	EXISTING GENER C SOLAR FIXED	Online		NA NA	NA.	NA NA	î	1	0	1	NotHyb d	
Oakley RV & Boat Sto age MCE DRES Qua y 2.4 MCE	EXISTING GENER C SOLAR FIXED EXISTING GENER C SOLAR FIXED	Online Online		NA NA	NA NA	NA NA	0	0	0	1	NotHyb d NotHyb d	
Co co an MCE GooseLake MCE	CORCAN_1_SOLAR2 GOOSLK 1 SOLAR1	Online Online		NA NA	NA NA	NA NA		11	1	27 30	NotHyb d NotHyb d	
Buck MCE MCE Sola 1_8.5_MCE	EXISTING GENER C SOLAR FIXED R CHMN 1 CHVSR2	Online Online		NA NA	NA NA	NA NA	1	1 9	0	2 17	NotHyb d NotHyb d	
MCE Sola 1 2.0 MCE	R CHMN 1 SOLAR	Online		NA NA	NA.	NA NA		2	0	4	NotHvb d	
Ke n Tule PCC1 1 LT MCE S lve a Ranch C_MCE	KRNCNY 6 UNIT _EXISTING_GENER C_SOLAR_FIXED	Online Online		NA NA	NA NA	NA NA	1	11 1	0	37 3	NotHyb d NotHyb d	
Lake He man PCC1 1 LT MCE By on Sola PCC1 1 LT MCE	EXISTING GENER C SOLAR FIXED EXISTING GENER C SOLAR FIXED	Online Online		NA NA	NA NA	NA NA	5 3	5	0	13 8	NotHyb d NotHyb d	
St auss PCC1 1 LT MCE By on Sola PCC1 2 LT MCE	STRAUSSWIND EXISTING GENER C SOLAR FIXED	Development Online	WDT-1320	NA NA	NA NA	NA NA	1	1	0	3	NotHyb d NotHyb d	
Haywo th PCC1 1 LT MCE	EXISTING GENER C SOLAR FIXED	Online		NA.	NA.	NA NA	1	1	0	2	NotHyb d	
Haywo th_PCC1_1_LT_MCE Fallon PCC1_1 LT MCE RPCA PCC1_1 LT MCE	EXISTING GENER C SOLAR FIXED EXISTING GENER C SOLAR FIXED NEW GENERIC SOLAR FIXED	Online Online Development		NA B entwood 2105	NA NA	NA NA	5	5	0	13	NotHyb d NotHyb d	
Napa_PCC1_1_LT_MCE CMSA PCC1 2 LT MCE EBCE PCC1 Sale 1 MCE	EXISTING GENER C SOLAR FIXED EX STING GENER C BIOMASS/WOOD GOOSLK 1 SOLAR1	Online Online Online		NA NA	NA NA NA	NA NA NA	1	1	0	1 3	NotHyb d NotHyb d NotHyb d	
	CORCAN 1 SOLAR2	Online Online		NA NA	NA.	NA NA			0	8	NotHyb d NotHyb d	
PCEA PCC1 Sale 1 MCE Golden Felds PCC1 LT MCE Ranch Se eno PCC1 LT MCE	GOOSLK 1 SOLAR1 NEW GENERIC SOLAR 1AXIS NEW GENERIC SOLAR 1AXIS	Online	0.000	NA NA	NA NA	NA NA	100	100	0 103	10 272	NotHyb d	NO.
Ranch Se eno PCC1 LT MCE	NEW GENERIC SOLAR TAXIS	Development Development	Q:1212 WDT:2597	NA NA	NA.	NA NA	2	2	103	5	NewSola NewSto age NewSola NewSto age	NO NO
CES Elect on Fa m PCC1 DAC 1 LT MCE CES Elect on Fa m PCC1 DAC 2 LT MCE Daggett PCC1 1 LT MCE	NEW GENERIC SOLAR 1AXIS NEW GENERIC SOLAR 1AXIS NEW GENERIC SOLAR 1AXIS	Development Development			NA NA	NA NA	4	4	0	1 12	NotHyb d NotHyb d NewSola NewSto age	
Ma sh Land ng LLC RA 1 BAF MCE	NEW GENERIC SOLAR 1AXIS COCOPP 2 CTG4	Development Online	Q-1314	NA NA	NA NA	NA NA	110	110 81	66 77	317 0	NotHvb d	NO
WELLHEAD_RA_3_POF_MCE CALPINE RA 35 S F MCE	COCOPP 2 CTG4 AGRICO_7_UNIT BOGUE 1 UNITA1	Online Online		NA NA	NA NA	NA NA		50	48	0	NotHyb d NotHyb d	
CALPINE RA 34 NS MCE	SUTTER 2 CISO	Online		NA NA	NA NA	NA NA		70	70	0	NotHyb d	
CALPINE_RA_44_NS_MCE CALPINE RA_67 NS_MCE CALPINE RA_68 NSF MCE	EXISTING GENERIC COMBINED CYCLE EXISTING GENERIC COMBINED CYCLE EXISTING GENERIC COMBINED CYCLE	Online Online Online		NA NA	NA NA	NA NA NA		25 15	25 15	0	NotHyb d NotHyb d NotHyb d	
CALPINE RA 68 NSF MCE ENERSPONSE_RA_2_SS_MCE	EXISTING GENERIC COMBINED CYCLE _EXISTING_GENER C_DR	Online Online		NA NA	NA NA	NA NA	20	15 20 185	15 20	0	NotHyb d NotHyb d	
HecateSto age RA 2024 FRMIID R1 MCF	EXISTING GENER C DR NEW GENERIC BATTERY STORAGE CAMCHE 1 PL1X3	Development Online		NA NA	NA.	NA NA	185 10	185	185 0	0 46	NotHyb d NotHyb d NotHyb d	
EBMUD B1 MCE SENA CF 13 MCE	PARDEB 6 UNITS EX STING GENERIC INSTATE LARGE HYDRO	Online Online		NA NA	NA NA	NA NA	30		0	140	NotHyb d NotHyb d	
MSCG_CF_5_MCE B ookf eld CF 4 MCE	EX STING GENERIC INSTATE DAGE HIDRO EX STING GENERIC NW HYDRO EX STING GENERIC NW HYDRO	Online Online		NA NA	NA NA	NA NA			0	400	NotHyb d NotHyb d	
TENASKA CF 2 MCE	EXCHEC 7 UNIT1	Online		NA NA	NA NA	NA NA	95		0	120	NotHyb d	
POWEREX CF 3 MCE	EX STING GENERIC NW HYDRO EX STING GENERIC NW HYDRO	Online Online		NA NA	NA NA	NA NA			0	250 206	NotHyb d NotHyb d	
Powe ex CF 5 MCE WAPA_BR_MCE	EX STING GENERIC NW HYDRO EX STING_GENERIC_INSTATE_LARGE_HYDRO	Online Online		NA NA	NA NA	NA NA			0	100 25	NotHyb d NotHyb d	
WAPA BR 2 MCE GHGF ee A locat on	EX STING GENERIC INSTATE LARGE HYDRO EX STING GENERIC INSTATE LARGE HYDRO	Online PlannedEx st ng		NA NA	NA.	NA.			0	25 500	NotHyb d NotHyb d	
DR I t	EXISTING GENER C DR	O.I.							19	0	N tH	
Gene cLTW nd NM 2030	CREZ GENER C NEW MEX CO WIND	Planned New	wind import planned				70	70	20	250	NotHyb d	
Gene cLTW nd_2033 Gene cLT Geothe mail 2030 MTR LDS 2026	EZ_GENER C_MORRO_BAY_OFFSHORE_WIN NEW GENERIC GEOTHERMAL NEW GENERIC BATTERY STORAGE	ID PlannedNew PlannedNew PlannedNew	w nd_ca so_planned geothe mail_mpo_t planned				75 75	75 75	70	580	NotHyb d NotHyb d	
VAMO_ST_B omass VAMO_ST_Sola_PV			batte y ca so planned				40	40	4Ú 0	0 33	NotHyb d NotHyb d NotHyb d	
VAMO ST W nd	EXISTING GENER C SOLAR FIXED EXISTING GENERIC WIND	Online Online		 					0	206 165	NotHyb d	
VAMO ST Small Hyd o	EX STING GENERIC INSTATE SMALL HYDRO	Online Online							0	14 70	NotHyb d	
VAMO ST Geothe mal Gene c STB omass	EX STING GENERIC GEOTHERMAL EX STING GENER C BIOMASS/WOOD EXISTING GENERIC SOLAR EIVED	Online PlannedEx st ng							ŏ	20	NotHyb d NotHyb d	
Gene cSTSola Gene cSTW nd Gene cSTSmall Hyd o	EXISTING GENER C SOLAR FIXED EXISTING GENERIC WIND EX STING_GENERIC_INSTATE_SMALL_HYDRO	PlannedEx st ng PlannedEx st ng PlannedEx st ng PlannedEx st ng							0	99 378	NotHyb d NotHyb d NotHyb d	
Gene c ST Geothe mal	EX STING GENERIC GEOTHERMAL								0	125	NotHyb d	
Gene cSTLa geHyd o/ACS Gene cLDS_2030	EX STING GENERIC NW HYDRO NEW GENERIC BATTERY STORAGE	PlannedEx st ng PlannedNew	batte y_ca so_planned	-			50	50	0 50	144 0	NotHyb d NotHyb d	
Gene c 4 Hou Sto age 2028	NEW GENERIC BATTERY STORAGE NEW GENERIC BATTERY STORAGE	PlannedNew	batte y ca so planned batte y ca so planned				200 200	200 200	200 200	0	NotHyb d NotHyb d NotHyb d	
Gene c CCGT RA_2023 Gene c CCGT RA 2024	EXISTING GENERIC COMBINED CYCLE EXISTING GENERIC COMBINED CYCLE EXISTING GENERIC COMBINED CYCLE	PlannedNew PlannedEx st ng PlannedEx st ng	sacre y ca so pranned				750	750 686	750 686	0	Nothyb d Nothyb d Nothyb d	
	EXISTING GENERIC COMBINED CYCLE			<u> </u>			686 639	639	639	0	NotHyb d	
Gene c CCGT RA 2026 Gene c CCGT RA 2027	EXISTING GENERIC COMBINED CYCLE EXISTING GENERIC COMBINED CYCLE	PlannedEx st ng PlannedEx st ng	-	—			731 672	731 672	731 672	0	NotHyb d NotHyb d	
Gene c CCGT RA_2028 Gene c CCGT RA 2029	EXISTING GENERIC COMBINED CYCLE EXISTING GENERIC COMBINED CYCLE	PlannedEx st ng PlannedEx st ng					498 535	498 535	498 535	0	NotHyb d NotHyb d	
Gene c CCGTRA 2030 Gene c CCGTRA_2031	EXISTING GENERIC COMBINED CYCLE EXISTING GENERIC COMBINED CYCLE EXISTING GENERIC COMBINED CYCLE	PlannedEx st ng PlannedEx st ng PlannedEx st ng					425 518	425 518	425 518	ő	NotHyb d NotHyb d	
Gene c CCGT RA 2032	EXISTING GENERIC COMBINED CYCLE EXISTING GENERIC COMBINED CYCLE	PlannedEx st ng PlannedEx st ng					542	518 542	542	0	NotHyb d	
Gene c CCGT RA 2032 Gene c CCGT RA 2033 Gene c CCGT RA 2034	EXISTING GENERIC COMBINED CYCLE EXISTING GENERIC COMBINED CYCLE EXISTING GENERIC COMBINED CYCLE	PlannedEx st ng PlannedEx st ng PlannedEx st ng PlannedEx st ng					530 541	542 530 541	530 541	0	NotHyb d NotHyb d NotHyb d	
Gene c CCGT RA 2035 RESI RA 2 NS MCE	EXISTING GENERIC COMBINED CYCLE NEW GENERIC DR	PlannedEx st ng Rev ew	d caso planned	-			549 15	549 15	549 15	0	NotHyb d NotHyb d	
PGE Online cogt 1 PGE Online cogt 2	EXISTING GENERIC COMBINED CYCLE EXISTING GENERIC COMBINED CYCLE	Online Online	о свяо рівнию					44	44 20	0	NotHyb d NotHyb d	
PGE Online ccgt 2 PGE Online ccgt 3 PGE Online chp	_EXISTING_GENERIC_COMBINED_CYCLE	Online Online						39 61	39 61	0	NotHyb d	
	EXISTING GENERIC COGEN EXISTING GENERIC COGEN	cost me Cost ne Cost ne Cost ne Cost ne Cost ne Cost ne						4 3	4 0	0 5	NotHyb d NotHyb d NotHyb d	
PGE Online_chp_2 PGE Online_batte y PGE Development_batte y 1	_EXISTING_GENERIC_COGEN EX STING GENER C BATTERY STORAGE NEW GENERIC BATTERY STORAGE	Online Online						1 23	1 23	7 0	NotHyb d	
PGE Development batte y 1 PGE_Development_batte y_2	NEW GENERIC BATTERY STORAGE NEW GENERIC BATTERY STORAGE	Online Development Development						6	5	0	NotHyb d NotHyb d NotHyb d	
r sac consuspinionic pattery 2		Development	i	1			1		~		t mounty0 0	

Ise_unique_contract_id	total_generator_mw	contracted_generator_mw	total_storage_mw	contracted_storage_mw	solar_technology_sub_type	storage_technology_sub_type	total_storage_depth_mwh	contracted_storage_depth_mwh	viability_cod_reasonableness	viabil ty_technical_feasibility	viability_f nancing_sitecontrol	resource_mix	d1911016_vamo_ghgfree	buy_sell_own
Ost om_MCE														
Ost om_MCE Hay MCE Geyse s MCE L ncoin MCE Voyage II MCE														
L ncoln MCE Voyage II MCE														
Voyage II MCE WM MCE WM MCE Goolley I MCE Coolley I MCE Coot Plus MCE Door tha vice MCE F earby 1 MCE G exthy 1 MCE F earby 1 MCE L title Box 1 MCE L title Box 3 MCE L title Box 4 MCE					1Ax s									
Cooley I MCE Cost Plus MCE					1Ax s F xed F xed									
Dese t Ha vest MCE F eethy 1 MCE														
F eethy 2_MCE G eat Valley_MCF					F xed F xed 1Ax s									
Little Beal 1 MCE					1Ax s 1Ax s									
Little Boa 4 MCE Little Boa 5 MCE Little Boa 5 MCE SRA po t MCE Mustang MCE Soscal Fe y Sola C MCE Soscal Fe y Sola D MCE Anne Can Caryon Sola A MCE Anne Can Caryon Sola A MCE														
SRA po t MCE					1Ax s F xed									
Soscal Fe y Sola C_MCE					1Ax s F xed									
Ame can Canyon Sola A MCE					F xed F xed									
Ame can Canyon Sola B MCE Ame can Canyon Sola C MCE Sive a Ranch A MCE					F xed F xed									
S Ive a Ranch B MCE					F xed F xed									
S Ne a Ranch B, MCE SR A po 12 MCE SR A po 12 MCE EO P oducts MCE Caldey RV & Boat Sto age MCE DRES Qua y 2.4 MCE					Fixed Fixed Fixed Fixed Fixed									
Oakley RV & Boat Sto age MCE DRES Qua y 2.4 MCE					F xed F xed									
Co co an MCE					F xed F xed									
Buck MCE Buck MCE MCE Sola 1 8.5 MCE MCE Sola 1 2.0 MCE Ke n Tule PCC1 1 1T MCE S Ive a Ranch C MCE		`			F xed F yed		·	`						
MCE Sola 1 2.0 MCE Ke n Tule PCC1 1 LT MCE					Fxed									
S Ive a Ranch C_MCE Lake He man PCC1 1 LT MCE By on Sola PCC1 1 LT MCE				· · · · · · · · · · · · · · · · · · ·	F xed F xed F xed		· · · · · · · · · · · · · · · · · · ·							
By on Sola PCC1 1 LT MCE St auss PCC1 1 LT MCE	· · · · · · · · · · · · · · · · · · ·								4	3	5			
By on Sola PCC1 2 LT MCE Haywo th PCC1_1 LT MCE			-		F xed F xed						<u> </u>		· ·	
St auss PCC1 1 LT MCE By on Sola PCC1 2 LT MCE Haywo th PCC1 1 LT MCE Fallon PCC1 1 LT MCE RPCA PCC1 1 LT MCE					F xed F xed F xed F xed				4	3	4			
Napa PCC1 1 LT MCE CMSA PCC1 2 LT MCE EBCE PCC1 Sale 1 MCE					F xed									
EBCE PCC1 Sale 1 MCE SICE PCC1 Sale 1 MCE					F xed F xed									Sell Sell
SICE PCC1 Sale 1 MCE PCEA PCC1 Sale 1 MCE Golden Felds PCC1 LT MCE Ranch Se eno_PCC1_LT_MCE	100	100	67	02	F xed F xed		240	250	4	,	,			Sell Sell
Ranch Se eno PCC1_LT_MCE	2	2	92 0 8	0.8	1Ax s F xed	Ĺ	368 3 2	368 3.2	4	3	3			
CES Elect on Fa m PCC1 DAC 2 LT MCE	110	110	60	60	F xed F xed 1Ax s		240	240	4	3	3			
Ranch Se eno PCCL LT MCE CES Blect on Fam PCCL DAC 2 LT MCE CES Blect on Fam PCCL DAC 2 LT MCE Diagnet PCCL 1 LT MCE Mas h Land ngLLC RA 1 BAF MCE MS sh Land ngLLC RA 1 BAF MCE CALPINE RA 3 S F MCE CALPINE RA 3 S F MCE CALPINE RA 3 M NMCE CALPINE RA 4 S M NMCE CALPINE RA 6 F NS MCE CALPINE RA 6 S NS MCE DESSPROME RA 2 S NMCE	440	440		- O	470.4		A-10	270	,	,	1			
CALPINE RA 35 S F MCE														
CALPINE RA 34 NS MCE														
CALPINE RA 68 NSF MCE														
ENERSPONSE_RA_2_SS_MCE Hecate Sto age RA_2024 EBMUD B1_MCE						L	740	740	4	3	5			
EBMID B1 MCE EBMID B1 MCE SENA CF 13 MCE														
MSCG_CF_5_MCE B oolf eld CF 4 MCE														
B cold eld CF 4 MCE TENASKA CF 2 MCE														
TENASKA CF 2 MCE POWERX CF 3 MCE Powe ex CF 4 MCE														
Powe ex CF 5 MCE WAPA_BR_MCE														
WAPA BR 2 MCE GHGF ee A locat on DR A locat on													GHG f ee PCIA	Buy
DR A locat on														Buy
OS22 New W nd 2026 Gene c LTW nd NM 2030 Gene c LTW nd 2033 Gene c LTGeothe mal 2030 MTR LDS 2026									1	2 2	1			
Gene cLTW nd 2033 Gene cLTGeothe mai 2030									1	2 2	1 1			
MTR LDS 2026 VAMO ST B omass						L	320	320	1	1	1		VAMO	Buy
VAMO_ST_B omass VAMO_ST Sola_PV VAMO_ST_W nd													VAMO VAMO VAMO	Buy Buy Buy
VAMU 51 Sola PV VAMO 5T W nd VAMO 5T Small Hyd o VAMO 5T Geothe mal Gene c5T6 omass Gene c5T5ola													VAMO VAMO VAMO	Buy Buy
Gene c STB omass													TORNS.	5007
Gene CSTW nd														
Gene c ST W nd Gene c ST Small Hyd o Gene c ST Geothe mal														
						L	400 800	400 800	1	1	1			
Gene c LDS 2030 Gene c 4 Hou Sto age 2028 Gene c 4 Hou Sto age 2034						L L	800	≥00 800	1	2 2	1 1			
Gene cCCGTRA_2023 Gene cCCGTRA 2024 Gene cCCGTRA 2025														
Gene c CCGT RA 2025 Gene c CCGT RA 2026														
Gene CCCGTRA 2025 Gene CCCGTRA 2027 Gene CCCGTRA 2027 Gene CCCGTRA 2029 Gene CCCGTRA 2029 Gene CCCGTRA 2030 Gene CCCGTRA 2031 Gene CCCGTRA 2031														
Gene c CCGT RA 2029 Gene c CCGT RA 2030							·		-		<u> </u>			
Gene c CCGT RA 2031 Gene c CCGT RA 2032														
Gene c CCGT RA 2033 Gene c CCGT RA 2034														
Gene c CCGT RA 2033 Gene c CCGT RA_2034 Gene c CCGT RA 2035 RESI RA 2 NS MCE									4	3	5			
PGE Online cogt 1 PGE Online cost 2									,	1			CAM CAM CAM	
													CAM	
PGE Online ccgt 3														
PGE Onl ne_ccgt_3 PGE Onl ne chp PGE Onl ne chp 1 PGE Onl ne chp 1													CAM CAM	
RES RA 2 YO MUL. PEE OF the Cogt 1 PEE Of the Cogt 1 PEE Of the Cogt 3 PEE Of the Cogt 1 PEE Of the Cog 1 PEE Of the Cog 2 PEE Of the Cog 2 PEE Of the Cogt 2 PEE Of the Cogt 2 PEE Of the Cogt 3 PEE Overdopment batte y 1 PEE Overdopment batte y 2						L		93.23439546 23.30859887 0.385368835					CAM CAM CAM CAM CAM CAM CAM	

Ise_unique_contract_id	counterparty	generator_supplier	developer_name	capacity_area	capacity_sub_area	cpuc_approval_ref	county	COD_year	COD_month	COD_day	contract_start_date_year	contract_start_date_month	contract_start_date_day	contract_end_date_year	contract_end_date_month	contract_end_date_day
Ost om_MCE			NA NA	S e a PacGE No thCoastNo thBay			YubaCounty	2013 2013	7	1	2013 2013 2017	7	1	2031 2033	6	30
Hay MCE Geyse s MCE			NA NA	No thCoastNo thBay			SolanoCounty SonomaCounty	1980	1	i	2013 2017	1	1	2026	12	31 13
L ncoln MCE Voyage II MCE			NA NA	S e a SCE			Place County Ke nCounty	1985 2018	12	29	2013 2018	12	29	2033 2030	12	28
WM_MCE Antelope 2 MCE Cooley1 MCE			NA NA	No thCoastNo thBay B gC eekVentu a G eate Bay	No sub a ea		Ma nCounty LosAngelesCounty Ma nCounty	2017 2019 2017	1	1	2017 2019 2017	1	14	2037 2038 2037	12	31
Cost Plus_MCE			NA NA	G eate Bay SCE			Ma nCounty Ma nCounty	2017	9	1	2017	9	1	2037 2036 2040	8	28 31
Cost Plus_MCE Dose t Ha vest_MCE F eethy 1_MCE			NA NA	G eate Bay			R ve s deCounty Cont aCostaCount	2020 2016	12 10	17 6	2016 2020 2016	12 10	17 6	2036	12 10	16 5
G eat Valley MCE			NA NA	G eate Bay G eate F esno			Cont aCostaCount F esnoCounty	2016 2018	10 4	6 14	2016 2018	10 4	6 14	2036 2033	10 4	5 13
L ttle Bea 1 MCE L ttle Bea 3 MCE			NA NA	G eate F esno G eate F esno			F esnoCounty F esnoCounty	2020 2020	12 12	10 10	2020 2020	12 12	10 10	2040 2040	12 12	9 9
L ttle Bea 4 MCE L ttle Bea 5 MCE SRA pot MCE			NA NA	G eate F esno G eate F esno			F esnoCounty F esnoCounty	2020 2020 2012	12 12	10 10	2020 2020 2012	12 12	10 10	2040 2040	12 12	9
SRA po t MCE Mustang MCE			NA NA				Ma nCounty K ngsCounty	2012 2015 2020	10 6	23 25	2012 2015	10 6	23 25	2032	10 12	22 31
Mustang MCE Soscal Fe y Sola C_MCE Soscal Fe y Sola D MCE			NA NA	G eate F esno PacGE PacGE			NapaCounty NapaCounty	2020 2020	12 12	11 11	2015 2020 2020	8	30 30	2032 2040 2040	8 8	29 29
Ame can Canyon Sola A MCE			NA NA				NapaCounty	2019	9	24 24	2019	9	1	2039	8 8	31
Ame can Canyon Sola B MCE Ame can Canyon Sola C MCE S Ive a Ranch A MCE			NA NA	PacGE PacGE PacGE			NapaCounty NapaCounty Ma nCounty	2019 2019 2021	9	24	2019 2019 2021	9	1	2039 2039 2041	8	31
S Ive a Ranch B MCE SR A po t 2 MCE			NA NA	PacGE PacGE			Ma nCounty Ma nCounty	2021 2020	3 8	30 28	2021 2020	3	30 30	2041 2040	3	29 29
			NA NA					2018	12	10	2018	12	10		12	9
Oakley RV & Boat Sto age MCE DRES Qua y 2.4 MCE			NA NA	G eate Bay G eate Bay G eate F esno			Cont aCostaCount Ma nCounty	2018 2019	5	24	2018 2019	5	14	2038 2039	5	13
Co co an MCE GooseLake MCE			NA NA				K ngsCounty K ngsCounty	2015 2015	5	22	2015 2015	5	22	2040 2040	4	30
Buck MCE MCESola 1_8.5_MCE			NA NA	G eate Bay G eate Bay	No_sub_a ea		Ma nCounty Cont aCostaCount	2015 2017	12	22	2015 2017	5 12	22 22	2040 2037	4 12	30 21
MCESola 1 2.0 MCE Ken Tule PCC1 1 LT MCE Sive a Ranch C_MCE			NA NA	G eate Bay PacGE PacGE	No sub a ea		Cont aCostaCount Ke nCounty NapaCounty	2017 2021 2021	12 6	9	2017 2021 2021	7	22 5	2037 2036 2041	12 7	21 4
			NA NA				SolanoCounty	2021 2021	3 9	30 14	2021 2021	3 9	30 30	2041 2041	3 9	29 29
By on Sola PCC1 1 LT MCE St auss PCC1 1 LT MCE			NA BayWa RE	PacGE PacGE PacGE	No sub a ea		Cont aCostaCount antaBa ba aCount	2022	5	21	2022	5	21	20 2	5	20
By on Sola PCC1 2 LT MCE			NA NA	PacGE PacGE			cont aCostaCount Cont aCostaCount	2021 2022	12	10 7	2021 2021	12 10	1	2041 2041	11 9	30 30
RPCA PCC1 1 LT MCE			NA RPCA Sola 3, LLC	PacGE PacGE PacGE			Cont aCostaCount Ma nCounty Cont aCostaCount	2022 2022	4 11	4 30	2021 2021 2022	12 11	1 30	2041 2042	11 11	30 29
Napa PCC1 1 LT MCE			NA NA	PacGE				2022	4 7	13 15	2021	11 7	1 16	2041	10 7	31 15
CMSA PCC1 2 LT MCE EBCE PCC1 Sale 1 MCE SICE PCC1 Sale 1 MCE	East Bay Commun ty Ene gy San Jose Clean Ene gy		NA NA	G eate Bay G eate F esno G eate F esno			Ma nCounty K ngsCounty K ngsCounty	2022 2015 2015	5 5	22 27	2022 2021 2021	9	6	2032 2024 2024	12 17	31 31
PCEA PCC1 Sale 1 MCE Golden Felds PCC1 LT MCE Ranch Se eno_PCC1_LT_MCE	Pen nsula Clean Ene gy Autho ty		NA.	G eate F esno SCE PacGE	No sub a ea		K ngsCounty	2015	5	22	2022 2022 2025 2024	1	17	2024 2024 2040 2044	12	31
Ranch Se eno PCC1 LT MCE			Clea way Ene gy G oup Ranch Se eno Clean Powe LLC	PacGE PacGE	reo suò à eà		Ke nCounty Cont aCostaCount	2025 2024	2	22	2025 2024	2	1 22 2*	2040 2044	2	21
CESElect on Fa m PCC1 DAC 1 LT MCE CESElect on Fa m PCC1 DAC 2 LT MCE Daggett PCC1 1 LT MCE			CES Elect on Fa m One, LLC CES Elect on Fa m One, LLC	PacGE PacGE SCE	No. and		F esnoCounty F esnoCounty anBe na d noCoun	2023 2023	12	31 31	2023 2023 2023	12 12	31 31	2043 2043	12	30 30
			Clea way Ene gy G oup NA	G eate Bay	No sub a ea	Si		2023	5	28 1	2023 2023 2020	8 5	28 1	2038 2026	8 9	27 30
WELLHEAD_RA_3_POF_MCE CALPINE RA 35 S F MCE			NA NA	G eate F esno S e a			F esnoCounty Sutte County	2001 2002	1 12	1 23	2023	1 1	1	2030 2024	12 12	31 31
CALPINE RA 34 NS MCE CALPINE_RA_44_NS_MCE			NA NA	BANC PacGE	No sub a ea		Sutte County Cal fo n a	2001	7	1	2021 2022	1 1	1	2023 2028	12 12	31 31
CALPINE RA 67 NS MCE CALPINE RA 68 NSF MCE	<u> </u>		NA NA	PacGE PacGE PacGE PacGE SCE Stockton			Cal fo n a Cal fo n a				2022	7	1	2030	12 12	31 31
ENERSPONSE_RA_2_SS_MCE			NA Hecate G d	PacGE SCE	-	-	Cal fon a	2024	4	1	2023 2024	4 4	1	2025 2034	12 3	31 31
Hecate Sto age RA 2024 EBMUD B1 MCE EBMUD B1 MCE			NA NA	Stockton PacGE			LosAngelesCounty SanJoaqu nCounty Calave asCounty	2024 1983 1930	1	1		7	1 1		6 12	30 31
SENA CF 13 MCE			NA NA	PacGE PacGE PACW			Cal to n a				2023 2024 2021	1 1	1	2024 2024 2024	12	31
MSCG_CF_5_MCE B oold eld CF 4 MCE TENASKA CF 2 MCE			NA NA	PACW Se a			O egon Place County	1966	1	1	2021 2022	1	1	2024 2024	12	31 31
POWEREX_CF_3_MCE Powe ex_CF_4_MCE			NA NA	PACW PACW					-		2022 2023 2022	1 5	1 20	2025 2025 2025	12	31 31
Powe ex CF 5 MCE WAPA_BR_MCE			NA NA	PACW BANC			O egon O egon Cal fo n a				2023 2015	1	1	2025 2025 2024	12	31
WAPA BR 2 MCE WAPA BR 2 MCE GHGF ee A locat on	Derfo Go # Class -		NA NA	BANC BANC PacGE			Cal fon a Cal fon a				2015 2025 2024	1	1	2024 2054 2043	12	31
DR A locat on	Pacific Gas & Electiic Pacific Gas & Electiic		NA NA	PacGE			Cal fo n a				2023	1	1	2042	12	31
0522 New W nd 2026			Unknown	SCE			Ke nCounty	2026	1	1	2026	1	1	2045 2049	12	31
Gene cLTW nd NM 2030 Gene cLTW nd 2033 Gene cLTGeothe mal 2030			Unknown Unknown Unknown	PacGE PacGE I D			NewMex co Cal fo n a Impe alCounty	2030 2033 2030	1	1	2030 2033 2030	1	1	2049 2052 2049	12	31 31
MTR LDS 2026			Unknown	PacGE			Cont aCostaCount	2030 2026	1	1	2026	1	1	2045	12	31
VAMO_ST_B omass VAMO_ST_Sola_PV	Pacific Gas & Electiic Pacific Gas & Electiic		NA NA	PacGE PacGE PacGE			Cal fo n a				2023 2023	1	1	2024 2024	12 12	31 31
VAMO ST W nd VAMO ST Small Hyd o	PacfcGas& Elect c PacfcGas& Elect c		NA NA	PacGE			Cal fo n a Cal fo n a				2023 2023	1 1	1	2024 2024	12 12	31 31
VAMO ST Geothe mal Gene c STB omass	Pac f c Gas & Elect c		NA NA	PacGE PacGE			Cal fo n a Cal fo n a				2023 2023	1 1	1	2024 2042	12 12	31 31
Gene cSTSola Gene cSTW nd Gene cSTSmall Hyd o			NA NA NA	PacGE PacGE PacGE			Cal fon a Cal fon a Cal fon a				2023 2023 2023	1 1	1	2042 2042 2042	12 12	31 31
Gene c ST Geothe mal			NA				Cal fo n a				2023	1 1	1	2042	12 12	31 31
Gene c ST La ge Hyd o/ACS Gene c LDS 2030			NA Unknown	PacGE PacGE PacGE	-		Cal fo n a Cont aCostaCount	2030	1	1	2023 2030	1 1	1	2042 2049	12 12	31 31
Gene c 4 Hou Sto age 2028			Unknown				SolanoCounty	2028 2034	1	1	2028	1 1	1	2047	12 12	31 31
Gene c CCGT RA 2023 Gene c CCGT RA 2024			NA NA	PacGE PacGE			Cal fo n a		-		2023 2024	1	1	2023 2024	12	31 31
			NA NA	PacGE			Cal fo n a				2025	1	1	2025	12	31
Gene c CCGT RA 2026 Gene c CCGT RA 2027			NA NA	PacGE PacGE			Cal fo n a				2026 2027	1	1	2026 2027	12	31 31
Gene c CCGT RA_2028 Gene c CCGT RA_2029			NA NA	PacGE PacGE PacGE PacGE			Cal fo n a				2028 2029	1	1	2028 2029	12	31 31
Gene c CCGT RA 2030 Gene c CCGT RA 2031			NA NA	PacGE PacGE			Cal fon a Cal fon a Cal fon a				2030 2031	1	1	2030 2031	12 12	31 31
Gene c CCGT RA 2032 Gene c CCGT RA 2033 Gene c CCGT RA_2034			NA NA	PacGE PacGE PacGE			Cal fon a Cal fon a Cal fon a				2032 2033 2034	1	1	2032 2033	12 12	31 31
Gene c CCGT RA_2034 Gene c CCGT RA 2035 RESI RA 2 NS MCE			NA NA	PacGE PacGE			Cal fo n a				2035	1	1	2034	12 12	31 31
PGE Online ccgt 1	Pac f c Gas & Elect c		Res Stat on, LLC	PacGE PacGE			Cal fo n a	2023 2018	1	1	2023 2024	1 1	1	2032 2026	12 12	31 31
PGF Online cost 2	Pacific Gas & Electiic Pacific Gas & Electiic				-	-		2018 2018	1	1 1	2024 2024 2024	1 1	1	2025 2024	12 12	31 31
PGE Online ccgt 3 PGE Online chp PGE Online chp 1	Pacific Gas & Electic Pacific Gas & Electic							2018 2018	1	1	2024 2024	1 1	1	2024 2025	12 12	31 31
PGE_Onl ne_chp_2	Pac f c Gas & Elect c							2018	1	1	2024	1	1	2025 2026 2035	12	31
PGE Onl ne batte y PGE Development batte y 1	Pacific Gas & Electic Pacific Gas & Electic							2018 2024 2024	1	1	2024 2025 2024	1	1	2035 2035 2035	12	31 31
PGE_Development_batte y_2	Pac f c Gas & Elect c	1						2024	1	1	2024	1	1	2035	12	51

lse_unique_contract_id	contract_execution_date_year	contract_execut on_date_month	contract_execut on_date_day	tx_upgrades	tx_upgrade_date_year	tx_upgrade_date_month	tx_upgrade_date_day	tx_upgrade_descript on	d1911016_tranche	d2106035_procurement_cat	mtr_tranche1_NQC	mtr_tranche2_NQC	mtr_tranche3_NQC	mtr_tranche4_NQC_LDES	mtr_tranche4_NQC_firm_ZE	mtr_NQC_ZE_gen_paired_dr	previous_COD_year
Ost om_MCE Hav MCE	2010 2010	12 12	3						NA NA	NA NA							
Hay MCE Gøyse s MCE L ncoln MCE	2010 2013 2012	7	11						NA NA	NA NA							
		12	5						NA NA	NA.							
WM_MCE Antelope 2 MCE	2014 2016 2014	11	6 15	NA					NA	NA NA							2017
Cooley I MCE Cost Plus MCE	2014 2015	10	7 14						NA NA NA	NA NA NA							
Cooley1 MCE Cost Plus_MCE Dese t Ha vest MCE F eethy1 MCE	2015 2016 2015	11	14 18						NA NA	NA NA							
F eethy 2_MCE	2015	9	4						NA NA	NA NA							
F eathy 2_MCE G eat Valley_MCE L ttle Bea 1_MCE	2015 2016 2016	9	15 23						NA NA	NA.							
	2016 2016 2016 2012	9	23 23						NA NA	NA NA							
L ttle Bea 4 MCE L ttle Bea 5 MCE SRA po t MCE	2016	9 6	23						NA NA NA	NA NA NA							
Mustang MCE Soscal Fe y Sola C_MCE	2014 2018	10	3						NA NA	NA NA							
Soscal Fe y Sola D MCE	2018 2018	8 8	30 30						NA NA	NA NA							
Ame can Canyon Sola A MCE Ame can Canyon Sola B MCE	2018 2018 2018	8 8	30 30						NA NA	NA NA							
Ame can Canyon Sola C MCE S Ive a Ranch A MCE S Ive a Ranch B MCE SRA po t 2 MCE		8	30						NA NA	NA NA							
S Ive a Ranch B_MCE	2019 2019 2019 2018	3	7						NA NA	NA NA							
SR A po t 2 MCE EO P oducts MCE	2018 2018	10	24 31						NA NA	NA.							
EO P oducts MCE Cakley RV & Boat Sto age MCE DRES Qua y 2.4 MCE	2018 2018 2018	5	8 23						NA NA	NA NA							
Co co an MCE Goose Lake MCE	2011	7	8 8						NA NA	NA NA							$\overline{}$
Buck MCE MCE Sola 1 8.5 MCE	2011 2011 2011 2011 2017	7	8 8 30	NA NA	1				NA NA	NA NA NA							2017
MCE Sola 1 2.0 MCE	2017	5	30	NA NA					3	NA.							2017 2017
MCE Sola 1 2.0 MCE Ken Tule PCC1 1 LT MCE Silve a Ranch C MCE	2020	1 3	7						NA NA	NA NA							
Lake He man PCC1 1 LT MCE By on Sola PCC1 1 LT MCE	2020 2020	7	29 15						NA NA	NA NA							
St auss PCC1 1 LT MCE	2018	10	19	YES				Completed	3 NA	NA NA							2022
St auss PCC1 1 LT MCE By on Sola PCC1 2 LT MCE Haywo th PCC1 1 LT MCE	2018 2020 2021	3	8						NA NA	NA NA							
RPCA PCC1 1 LT MCE	2021 2021 2021	4 3	5 29						NA NA	NA NA							
Napa PCC1 1 LT MCE	2021 2021	7	14 16						NA NA	NA NA						<u> </u>	
CMSA PCC1 2 LT MCE EBCE PCC1 Sale 1 MCE SICE PCC1 Sale 1 MCE PCEA PCC1 Sale 1 MCE	2021 2021 2021	9	6						NA NA	NA NA							
PCEA PCC1 Sale 1 MCE		11	29						NA NA	NA NA							
Golden Fields PCC1 LT MCE Ranch Seieno_PCC1_LT_MCE CES Election Faim PCC1_DAC 1 LT MCE	2022 2022 2022 2022 2022 2022 2020	2 2	23	YES NO	2024	10	1		NA NA	gene al & ZE gen pa ed d NA			75			61.3	
CES Elect on Fa m PCC1 DAC 1 LT MCE CES Elect on Fa m PCC1 DAC 2 LT MCE	2022 2022	3	20 20						NA NA NA	NA NA							
CESElect on Farm PCCL DAC 2 LT MCE Daggett PCC1 1 LT MCE Ma sh Land ngLLC RA 1 BAF MCE WELLHEAD_RA_3_POF_MCE	2020 2022	9 7	25 26	YES					NA NA	NA gene al & ZE gen pa ed d NA	58	7.9				48.1	2022
WELLHEAD_RA_3_POF_MCE		8	1						NA NA	NA NA							
CALPINE RA 35 S F MCE CALPINE RA 34 NS MCE	2020	2	28	NA					NA 182	NA NA							2001
CALPINE RA 44 NS MCE CALPINE RA 67 NS MCE CALPINE RA 68 NSF MCE									NA NA NA	NA NA NA							
									NA NA	NA NA							
Hecate Sto age RA 2024 EBMUD B1 MCE	2022 2015	8	4 22						NA NA	gene al NA		167.795					
	2015	6	22 26						NA NA	NA NA							
SENA CF 13 MCE MSCG_CF_5_MCE B oold old CF 4 MCE	2019 2020 2020	9	15						NA NA	NA NA							
TENASKA CF 2 MCE	2020	12	14 17						NA NA	NA NA							
TENASKA CF 2 MCE POWEREX CF 3 MCE Powe ex CF 4 MCE	2021 2022 2022	4 5	11 18						NA NA	NA NA NA							
Powe ex CF 5 MCE WAPA BR MCE	2022 2011	5 12	18 14						NA NA	NA NA							
WAPA BR 2 MCE GHGF ee A locat on	2021	3	18						NA NA	NA NA							
DR A locat on									NA NA	NA.							
0522 New W nd 2026									NA NA	NA NA							
									NA NA	NA NA							
Gene cLTW nd 2033 Gene cLTGeothe mail 2030 MTR LDS 2026									NA NA NA	NA long du at on sto age				31.28			
VAMO_ST_B omass									NA NA NA	long du at on sto age NA NA				34.40			
VAMO_ST_B omass VAMO_ST_Sola_PV VAMO_ST_W nd VAMO_ST_Small Hyd_o									NA NA	NA.							
VAMO ST Small Hyd o VAMO ST Geothe mai									NA NA	NA NA							
VAMO ST Geothe mal Gene cSTB omass Gene cSTSola									NA NA NA	NA NA NA							
Gene c ST W nd Gene c ST Small Hyd o									NA NA	NA NA							
Gene c ST Geothe mal									NA NA	NA.							
Gene cSTLa ge Hyd o/ACS Gene cLDS_2030	<u> </u>								NA NA	NA NA		<u> </u>					
Gene c 4 Hou Sto age 2028	+				_		-		NA NA							-	$\vdash = \vdash$
Gene c 4 Hou Sto age 2034 Gene c CCGT RA_2023 Gene c CCGT RA_2024									NA NA	NA NA NA							
Gene c CCGT RA 2025									NA NA	NA NA							
Gene c CCGT RA 2025 Gene c CCGT RA 2026 Gene c CCGT RA 2027									NA NA	NA NA NA							
Gene c CCGT RA_2028 Gene c CCGT RA 2029									NA NA	NA NA							
Gene c CCGTRA 2030 Gene c CCGTRA 2031 Gene c CCGTRA 2032									NA NA	NA NA							
Gene c CCGT RA 2032									NA NA	NA.							
Gene c CCGT RA_2034									NA NA	NA NA							
Gene c CCGTRA 2033 Gene c CCGTRA_2034 Gene c CCGTRA 2035 RESI RA 2 NS MCE	2022	8	31	NA	-				NA 3	NA NA							\vdash
PGE Online ccgt 1 PGE Online ccgt 2 PGE_Online_ccgt_3	2017 2017 2017	1	1 1														
PGE Online ccgt_3	2017	1	1														
PGE Online chp PGE Online chp 1 PGE Online chp 2	2017 2017 2017	1	1														
PGE Online chp_2 PGE Online batte y	2017 2017	1	1														
PGE Online batte y PGE Development batte y 1 PGE Development_batte y_2	2017 2022 2022	1	1 1		-												

lse_unique_contract_id	prev ous_COD_month	previous_COD_day	remediat on_plan	signed_contract	notice_to_proceed	public_contract	buying_energy_capac ty	NQC_reporting_source	procurement_origin	csp_resource_category	csp_annual_2024 csp_	annual_2026 csp_annual_2030	csp_annual_2035	macro_supertype	notes
Ost om MCE						YES	Ene gyCapac ty	Calculated	RPS, RA	B ogas (GWh)	12	12 12	0	phys cal	-
Hav MCF						YES YES	Fine gwCanar tv	Calculated	RPS, RA RPS. RA	B ogas (GWh) Geothe mal (GWh)	11 88	11 11 88 0	0	phys cal	
Geyse s MCE L ncoln MCE						YES	Ene gyCapac ty Ene gyCapac ty	Calculated Calculated	RPS, RA RPS, RA	B ogas (GWh)	27		0	physical physical	+
Voyage II MCE WM MCF						YES		Calculated	RPS, RA	W nd Ex st ng Cal fo n a GWh)	138	27 27 138 137	0	phys cal	
Antelope 2 MCE	y	14	NU	TES	NO	YES	E gyCapa ty Ene gyCapac ty	C Ic ate Calculated	RPS, RA	B gas GWh Sola Ex st ng Cal fo n a (GWh)	294	292 286	279	y cal physical	executed cont act n ts Feb ua y 1, 2021 compl and
						YES					2	2 2	2	ex st nggene c	
Cost Plus MCE Dese t Ha vest MCE						YES	Ene gyCapac ty Ene gyCapac ty	Calculated Calculated	RPS, RA RPS, RA RPS, RA	Sola Ex st ng Cal fo n a (GWh) Sola Ex st ng Cal fo n a (GWh)	258	1 1 255 250	243	ex st nggene c phys cal	
F eathy 1 MCE F eathy 2 MCE						YES	Ene gyCapac ty Fne gyCapac ty	Calculated		Sola Ex st ng Cal fo n a (GWh) Sola Ex st ng Cal fo n a (GWh)	2	2 2	2	ex st nggene c	
G eat Valley MCE						YES	Ene gyCapac ty Ene gyCapac ty	Calculated Calculated	RPS, RA	Sola Ex st ng Cal fo n a (GWh) Sola Ex st ng Cal fo n a (GWh)	286	284 281	0	ex st nggene c phys cal	
L ttle Bea 1 MCE L ttle Bea 3 MCE						YES	Ene gyCapac ty Ene gyCapac ty	Calculated Calculated	RPS, RA RPS. RA	Sola Ex st ng Cal fo n a (GWh) Sola Ex st ng Cal fo n a (GWh)	108 54	107 105 53 52	102 51	phys cal phys cal	+
L ttle Bea 4 MCE						YES	Ene gyCapac ty	Calculated	RPS, RA RPS, RA	Sola Ex st ng Cal fo n a (GWh)	135 135	133 131 133 131	127 127	phys cal	
L ttle Bea 5_MCE SRA po t MCE						YES	Ene gyCapac ty Ene gyCapac ty	Calculated Calculated	RPS, RA	Sola Ex st ng Cal fo n a (GWh) Sola Ex st ng Cal fo n a (GWh)	2	2 2	0	physical exist nggene ic	+
Mustang MCE Soscal Fe y Sola C_MCE						YES	Ene gyCapac ty Ene gyCapac ty	Calculated Calculated	RPS, RA	Sola Ex st ng Cal fo n a (GWh) Sola Ex st ng Cal fo n a (GWh)	82	81 79	0	physical existinggene c	
Soscal Fe y Sola D MCE						YES	Ene gyCapac ty	Calculated	RPS	Sola Ex st ng Cal fo n a (GWh)	3	3 3	3	ex st nggene c	
Ame can Canyon Sola A MCE Ame can Canyon Sola B MCE						YES YES	Ene gyCapac ty Ene gyCapac ty	Calculated Calculated	RPS RPS	Sola Ex st ng Cal fo n a (GWh) Sola Ex st ng Cal fo n a (GWh)	3	3 3	3	ex st nggene c ex st nggene c	
Ame can Canyon Sola C MCE						YES	Ene gyCapac ty	Calculated	RPS	Sola Ex st ng Cal fo n a (GWh)	3	3 3	3	ex st nggene c	
S Ive a Ranch A MCE						YES	Ene gyCapac ty Ene gyCapac ty	Calculated Calculated	RPS RPS	Sola Ex st ng Cal fo n a (GWh) Sola Ex st ng Cal fo n a (GWh)	3	3 3	3	ex st nggene c ex st nggene c	
S Ive a Ranch B_MCE SR A po t 2 MCE						YES	Ene gyCapac ty	Calculated Calculated	RPS RPS	Sola Ex st ng Cal fo n a (GWh)	2	2 2	0	ex st nggene c	
EO P oducts MCE Oakley RV & Boat Sto age MCE						YES YES	Ene gyCapac ty Ene gyCapac ty	Calculated Calculated Calculated	RPS RPS	Sola Ex st ng Cal fo n a (GWh) Sola Ex st ng Cal fo n a (GWh)	2	2 2	2	ex st nggene c ex st nggene c	+
DRES Qua y 2.4 MCE Co co an MCE						YES YES	Ene gyCapac ty	Calculated Calculated	RPS RPS RPS. RA	Sola Ex st ng Cal fo n a (GWh)	1 28	1 0	0	ex st nggene c	
Co co an_MCE GooseLake MCE	+					YES	Ene gyCapac ty Ene gyCapac ty	Calculated Calculated	RPS, RA RPS, RA	Sola Ex st ng Cal fo n a (GWh) Sola Ex st ng Cal fo n a (GWh)	28 31	28 27 30 30	26 29	physical physical	+
Buck MCE MCE Sola 1 8.5 MCE	12	22	NO.	VFS	NO.	YES	Fne gyCanar ty	Calculated	RPS ppc p		3	3 2	1	evist negene in	executed cont act n ts Feb ua y 1, 2021 compl and
MCE Sola 1 2.0 MCE	12	22	NO NO	YES	NO NO	YES	E gyCapa ty En g Ca ac y	C ic ate C ic t d	RPS RA RPS, RA	SIExstgloaGWh) SlaEst Cafo (W)	4	4	-	y cal h s al	executed cont act n ts Feb ua y 1, 2021 compl and
Ke n Tule PCC1 1 LT MCE S Ive a Ranch C_MCE						YES YES	Ene gyCapac ty Ene gyCapac ty	Calculated Calculated		Sma I Hyd o (GWh) Sola Ex st ng Cal fo n a (GWh)	37	37 37 3 3	37 3	physical existinggene ic	+
Lake He man PCC1 1 LT MCE						YES	Ene gyCapac ty	Calculated	RPS, RA RPS, RA	Sola Ex st ng Cal fo n a (GWh)	3	3 3	3	ex st nggene c	
By on Sola PCC1 1 LT MCE	7	1	YES	YES	YES	YES aynca aton	Ene gyCapac ty	Calculated C Ic t d		Sola Ex st ng Cal fo n a (GWh) W Ne PG E (GWh)	3 91	3 3	3 290	ex st nggene c	med at on Plan and (2) a P oject T mel ne. In ts Feb
St auss PCC1 1 LT MCE By on Sola PCC1 2 LT MCE						YES	e y a a t Ene gyCapac ty	Calculated	RPS RPS	Sola Ex st ng Cal fo n a (GWh)	8	8 8	8	ex st nggene c	
Fallon PCC1 1 LT MCE						YES			RPS	Sola Ex st ng Cal fo n a (GWh) Sola Ex st ng Cal fo n a (GWh) Sola D st buted (GWh)	2	2 2	2	ex st nggene c	
RPCA PCC1 1 LT MCE Napa_PCC1_1_LT_MCE	1		-	YES	Yes, but p c ng and	any financial info mation VES	Ene gyCapac ty Ene gyCapac ty Ene gyCapac ty	Calculated Calculated Calculated	RPS, RA RPS	Sola D st buted (GWh) Sola Ex st ng Cal fo n a (GWh)	14	14 14	13	newgene c ex st nggene c	Feed nta ff
CMSA PCC1 2 LT MCE						YES	Ene gyCapac ty	Calculated	RPS	B omass (GWh)	4	4 4	0	ex st nggene c	
EBCE PCC1 Sale 1 MCE SICE_PCC1_Sale_1_MCE						YES	Ene gyCapac ty Ene gyOnly Ene gyOnly	Calculated Calculated	RPS RPS	Sola Ex st ng Cal fo n a (GWh) Sola Ex st ng Cal fo n a (GWh)	8	0 0	0	ex st nggene c physical physical	
PCEA PCC1 Sale 1 MCE						YES			RPS	Sola Ex st ng Cal fo n a (GWh)	10	0 0	0	phys cal	
Golden F elds PCC1 LT MCE Ranch Se eno_PCC1 LT_MCE				YES YES	Yes, but p c ng and Yes, but p c ng and		Ene y apa ty Ene gyCapac ty	C ic ate Calculated	RPS D.21-06- 35 RPS, RA	o P e So an Batte (GWh) Sola D st buted (GWh)	5	0 295 5 5	5	n w n newgene c	count towa ds meet ng the subset of MCE's equ em Feed in tai ff
CES Flort on Falm PCC1 DAC 1 LT MCF				YES	Yes, but p c ng and	any financial information	Ene gyCapac ty	Calculated	RPS,RA	Sola D st buted (GWh)	1	1 1	1	newgene c	Feed n ta ff
CES Elect on Fa m PCC1 DAC 2 LT MCE Daggett PCC1 1 LT MCE	12	31	NA NA	YES YES	Yes, but p c ngand Yes, but p c ngand	any financial information any financial information	Ene gyCapac ty Ene gyCapac ty	Calculated Cal lated	RPS RPS R	Sola D st buted (GWh) Hy Pa S laad tt G	12 328	12 12 32 319	31	newgene c n en c	Feed in tail ff . MCE also expects this is esou ce to count towards me
Ma sh Land ng LLC RA 1 BAF MCE WELLHEAD RA 3 POF MCE						YES YES	Capac tyOnly Capac tyOnly	Calculated In the contact	RA RA	NA NA	0	0 0	0	physical physical	
CALPINE RA 35 S F MCE						YES	Capac tyOnly	In the cont act th ont act	RA D19 101 RA	NA NA	ō	0 0	0	phys cal	
CALPINE RA 34 NS MCE CALPINE RA 44 NS MCE	7	1	NO	YES	NO	YES	Cap ct O y Canar tyOnly	th ont act	D19 101 RA RA	NA NA	0	0 0	0	s e ed m t ex st nggene c	n ts Feb ua y 1, 2021 compl ancef l ng pe D.20-12-
CALPINE RA 67 NS MCE CALPINE RA 68 NSF MCE						YES	Capac tyOnly Capac tyOnly	In the cont act In the cont act In the cont act	RA	NA NA	0	0 0	0	ex st nggene c	
ENERSPONSE RA 2 SS MCE						YES	Capac tyOnly Capac tyOnly	In the cont act	RA RA	NA NA	0	0 0	0	ex st nggene c	
Hecate Sto age RA 2024 EBMUD B1 MCE				YES	Yes, but p c ng and	any financial information.	Capac tyOnly Ene gyOnly	Calculated Calculated	D2106035 RPS	Batte y Sto age MWh Ene gy Capac ty) Sma I Hyd o (GWh)	555 45.8	7 0 740	7 0	ne physical	nt pu suant to D.21-06-035. MCE ntends and expect
EBMUD B1 MCE						YES	Ene gyOnly	Calculated	RPS	Sma I Hyd o (GWh)	139 5	0 0	0	phys cal	
SENA CF 13 MCE MSCG CF 5 MCF						YES	Ene gyOnly Ene gyOnly	Calculated Calculated	pol cy pol cy	La ge Hyd o (GWh) Impo ted Hyd o (GWh)	200 400	0 0	0	ex st nggene c ex st nggene c	
MSCG_CF_5_MCE B oold eld CF 4 MCE						YES	Ene gyOnly	Calculated Calculated	pol cy	Impo ted Hyd o (GWh)	200	0 0	0	ex st nggene c	
TENASKA CF 2 MCE POWEREX CF 3 MCE						YES	Ene gyOnly Ene gyOnly	Calculated Calculated	pol cy pol cy	La ge Hyd o (GWh) Impo ted Hyd o (GWh)	120 250	0 0	0	physical existinggene ic	+
POWEREX_CF_3_MCE Powe ex_CF_4_MCE						YES YES	Ene gyOnly	Calculated	nol cv	Impo ted Hyd o (GWh) Impo ted Hyd o (GWh)	200 100	0 0	0	ex st nggene c ex st nggene c	
Powe ex CF 5 MCE WAPA_BR_MCE						YES	Ene gyOnly Ene gyOnly	Calculated Calculated	pol cy RPS	La ge Hyd o (GWh)	25	0 0	0	ex st nggene c	
WAPA BR 2 MCE GHGF ee A locat on						YES No	Ene gyOnly Ene gyOnly	Calculated Calculated	RPS allocat on	La geHyd o (GWh) La geHyd o (GWh)	0 500	25 25 500 500	25 500	ex st nggene c ex st nggene c	
DR A locat on						No	Capac tyOnly	In the cont act	allocat on	Shed DR MW)	0	0 0	0	ex st nggene c	
OS22 New W nd 2026 Gene cLTW nd NM 2030			NA NA	NO NO		No No	Ene gyCapac ty Ene gyCapac ty	Calculated Calculated	RPS, RA RPS, RA	W nd New SCE SDG&E (GWh) W nd New Mex co (GWh)	0	263 263 0 250	263 250	newgene c new esolve	Gene c
Gene cLTW nd 2033 Gene cLTGeothe mai 2030			NA NA NA	NO NO		No	Ene gyCapac ty Ene gyCapac ty Ene gyCapac ty	Calculated Calculated	RPS, RA RPS, RA	W nd Offsho e Mo o Bay (GWh) Geothe mal (GWh)	ŏ	0 0 0 580	400 580	new esolve newgene c	Gene c Gene c
Gene c LT Geothe mail 2030 MTR LDS 2026	1		NA NA	NO NO		No No	Ene gyCapac ty Ene gyCapac ty	Calculated	D2106035	Geothe mal (GWh) Batte y Sto age MWh Ene gy Capac ty)	0	0 580 0 0	580	newgene c	Gene c
VAMO_ST_B omass VAMO_ST_Sola_PV						Yes	Ene gyOnly Ene gyOnly	Calculated Calculated	allocat on allocat on	B omass (GWh)	33	0 0	0	ex st nggene c ex st nggene c	
VAMO ST W nd						Yes	Ene gyOnly	Calculated	allocat on	Sola Ex st ng Cal fo n a (GWh) W nd Ex st ng Cal fo n a GWh)	165	0 0	0	ex st nggene c	<u> </u>
VAMO ST Small Hyd o						Yes	Ene gyOnly	Calculated	allocat on	Sma l Hyd o (GWh)	14	0 0	0	ex st nggene c	
VAMO ST Geothe mail Gene ic STB omass						No No	Ene gyOnly Ene gyOnly	Calculated Calculated	allocat on RPS	Geothe mal (GWh) B omass (GWh)	70 28	34 0	16	ex st nggene c ex st nggene c	
Gene cSTSola						No No	Ene gyOnly Ene gyOnly	Calculated Calculated	RPS RPS	Sola Ex st ng Cal fo n a (GWh) W nd Ex st ng Cal fo n a GWh)	138 303	171 0 558 214	79 374	ex st nggene c ex st nggene c	+
Gene cSTW nd Gene cSTSmall Hyd o						No	Ene gyOnly Ene gyOnly	Calculated Calculated	RPS RPS	Sma i Hyd o (GWn)	55	69 0	32	ex st nggene c	
Gene cST Geothe mal Gene cSTLa ge Hyd o/ACS						No No	Ene gyOnly Ene gyOnly	Calculated Calculated	RPS RPS	Geothe mal (GWh) Impo ted Hyd o (GWh)	142	98 117 766 69	149 120	ex st nggene c ex st nggene c	+
Gene cLDS 2030 Gene c4Hou Sto age 2028			NA NA	NO NO		No N-	Ene gyCapac ty Ene gyCapac ty	Calculated Calculated	RA RA	Batte y Sto age MWh Ene gy Capac ty) Batte y Sto age MWh Ene gy Capac ty)	0	0 400 0 800	400 800	newgene c	Gene c
Gene c 4 Hou Sto age 2034			NA NA	NO NO		No	Ene gyCapac ty	Calculated	RA RA	Batte y Sto age MWh Ene gy Capac ty) Batte y Sto age MWh Ene gy Capac ty)	0	0 0	800	newgene c	Gene c
Gene c CCGT RA_2023 Gene c CCGT RA 2024		•				No No	Capac tyOnly Capac tyOnly	Calculated Calculated	RA RA	NA NA	0	0 0	0	ex st nggene c ex st nggene c	
Good of CCGT PA 2025						No	Capac tyOnly	Calculated	RA RA	NA NA	0	0 0	ő	ex st nggene c	
Gene c CCGT RA 2026 Gene c CCGT RA 2027						No No	Capac tyOnly Capac tyOnly	Calculated Calculated	RA RA	NA NA	0	0 0	0	ex st nggene c ex st nggene c	-
Gene c CCGT RA_2028						No	Capac tyOnly	Calculated	RA .	NA NA	0	0 0	0	ex st nggene c	
Gene c CCGT RA 2029 Gene c CCGT RA 2030						No No	Capac tyOnly Canar tyOnly	Calculated Calculated	RA RA	NA NA	0	0 0	0	ex st nggene c ex st nggene c	+
Gene c CCGT RA 2031						No	Capac tyOnly Capac tyOnly	Calculated Calculated	RA	NA NA	ō	0 0	ō	evid negene in	
Gene c CCGT RA 2032 Gene c CCGT RA 2033	+					No No	Capac tyOnly Capac tvOnly	Calculated Calculated	RA RA	NA NA	0	0 0	0	ex st nggene c ex st nggene c	+
Gene c CCGTRA 2034						No No	Capac tyOnly Capac tyOnly	Calculated Calculated	RA	NA NA	0	0 0	0	ex st nggene c	
Gene c CCGT RA 2035 RESI RA 2 NS MCE				YES	NO	any financial information	Capac tyOnly Capac tyOnly	Calculated In the cont act	RA D1911016, RA	NA Shed DR MW)	15	15 15	0	ex st nggene c new e e	east 15 MW of nc emental NQC towards MCE's D 19 1
PGE Online ccgt 1 PGE Online ccgt 2	1		-		_		Ene gyCapac ty Ene gyCapac ty	-	_	NA NA	0	0 0	0		+ -
PGE_Onl ne_ccgt_3										NA NA	ŏ	0 0	ő		
PGE Online chp PGE Online chp 1							Ene gyCapac ty Ene gyCapac ty			NA NA	0	0 0	0		
PGE Onl ne_chp_2 PGE Onl ne_batte v							Ene gyCapac ty			NA NA	0	0 0	0		
	1						Capac tyOnly Capac tyOnly			Batte y Sto age MWh Ene gy Capac ty) Batte y Sto age MWh Ene gy Capac ty) Batte y Sto age MWh Ene gy Capac ty)	23.23439546 93 23.30859887 23	93.23439546 1.30859887 23.30859887	93.23439546 23.30859887		†
PGE Development batte y 1															

resource	contract status	contracted_nameplate_capacity	is_hybrid_paired	can charge from grid	contracted generator mw	contracted storage mw	contracted storage depth mwh	buy_sell_own contract_start_date_year	contract start date month cont	tract start date day	contract end date year
WHEATL 6 LNDFIL	Online	2	NotHybrid	0	0	0	0	0 2013	7	1	203
PEABDY 2 LNDFIL	Online	2	NotHybrid	0	0	0	0	0 2013	7	1	203
GEYS13_7_UNIT13	Online	10	NotHybrid	0	0	0	0		1	1	202
	Online		NotHybrid	0	0	0	0		2	14	20:
	Online		NotHybrid	0	0		0		12	29	20.
NOVATO 6 LNDFL	Online		NotHybrid	0	0		0		12	14	20
	Online		NotHybrid	0	0		0		3	1	20.
				U	0				1	1	
	Online	1	NotHybrid	0	0	0	0		3	1	20
	Online		NotHybrid	0	0	0	0		9	1	20
	Online	80	NotHybrid	0	0	0	0	0 2020	12	17	20
_EXISTING_GENERIC_SOLAR_FIXED	Online	1	NotHybrid	0	0	0	0	0 2016	10	6	20
EXISTING GENERIC SOLAR FIXED	Online	1	NotHybrid	0	0	0	0	0 2016	10	6	
TRNQL8 2 ROJSR1	Online	100	NotHyhrid	0	0	0	0	0 2018	4	14	20
	Online	40	NotHybrid NotHybrid	0	0	0	0		12	10	20 20
		40	Nothybrid	U	U	0	0		12	10	20
	Online		NotHybrid	U	U	U					20
	Online		NotHybrid	0	0		0		12	10	20
	Online	50	NotHybrid	0	0	0	0	0 2020	12	10	20
	Online	1	NotHybrid	0	0	0	0		10	23	20
MSTANG 2 SOLAR4	Online	30	NotHybrid	0	0	0	0	0 2015	6	25	20
EXISTING GENERIC SOLAR FIXED	Online	1	NotHybrid	0	0	0	0	0 2020	8	30	20
	Online		NotHybrid	0	0	0	0		8	30	20
	Online		NotHybrid	0	0		0		0	1	20
				U					9		
	Online		NotHybrid	0	0		0		9	1	20
	Online	1	NotHybrid	0	0		0		9	1	20
	Online	1	NotHybrid	0	0		0		3	30	20
_EXISTING_GENERIC_SOLAR_FIXED	Online		NotHybrid	0	0		0	0 2021	3	30	20
	Online	1	NotHybrid	0	0	0	0	0 2020	9	30	20
	Online	1	NotHybrid	Λ	n	n	0		12	10	20
	Online	1	NotHybrid	0	0	0	0		7	31	20
	Online		NotHybrid	0	0		0		,	14	20
	Online		NotHybrid NotHybrid	0			0		3	22	20
				0					5		
	Online	12	NotHybrid	0	0	0	0		5	22	20
_EXISTING_GENERIC_SOLAR_FIXED	Online	1	NotHybrid	0	0	0	0		.5	22	20
	Online	9	NotHybrid	0	0	0	0	0 2017	12	22	
	Online	2	NotHybrid	0	0	0	0	0 2017	12	22	20
KRNCNY_6_UNIT	Online	11	NotHybrid	0	0	0	0	0 2021	7	5	20.
	Online		NotHybrid	0	0		0		3	30	20
	Online		NotHybrid	0	0		0	0 2021	9	30	
				U	U	0			9	30	
	Online		NotHybrid	0	0	0	0		5	21	20
	Development		NotHybrid	0	0		0				
	Online	1	NotHybrid	0	0	0	0	0 2021	12	1	
EXISTING GENERIC SOLAR FIXED	Online	1	NotHybrid	0	0	0	0	0 2021	10	1	20
EXISTING GENERIC SOLAR FIXED	Online	1	NotHybrid	0	0	0	0	0 2021	12	1	204
NEW GENERIC SOLAR FIXED	Development	5	NotHybrid	0	0	0	0	0 2022	11	30	204
EXISTING GENERIC SOLAR FIXED	Onlina	1	NotHybrid	0	0	0	0		11	1	204
EVICTING GENERIC SUDAN PIACE	Omme										
					0					4.0	2.0
EXISTING GENERIC BIOMASS/WOOD			NotHybrid	0	0		0	0 2022	7	16	20:
GOOSLK 1 SOLAR1	Online	0	NotHybrid	0	0	0	0	0 2022 Sell 2021	9	6	202
GOOSLK 1 SOLAR1		0		0		0	0	0 2022	7 9 11		20.
GOOSLK 1 SOLAR1 CORCAN 1 SOLAR2	Online	0	NotHybrid	0 0 0	0	0	0 0 0	0 2022 Sell 2021	9	6	20. 20.
GOOSLK 1 SOLAR1 CORCAN 1 SOLAR2 GOOSLK_1_SOLAR1	Online Online Online	0	NotHybrid NotHybrid NotHybrid	0 0 0 0 0	0	0 0 0	0 0 0	0 2022 Sell 2021 Sell 2021 Sell 2021 Sell 2022	9	6 1	20. 20. 20.
GOOSLK 1 SOLAR1 CORCAN 1 SOLAR2 GOOSLK_1_SOLAR1 _NEW_GENERIC_SOLAR_1AXIS	Online Online Online Development	0 0 0 100	NotHybrid NotHybrid NotHybrid NewSolarNewStorage	NO	0 0 0 100	0 0 0 92	0 0 0 0 368	0 2022 Sell 2021 Sell 2021 Sell 2022 0 2025	9 11 1 3	6 1 17 1	20. 20. 20. 20.
GOOSLK 1 SOLAR1 CORCAN 1 SOLAR2 GOOSLK_1 SOLAR1 NEW GENERIC SOLAR 1AXIS NEW GENERIC SOLAR 1AXIS	Online Online Online Development Development	0 0 0 100	NotHybrid NotHybrid NotHybrid NewSolarNewStorage NewSolarNewStorage	0 0 0 0 NO NO	0 0 0	0 0 0 0 92	0 0 0 0 368 3.2	0 2022 Sell 2021 Sell 2021 Sell 2021 Sell 2022 0 2025 0 2025	9 11 1 3	6 1 17 1 1 22	20. 20. 20. 20. 20. 20.
GOOSLK 1 SOLAR1 CORCAN 1 SOLAR2 GOOSLK 1_SOLAR1 NEW GENERIC SOLAR 1AXIS NEW GENERIC SOLAR 1AXIS NEW GENERIC_SOLAR_1AXIS NEW_GENERIC_SOLAR_1AXIS	Online Online Online Development Development Development	0 0 0 100 2 0	NotHybrid NotHybrid NotHybrid NewSolarNewStorage NewSolarNewStorage NotHybrid	NO	0 0 0 100 2 2	0 0 0 92 0.8	0 0 0 0 0 368 3.2 0	0 2022 Sell 2021 Sell 2021 Sell 2021 Sell 2022 0 2025 0 2025 0 2024 0 2023	9 11 1 3 3 2 12	6 1 17 1 1 22 31	20 20 20 20 20 20 20
GOOSIK 1 SOLAR1 CORCAN 1 SOLAR1 GOOSIK 1, SOLAR1 NEW, GENERIC SOLAR 1AXIS NEW, GENERIC SOLAR 1AXIS NEW GENERIC SOLAR 1AXIS NEW GENERIC SOLAR 1AXIS NEW, GENERIC SOLAR 1AXIS	Online Online Online Development Development Development Development Development	0 0 100 2 0 4	NotHybrid NotHybrid NotHybrid NotHybrid NewSolarNewStorage NewSolarNewStorage NotHybrid NotHybrid NotHybrid	NO	0 0 0 100 2 0 0	0 0 0 92 0.8 0 0	0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	0 2022 Self 2021 Self 2021 Self 2022 0 2025 0 2025 0 2026 0 2023	9 11 1 3	6 1 17 1 22 31 31	20 20 20 20 20 20 20 20
GOOSIK I SOLARI CORCAN I SOLARZ GOOSIK I SOLARZ GOOSIK I SOLARI NEW. GENERIC SOLAR I ANIS	Online Online Online Development Development Development Development Development	0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	NotHybrid NotHybrid NotHybrid NewSolarNewStorage NewSolarNewStorage NotHybrid NotHybrid NewSolarNewStorage	NO	0 0 100 2 2 0 0 110	0 0 0 92 0.8 0 0 60	0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	0 2022 Self 2021 Self 2021 Self 2021 O 2025 O 2025 O 2025 O 2023 O 2023 O 2023 O 2023	9 11 1 3 3 2 12	6 1 17 1 2 22 31 31 28	20. 20. 20. 20. 20. 20. 20. 20.
GOOSIK I SOLARI CORCAN I SOLARZ GOOSIK J SOLARZ GOOSIK J SOLAR I AWS NEW GENERIC SOLAR I AWS ONEW GENERIC SOLAR I AWS COCOPP 2, CTG SOLAR I AWS COCOPP 2, CTG SOLAR I AWS COCOPP 2, CTG SOLAR I AWS	Online Online Online Online Development Development Development Development Development Online	0 0 1000 2 0 4 1100	NotHybrid NotHybrid NotHybrid NotHybrid NewSolarNewStorage NewSolarNewStorage NotHybrid NotHybrid NotHybrid NotHybrid NotHybrid NotHybrid	NO	0 0 100 2 0 0 0 1100	0 0 92 9.8 0 0 60	0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	0 2022 5dl 2021 5dl 2021 5dl 2021 0 2025 0 2025 0 2020 0 2033 0 2033 0 2033 0 2033	9 11 1 3 3 2 12	6 1 17 1 22 31 31 28 28	20; 20; 20; 20; 20; 20; 20; 20; 20; 20;
GOOSEK I SOLARI CORCAN I SOLARZ GOOSEK I SOLARZ GOOSEK I SOLARI NEW GENERIC SOLAR IANIS ARRO COCOPP 2 CTG4 ARRICO 7 UNIT	Online Online Online Development Development Development Development Development Development Online Online	0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	NotHybrid NotHybrid NotHybrid NotHybrid NewSolarNewStorage NotHybrid	NO	0 0 10 20 0 0 110 0	0 0 0 92 2 0.8 0 0 0 0 0 0	0 0 0 0 0 368 3.2 0 240 0	0 2022 Self 2021 Self 2021 Self 2021 O 2025 O 2025 O 2025 O 2023 O 2023 O 2023 O 2023 O 2023 O 2023	9 11 1 3 3 2 12	6 1 17 1 2 22 31 31 28	20; 20; 20; 20; 20; 20; 20; 20; 20; 20;
GOOSE I SOURE CORAN I SOURE GOOSE I SOURE NEW GENERIC SOLRE LAWS NEW GENERIC SOLRE LAWS OCCOPP 2, CTG AGRICO, T, UNIT	Online Online Online Online Development Development Development Development Development Development Online Online Online	0 0 0 100	NotHybrid NotHybrid NotHybrid NotHybrid NewSolarNewStorage NewSolarNewStorage NotHybrid NotHybrid NotHybrid NotHybrid NotHybrid NotHybrid NotHybrid	NO	0 0 0 100 0 0 0 101 100 0 0 0 0 0 0 0 0	0 0 0 2 0.8 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	0 2022 Sdl 2021 Sdl 2021 Sdl 2021 Sdl 2022 0 2025 0 2025 0 2023 0 2023 0 2023 0 2023 0 2023 0 2023	9 111 1 3 3 2 2 12 12 8 5 5	6 1 17 1 22 31 31 28 28	20, 20, 20, 20, 20, 20, 20, 20, 20, 20,
GOOSE I SOURE CORAN I SOURE GOOSE I SOURE NEW GENERIC SOLRE LAWS NEW GENERIC SOLRE LAWS OCCOPP 2 CTG 4 AGRICO 7. UNIT	Online Online Online Development Development Development Development Development Development Online Online	0 0 0 100	NotHybrid NotHybrid NotHybrid NotHybrid NewSolarNewStorage NotHybrid	NO	0 0 10 20 0 0 110 0	0 0 0 2 0.8 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	0 0 0 0 0 368 3.2 0 240 0	0 2022 Sdl 2021 Sdl 2021 Sdl 2021 Sdl 2022 0 2025 0 2025 0 2023 0 2023 0 2023 0 2023 0 2023 0 2023	9 111 1 3 3 2 2 12 12 8 5 5	6 1 17 1 22 31 31 28 28	202 203 204 204 204 204 205 203 203 203 204 204 204 204 204 204 204 204 204 204
GOOSE I SOURE CORGAN I SOURE GOOSE I SOURE NEW GENERIC SOLRE LAWS NEW GENERIC SOLRE LAWS OCCOP'D 2_CTG AGRICO, 7_UNIT SUTTER 2_CSO EXISTING GENERIC COMBINED_CYCLE EXISTING GENERIC COMBINED_CYCLE	Online Online Online Development Development Development Development Development Development Online Online Online Online Online Online	0 0 10000 2 2 4 110 5 5 7 7 7	NotHybrid NotHybrid NotHybrid NotHybrid NewSolarNewStorage NewSolarNewStorage NotHybrid NotHybrid NotHybrid NotHybrid NotHybrid NotHybrid NotHybrid	NO	0 0 0 100 0 0 0 101 100 0 0 0 0 0 0 0 0	0 0 0 2 0.8.8 0 0 0 660 0 0 0	0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	0 202222 Sell 20211 Sell 20211 Sell 20222 0 20252 0 20240 0 20233 0 20230 0 20232 0 20232 0 20232 0 20232 0 20232 0 20232 0 20212 0 20212 0 2022	9 111 1 3 3 2 2 12 12 8 5 5	6 1 17 1 22 31 31 28 28	20; 20; 20; 20; 20; 20; 20; 20; 20; 20;
GOOSEX I SOLARI COCRAN I SOLARI GOOSEX I SOLARI NEW GENERIC SOLARI JAWS NEW GENERIC JOLARI JAWS NEW GENERIC JOLARI JAWS NEW GENERIC SOLARI JAWS NEW GE	Online Online Online Development Development Development Development Development Development Online Online Online Online Online Online	0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	Nottybrid	NO	0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	0 202222 Sell 20211 Sell 20211 Sell 20222 0 20252 0 20240 0 20233 0 20230 0 20232 0 20232 0 20232 0 20232 0 20232 0 20232 0 20212 0 20212 0 2022	9 111 1 3 3 3 2 2 12 12 12 8 5 5 1 1 1 1	6 1 17 1 22 31 31 28 28	20; 20; 20; 20; 20; 20; 20; 20; 20; 20;
GOOSEX I SOUARI COCRAN I SOUARI COCRAN I SOUARI MEW GENERIC SOLAR JAMIS NEW GENERIC SOLAR JAMIS ENTER JAMITAL SOLAR JAMITAL SOLAR JAMITAL SOLAR JAMITAL SUTTER J. CONT. EXISTING GENERIC COMBINED CYCLE EXISTING GENERIC COMBINED CYCLE EXISTING GENERIC COMBINED CYCLE EXISTING GENERIC COMBINED CYCLE	Online Online Online Donline Development Development Development Development Development Development Development Online Online Online Online Online Online Online	0 0 1000000000000000000000000000000000	Nostrybrid Nostrybrid Nostrybrid Nostrybrid Nostrybrid NewSolarNewStorage NewSolarNewStorage Nostrybrid	NO NO 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	0 0 0 0 0 0 0 0 0 100 0 0 0 0 0 0 0 0 0	0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	0 2022 Self 2021 Self 2021 Self 2022 0 2025 0 2025 0 2026 0 2027 0 2027 0 2027 0 2027 0 2027 0 2027 0 2027 0 2027 0 2027 0 2027 0 2027 0 2027 0 2027 0 2027 0 2027	9 111 1 3 3 3 2 2 12 12 12 8 5 5 1 1 1 1	6 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	2000 200 200 200 200 200 200 200 200 20
GOOSE I SOUARI CORGAN I SOUARI GOOSE I, SOUARI NEW GENERIC SOLAR LAWS NEW GENERIC COMBINED CYCLE EXISTING GENERIC COMBINED CYCLE	Online Online Online Online Development Development Development Development Development Development Development Online Online Online Online Online Online Online Online	0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	Nothybrid Nothybrid Nothybrid Nothybrid NewSolarNewStorage NewSolarNewStorage NewSolarNewStorage NewSolarNewStorage NewSolarNewStorage Nothybrid	NO NO 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	0 2022 Sdl 2021 Sdl 2021 Sdl 2021 Sdl 2022 0 2025 0 2025 0 2026 0 2023 0 2023 0 2023 0 2020 0 2020 0 2020 0 2020 0 2020 0 2020 0 2020 0 2020 0 2020 0 2020 0 2020	9 111 1 3 3 3 2 2 12 12 12 8 5 5 1 1 1 1	6 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	2000 200 200 200 200 200 200 200 200 20
GOOSEX I SOUARI CORGAN I SOUARI CORGAN I SOUARI GOOSEX I SOUARI NEW GENERIC SOLAR I JAVIS SEVE GENERIC SOLAR I JAVIS EVEN GENERIC SOLAR I JAVIS EVEN GENERIC SOLAR I JAVIS EVENTING GENERIC COMBINED CYCLE EXISTING GENERIC COMBINED CYCLE	Online Online Online Online Development Development Development Development Development Development Online Online Online Online Online Online Online Online Online	0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	Nostrybrid Nostrybrid Nostrybrid Nostrybrid Nostrybrid NewSolarNewStorage NewSolarNewStorage Nostrybrid	NO NO 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	0 0 22 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	0 2022 Self 2021 Self 2021 Self 2022 0 2025 0 2025 0 2026 0 2027 0 2027 0 2027 0 2027 0 2027 0 2027 0 2027 0 2027 0 2027 0 2027 0 2027 0 2027 0 2027 0 2027 0 2027	9 11 13 3 3 2 12 12 12 8 8 1 1 1 1 1 1 1 1 4 4	6 1 1 17 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	200 200 200 200 200 200 200 200 200 200
GOOSE I SOUARI CORGAN I SOUARI GOOSE I, SOUARI NEW GENERIC SOLAR LAWS SOUR J. LIWITAL SOUTER J. CISO EXISTING GENERIC COMBINED CYCLE EXISTING GENERIC COMBINED CYCLE EXISTING GENERIC COMBINED EXISTING G	Online Online Online Online Development Development Development Development Development Development Online Online Online Online Online Online Online Online Online	0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	Nottybrid Nottybrid Nottybrid Nottybrid Nottybrid NewSolarNewStorage NewSolarNewStorage NewSolarNewStorage Nottybrid	NO NO 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	0 0 22 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	0 0 0 368 329 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	0 2022 Self 2021 Self 2021 Self 2021 Self 2022 0 2025 0 2025 0 2023 0 2023 0 2023 0 2023 0 2023 0 2023 0 2023 0 2023 0 2023 0 2023 0 2023 0 2023 0 2023 0 2023 0 2023 0 2023	9 11 13 3 3 2 12 12 12 8 8 1 1 1 1 1 1 1 1 4 4	6 1 1 17 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	200 200 200 200 200 200 200 200 200 200
GOOSEX I SOUARI COCRAN I SOUARI GOOSEX I SOUARI NEW GENERIC SOLAR I JAVIS SEVE GENERIC SOLAR I JAVIS SEVE GENERIC SOLAR I JAVIS EXITER 2, COSE EXISTING GENERIC COMBINED CYCLE EXISTING GENERIC COMBINED EXISTED	Online Online Online Online Development Development Development Development Development Development Development Online	0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	Nostrybrid Nostrybrid Nostrybrid Nostrybrid Nostrybrid NewSolarNewStorage NewSolarNewStorage Nostrybrid	NO NO 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	0 2022 Self 2021 Self 2021 Self 2021 Self 2022 0 2025 0 2025 0 2026 0 2027 0 2027 0 2027 0 2027 0 2027 0 2027 0 2027 0 2027 0 2027 0 2027 0 2027 0 2027 0 2027 0 2027 0 2027 0 2027 0 2028	9 11 13 3 3 2 12 12 12 8 8 1 1 1 1 1 1 1 1 4 4	6 1 1 17 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	200 200 200 200 200 200 200 200 200 200
GOOSE I SOUARI CORGAN I SOUARI GOOSE I, SOUARI GOOSE I, SOUARI NEW GENERIC SOLAR LAWS SOUDE I, DUNTAN SUTER 2, CISO EXISTING GENERIC COMBINED CYCLE EXISTING GENERIC COMBINED CYCLE EXISTING GENERIC COMBINED CYCLE EXISTING GENERIC COMBINED CYCLE EXISTING GENERIC COMBINED EXISTING EXISTING EXISTING EXISTING EXISTENCE EXISTING GENERIC COMBINED EXISTING EXISTENCE EXISTING GENERIC COMBINED EXISTENCE EXISTENCE EXISTING GENERIC COMBINED EXISTENCE	Online Online Online Development Development Development Development Development Development Development Development Development Online Development Online	0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	Nothybrid	NO NO 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	0 0 100 100 100 100 100 100 100 100 100	0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	0 0 0 368 329 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	0 2022 Sell 2021 Sell 2021 Sell 2021 O 2025 O 2025 O 2026 O 2026 O 2026 O 2027	9 11 13 3 3 2 12 12 12 8 8 1 1 1 1 1 1 1 1 4 4	6 1 1 17 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	200 200 200 200 200 200 200 200 200 200
GOOSEX I SOUARI COCRAN I SOUARI GOOSEX I SOUARI NEW GENERIC SOLAR I JAVIS SUTTER 2_COS EXISTING GENERIC COMBINED CYCLE EXISTING GENERIC DR NEW GENERIC BATTERY STORAGE COMCHE I PLAIF PAROER GENERIC INSTATE LARGE H EXISTING GENERIC INSTATE LARGE H	Online Online Online Online Development Development Development Development Development Development Development Online	0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	Nostrybrid Nostrybrid Nostrybrid Nostrybrid NewSolarNewStorage NewSolarNewStorage Nostrybrid	NO N	0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	0 2022 Self 2021 Self 2021 Self 2021 Self 2022 0 2025 0 2025 0 2026 0 2026 0 2027	9 11 13 3 3 2 12 12 12 8 8 1 1 1 1 1 1 1 1 4 4	6 1 1 17 1 17 1 1 1 1 1 1 1 1 1 1 1 1 1	200 200 200 200 200 200 200 200 200 200
GOOSE I SOLARI CORGAN I SOLARI GOOSE I SOLARI NEW GENERIC SOLARI LAVIS COCOPP J. CTGG AGRICO, J. UMTI BOGOLE, J. UMTALI SUTTER, J. CISO EXISTING GENERIC COMBINED CYCLE EXISTING GENERIC COMBINED CYCLE EXISTING GENERIC COMBINED EXISTING GENERIC INSTALE LARGE H EXISTING GENERIC INSTALE LARGE H EXISTING GENERIC INSTALE LARGE H	Online Online Online Development Development Development Development Development Development Development Development Online	0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	Nothybrid	NO	0 0 100 100 100 100 100 100 100 100 100	0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	0 2022 Self 2021 Self 2021 Self 2021 Self 2022 0 2025 0 2025 0 2026 0 2023 0 2026 0 2023 0 2026 0 2020	9 11 13 3 3 2 12 12 12 8 8 1 1 1 1 1 1 1 1 4 4	6 1 1 17 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	200 200 200 200 200 200 200 200 200 200
GOOSEX I SOUARI CORGAN I SOUARI GOOSEX I SOUARI RIVE GENERIC SOLAR I JAVIS NEW GENERIC SOLAR I JAVIS SEVEN GENERIC SOLAR I JAVIS EVEN GENERIC COMBINED CYCLE EXISTING GENERIC MISTATE LARGE H	Online Online Online Online Development Development Development Development Development Development Development Online	0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	Nostryburd Nostryburd Nostryburd Nostryburd Nostryburd Nostryburd NewSolarNewStorage NewSolarNewStorage Nostryburd	NO N	0 0 100 100 100 100 100 100 100 100 100	0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	0 2022 Self 2021 Self 2021 Self 2021 Self 2022 0 2025 0 2025 0 2026 0 2026 0 2027	9 11 13 3 3 2 12 12 12 8 8 1 1 1 1 1 1 1 1 4 4	6 1 1 17 1 17 1 1 1 1 1 1 1 1 1 1 1 1 1	200 200 200 200 200 200 200 200 200 200
GOOSEX I SOUARI CONCAN I SOUARI CONCAN I SOUARI GOOSEX, SOUARI NEW GENERIC, SOLARI JAXVS NEW GENERIC, COMBINED CYCLE CONCENTING GENERIC, COMBINED CYCLE CONTING GENERIC, COMBINED CYCLE CONTING GENERIC, COMBINED CYCLE CONTING GENERIC, COMBINED CYCLE COMMON GENERIC COMM	Online Online Online Development Development Development Development Development Development Development Development Online	0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	Nottybrid Nottybrid Nottybrid Nottybrid Nottybrid Nottybrid Nottybrid NoveSolarNewStorage NowSolarNewStorage Nottybrid	NO	0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	0 20222 Sell 20211 Sell 20211 Sell 20222 0 20252 0 20244 0 20333 0 20330 0 20330 0 20232 0 20200	9 111 3 3 3 2 2 12 12 12 12 12 12 11 11 11 11 11 11	6 1 1 17 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	200 200 200 200 200 200 200 200 200 200
GOOSE I SOUARI CORRAN I SOUARI CORRAN I SOLARI GOOSE LI SOUARI REW GERERIC SOLARI JAXOS NEW GERERIC SOLARI JAXOS SUTURI 2 GERERIC COMBINED CYCLE SOLARI JAXOS SOLARI JAX	Online Online Online Online Development Development Development Development Development Development Development Online	0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	Nottybrid Nottybrid Nottybrid Nottybrid Nottybrid Nottybrid Nottybrid NoveSolarNewStorage NowSolarNewStorage Nottybrid	NO	0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	0 20222 Sell 20211 Sell 20211 Sell 20222 0 20252 0 20244 0 20333 0 20330 0 20330 0 20232 0 20200	9 111 3 3 3 2 2 12 12 12 12 12 12 11 11 11 11 11 11	6 1 1 17 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	200 200 200 200 200 200 200 200 200 200
GOOSE I SOUARI CORCAN I SOUARI CORCAN I SOUARI MEW GENERIC SOLAR I AXIS NEW GENERIC SOLAR I AXIS SEW GENERIC COMBINED CYCLE EXISTING GENERIC MERCA NEW GENERIC BATTERY STORAGE CAMCHE I PLIATE EXISTING GENERIC INSTATE LARGE H EXISTING GENERIC NISTATE LARGE H EXISTATE GENERIC NISTATE LARGE H	Online Online Online Online Development Development Development Development Development Development Online	0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	Nostrybrid Nostrybrid Nostrybrid Nostrybrid Nostrybrid NewSolarNewStrange NewSolarNewStrange Nostrybrid	NO	0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	000000000000000000000000000000000000000	0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	0 2022 Self 2021 Self 2021 Self 2021 Self 2022 0 2025 0 2025 0 2026 0 2026 0 2027	9 111 3 3 3 2 2 12 12 12 12 12 12 11 11 11 11 11 11	6 6 1 1 17 7 1 2 2 3 3 1 3 1 2 8 8 2 3 1 3 1 2 8 8 2 1 2 1 2 1 2 1 2 1 2 1 2 1 1 1 1	200 200 200 200 200 200 200 200 200 200
GOOSE I SOLARI CORGAN I SOLARI GOOSE I, SOLARI NEW GENERIC SOLARI LAWS ROGUE J, LIMITALI SOLTER J, LIMITALI SOLTER J, LIMITALI SOLTER J, LIMITALI SOLTER J, LIMITALI EXISTING GENERIC COMBINED CYCLE EXISTING GENERIC COMBINED EXISTING GENERIC NEW HYDRO EXISTING GENERIC NW HYDRO	Online Online Online Online Online Online Online Doublepment Development Online	0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	Nottybrid Nottybrid Nottybrid Nottybrid Nottybrid Nottybrid Nottybrid NovsSlarInvesStrange NovsSlarInvesStrange NovsSlarInvesStrange Nottybrid	NO	0 0 100 100 100 100 100 100 100 100 100	0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	0 0 0 368 368 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	0 2022 Self 2021 Self 2021 Self 2021 Self 2022 0 2025 0 2025 0 2026 0 2026 0 2026 0 2027	9 111 3 3 3 2 2 12 12 12 12 12 12 11 11 11 11 11 11	6 1 1 17 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	26 26 27 26 26 26 26 27 26 27 26 27 27 27 27 27 27 27 27 27 27 27 27 27
GOOSH I SOUARI CORRAN I SOUARI GOOSH I, SOUARI MEW GENERIC SOLAR JAVIS NEW GENERIC SOLAR JAVIS SUM GENERIC SOLAR JAVIS SUM GENERIC SOLAR JAVIS DEVISTING GENERIC COMBINED CYCLE EXISTING GENERIC MARTIN STORAGE CAMCHE I PLIA SOLAR EXISTING GENERIC INSTATE LARGE H EXISTER CORRECT INSTATE LARGE H EXISTING GENERIC INSTATE LARGE H EXISTER CORRECT INSTATE LARGE H E	Online Online Online Online Development Development Development Development Development Development Development Online	0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	Nostrybrid Nostrybrid Nostrybrid Nostrybrid NewSolarNewStorage NewSolarNewStorage NewSolarNewStorage Nostrybrid	NO	0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	000000000000000000000000000000000000000	0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	0 2022 Self 2021 Self 2021 Self 2021 Self 2022 0 2025 0 2025 0 2026 0 2026 0 2027	9 111 3 3 3 2 2 12 12 12 12 12 12 11 11 11 11 11 11	6 6 1 1 17 17 1 2 2 2 3 3 1 3 1 2 8 8 2 3 2 3 1 3 1 2 2 8 1 2 3 1 3 1 2 2 1 3 1 3 1 3 1 3 1 3 1 3	200, 200, 200, 200, 200, 200, 200, 200,
GOOSK I SOLARI CORCAN I SOLARI GOOSK I, SOLARI MEW GERBER, SOLAR I AWIS NEW GERBER, SOLAR I AWIS DESTRA GERBER, COMBINED CYCLE DISTRING GERBER, COMBINED CYCLE DISTRING GERBER, COMBINED CYCLE DISTRING GERBER, COMBINED CYCLE DISTRING GERBER, COMBINED ENTER J GERBER LOSGING GERBER, COMBINED ENTER J GERBER, WHERDE EXISTING GERBER, WHERDE	Online Online Online Online Online Online Dolline Dovelogment Online Online Online Online Online Dolline Dolline Online	0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	Nostriyorial Nostriyorial Nostriyorial Nostriyorial Nostriyorial NowSolariNewStorage NowSolariNewStorage NowSolariNewStorage Nostriyorial	NO N	0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	0 2022 Self 2021 Self 2021 Self 2021 Self 2022 0 2025 0 2025 0 2026 0 2026 0 2026 0 2027	9 111 3 3 3 2 2 12 12 12 12 12 12 11 11 11 11 11 11	6 1 17 1 1 1 1 1 1 1	26 26 26 26 26 26 26 26 26 26 26 26 26 2
GOOSIA I SOLARI CORCAN I SOLARI GOOSIA I, SOLARI MEW GENERIC SOLARI JAVIS NEW GENERIC SOLARI JAVIS SUEVIGENERIC SOLARI JAVIS SUEVIGENERIC SOLARI JAVIS DEVICENTA GENERIC COMBINED CVCLE EXISTING GENERIC COMBINED CVCLE EXISTING GENERIC COMBINED CVCLE EXISTING GENERIC COMBINED CVCLE EXISTING GENERIC COMBINED EXISTING GENERIC MICHAEL EXISTING GENERIC MICHAEL EXISTING GENERIC NISTATE LARGE H EXISTING GENERIC NISTATE LARGE H EXISTING GENERIC NIW HYDRO EXISTING GENERIC NISTATE LARGE H	Online Online Online Online Online Online Development Development Development Development Development Development Development Development Online	0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	Nostrybrid Nostrybrid Nostrybrid Nostrybrid Nostrybrid Nostrybrid NewSolarNewStorage NewSolarNewStorage Nostrybrid	NO	0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	0 2022 Self 2021 Self 2021 Self 2021 Self 2022 0 2025 0 2025 0 2026 0 2026 0 2027	9 11 11 3 3 2 12 12 8 8 5 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	6 6 1 1 17 17 1 2 2 2 3 3 1 3 1 2 8 8 2 3 2 3 1 3 1 2 2 8 1 2 3 1 3 1 2 2 1 3 1 3 1 3 1 3 1 3 1 3	200 200 200 200 200 200 200 200 200 200
GOOSE I SOLARI CORCAN I SOLARI CORCAN I SOLARI GOOSE I, SOLARI NEW GENERIC SOLARI JAXVS DISTRIPA J. CORD. DISTRIPA GENERIC COMBINED CYCLE DASTING GENERIC COMBINED CYCLE DASTING GENERIC COMBINED CYCLE DASTING GENERIC DASTINE LARGE H DASTING GENERIC NW HYDRO DESTRIPA GENERIC NW HYDRO DESTRIP	Online Online Online Online Online Online Development Development Development Development Development Development Development Development Online	0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	Nostriybrid Nostriybrid Nostriybrid Nostriybrid Nostriybrid NewSolarNewStarage NewSolarNewStarage NewSolarNewStarage Nostriybrid	NO N	0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	0 20222 Sell 20211 Sell 20211 Sell 20222 0 20558 0 2044 0 2033 0 2033 0 2033 0 2030 0 2023 0 2020 0 2020 0 2022 0 2022 0 2023 0 2023 0 2033 0 2034 0 2031 0 2021 0 2021 0 2021 0 2022 0 2023 0 2023 0 2023 0 2033 0 2033 0 2034 0 2032 0 2032 0 2033 0 2034	9 11 11 3 3 2 12 12 8 8 5 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	6 6 1 177 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	288 289 280 280 280 280 280 280 280 280 280 280
GOOSEX I SOUARI COCREAN I SOUARI GOOSEX I SOUARI NEW GENERIC SOLAR I JAVIS NEW GENERIC COMBINED CYCLE EXISTING GENERIC MISTATE LARGE H EXISTING GENERIC MY HYDRO	Online Online Online Online Online Online Development Development Development Development Development Development Development Development Online	0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	Nostrybrid Nostrybrid Nostrybrid Nostrybrid Nostrybrid Nostrybrid NewSolarNewStorage NewSolarNewStorage Nostrybrid	NO N	0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	0 2022 Self 2021 Self 2021 Self 2021 Self 2022 0 2025 0 2025 0 2026 0 2026 0 2027	9 11 11 3 3 2 12 12 8 8 5 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	6 1 17 1 1 1 1 1 1 1	
GOOSEX I SOUARI COCRAN I SOUARI COCRAN I SOUARI GOOSEX I SOUARI NEW GENERIC, SOLAN JAWS NEW GENERIC COMBINED CYCLE EXTENSING GENERIC COMBINED CYCLE EXTENSING GENERIC, COMBINED EXTENSING GENERIC, MAY PROPAGE EXTENSING GENERIC, MAY HORD DESTING GENERIC, MAY HORD DESTING GENERIC, MAY HORD DESTING GENERIC, MAY HORD DESTING GENERIC MAY ATALLAGE H DESTING GENERIC MAY A	Online Online Online Online Online Dolline Dovelopment Development Development Development Development Development Development Online O	0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	Nostriybrid Nostriybrid Nostriybrid Nostriybrid NewSolarNewStarage NewSolarNewStarage NewSolarNewStarage Nostriybrid	NO N	0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	0 20222 Sell 20211 Sell 20211 Sell 20222 0 2025 0 2024 0 2033 0 2033 0 2033 0 2033 0 2020 0 2021 0 2022 0 2022 0 2023 0 2023 0 2034 0 2034 0 2021 0 2021 0 2021 0 2021 0 2021 0 2022 0 2023 0 2023 0 2023 0 2023 0 2023 0 2023 0 2023 0 2024 0 2025 0 2024	9 111 3 3 3 2 2 122 8 8 5 1 1 1 1 1 7 7 1 4 4 7 7 1 1 1 1 1 1 1 1	6 6 1 17 17 1 1 1 1 1 1 1 1 1 1 1 1 1 1	
GOOSE I SOLARI CORCRAN I SOLARI GOOSE I, SOLARI MEW GENERIC SOLARI JAMIS NEW GENERIC SOLARI JAMIS GOODE J. CTGA GENERIC COMBINED CYCLE EXISTING GENERIC MARTAE EXISTING GENERIC MISTATE LARGE H EXISTING GENERIC NISTATE LARGE H EXISTING GENERIC NISTATE LARGE H EXISTING GENERIC NIW HYDRO EXISTING GENERIC NISTATE LARGE H EXISTING GENER	Online Online Online Online Online Doublepment Development Development Development Development Development Development Development Development Online	0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	Nostrybrid Nostrybrid Nostrybrid Nostrybrid Nostrybrid Nostrybrid NewSolarNewStorage NewSolarNewStorage Nostrybrid	NO N	0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	0 2022 Sell 2021 Sell 2021 Sell 2021 Sell 2022 0 2025 0 2025 0 2026 0 2026 0 2026 0 2027	9 111 3 3 3 2 2 122 8 8 5 1 1 1 1 1 7 7 1 4 4 7 7 1 1 1 1 1 1 1 1	6 6 1 177 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	
GOOSIA I SOLARI CORCAN I SOLARI GOOSIA I, SOLARI WEV GENERIC SOLARI JAVIS NEW GENERIC SOLARI JAVIS SUEVI GENERIC SOLARI JAVIS SUEVI GENERIC SOLARI JAVIS SUEVI GENERIC SOLARI JAVIS SUEVI GENERIC SOLARI JAVIS DEVIS GENERIC COMBINED CYCLE EXISTING GENERIC COMBINED CYCLE EXISTING GENERIC COMBINED CYCLE EXISTING GENERIC COMBINED CYCLE EXISTING GENERIC COMBINED EXISTING GENERIC MATATE LARGE H EXISTING GENERIC NOTATE LARGE H	Online Online Online Online Online Dolline Dovelopment Development Development Development Development Development Development Online O	0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	Nostriybrid Nostriybrid Nostriybrid Nostriybrid NewSolarNewStarage NewSolarNewStarage NewSolarNewStarage Nostriybrid	NO N	0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	0 2022 Sell 2021 Sell 2021 Sell 2021 Sell 2022 0 2025 0 2025 0 2026 0 2026 0 2026 0 2027	9 111 3 3 3 2 2 122 8 8 5 1 1 1 1 1 7 7 1 4 4 7 7 1 1 1 1 1 1 1 1	6 6 1 17 17 1 1 1 1 1 1 1 1 1 1 1 1 1 1	
GOOSE I SOLARI CORCRAN I SOLARI GOOSE I, SOLARI MEW GENERIC SOLARI JAMIS NEW GENERIC SOLARI JAMIS GOODE J. CTGA GENERIC COMBINED CYCLE EXISTING GENERIC MARTAE EXISTING GENERIC MISTATE LARGE H EXISTING GENERIC NISTATE LARGE H EXISTING GENERIC NISTATE LARGE H EXISTING GENERIC NIW HYDRO EXISTING GENERIC NISTATE LARGE H EXISTING GENER	Online Online Online Online Online Dolline Dovelopment Development Online On	0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	Nostrybrid Nostrybrid Nostrybrid Nostrybrid Nostrybrid Nostrybrid NewSolarNewStorage NewSolarNewStorage Nostrybrid	NO N	0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	0 2022 Self 2021 Self 2021 Self 2021 Self 2022 0 2025 0 2025 0 2026 0 2026 0 2026 0 2027 0 20	9 111 3 3 3 2 2 122 8 8 5 1 1 1 1 1 7 7 1 4 4 7 7 1 1 1 1 1 1 1 1	6 6 1 17 17 1 1 1 1 1 1 1 1 1 1 1 1 1 1	2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2
GOOSIA I SOLARI CORCAN I SOLARI GOOSIA I, SOLARI WEV GENERIC SOLARI JAVIS NEW GENERIC SOLARI JAVIS SUEVI GENERIC SOLARI JAVIS SUEVI GENERIC SOLARI JAVIS SUEVI GENERIC COMBINED CYCLE EXISTING GENERIC COMBINED CYCLE EXISTING GENERIC COMBINED CYCLE EXISTING GENERIC COMBINED CYCLE EXISTING GENERIC COMBINED EXISTING GENERIC COMBINED EXISTING GENERIC MORTATE EXISTING GENERIC MORTATE EXISTING GENERIC NOW HYDRO EXISTING GENERIC NW HYDRO EXCEPTION OF THE NUMBER	Online Online Online Online Online Dolline Dovelopment Development Online On	0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	Nostriybrid Nostriybrid Nostriybrid Nostriybrid NewSolarNewStarage NewSolarNewStarage NewSolarNewStarage Nostriybrid	NO N	0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	0 0 0 358 368 240 240 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	0 2022 Sell 2021 Sell 2021 Sell 2021 Sell 2022 0 2025 0 2025 0 2026 0 2026 0 2026 0 2027 0 20	9 111 3 3 3 2 2 122 8 8 5 1 1 1 1 1 7 7 1 4 4 7 7 1 1 1 1 1 1 1 1	6 6 1 17 17 1 1 1 1 1 1 1 1 1 1 1 1 1 1	2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2
GOOSE I SOLARI CORCAN I SOLARI GOOSE I, SOLARI NEW, GENERIC SOLARI JAVAS DESTRING GENERIC COMBINED CYCLE DASTING GENERIC COMBINED CYCLE DASTING GENERIC COMBINED CYCLE DASTING GENERIC COMBINED CANCHE I PLAN PARCEL GENERIC GATTERY, STORAGE CANCHE I PLAN DASTING GENERIC NEW HORDO D	Online Online Online Online Online Dolline Dovelopment Development Online On	0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	Nostriybrid Nostriybrid Nostriybrid Nostriybrid NewSolarNewStarage NewSolarNewStarage NewSolarNewStarage Nostriybrid	NO N	0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	0 2022 Self 2021 Self 2021 Self 2021 Self 2022 0 2025 0 2025 0 2026 0 2026 0 2026 0 2027 0 20	9 111 3 3 3 2 2 122 8 8 5 1 1 1 1 1 7 7 1 4 4 7 7 1 1 1 1 1 1 1 1	6 6 1 1 17 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	2 (2 (2 (2 (2 (2 (2 (2 (2 (2 (2 (2 (2 (2
GOOSIA I SOLARI CORCRAN I SOLARI GOOSIA I, SOLARI NEW GENERIC SOLARI JAVIS SUEVI GENERIC SOLARI JAVIS SUEVI GENERIC SOLARI JAVIS SUEVI GENERIC SOLARI JAVIS SUEVI GENERIC COMBINED CYCLE EXSTING GENERIC COMBINED CYCLE EXSTRING GENERIC COMBINED EXSTRING GENERIC MARTINE EXSTRING GENERIC MARTINE EXSTRING GENERIC MISTATE LARGE H EXSTRING GENERIC NISTATE LARGE H EXSTRING GENERIC NEW MORNO BAY OFFSHOR NEW GENERIC GENTHEMMAL NEW GENERIC GENTHEMMAL NEW GENERIC GENTHEMMAL NEW GENERIC GENTHEMMAL	Online Online Online Online Online Dolline Dolline Development Development Development Development Development Development Development Development Development Online Onli	0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	Nostrybrid Nostrybrid Nostrybrid Nostrybrid Nostrybrid Nostrybrid NewSolarNewStorage NewSolarNewStorage Nostrybrid	NO N	0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	0 2022 Sell 2021 Sell 2021 Sell 2021 0 2025 0 2025 0 2026 0 2025 0 2026 0 2026 0 2027	9 111 3 3 3 2 2 122 8 8 5 1 1 1 1 1 7 7 1 4 4 7 7 1 1 1 1 1 1 1 1	6 6 1 17 17 1 1 1 1 1 1 1 1 1 1 1 1 1 1	200 200 200 200 200 200 200 200 200 200
GOOSE I SOLARI CORCAN I SOLARI CORCAN I SOLARI REW, GERRER, SOLARI JAVAS NEW, GERRER, COMBINED CYCLE DISTRING, GERRER, COMBINED CYCLE DISTRING, GERRER, COMBINED CYCLE DISTRING, GERRER, COMBINED CYCLE DISTRING, GERRER, COMBINED CYCLE DISTRING, GERRER, COMBINED CYCLE DISTRING, GERRER, COMBINED CYCLE DISTRING, GERRER, COMBINED CYCLE DISTRING, GERRER, COMBINED CYCLE DISTRING, GERRER, COMBINED CONTROL GERRER, MAY HYDRO DISTRING, GERRER, MAY HYDRO DIST	Online Online Online Online Online Dolline Dolline Development Online	0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	Nostriybrid Nostriybrid Nostriybrid Nostriybrid NewSolarNewStarage NewSolarNewStarage NewSolarNewStarage Nostriybrid	NO N	0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	0 2022 Self 2021 Self 2021 Self 2021 Self 2022 0 2025 0 2025 0 2026 0 2026 0 2026 0 2027 0 20	9 111 3 3 3 2 2 122 8 8 5 1 1 1 1 1 7 7 1 4 4 7 7 1 1 1 1 1 1 1 1	6 6 1 1 17 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	26 26 26 26 26 26 26 26 26 26 26 26 26 2
GOOSEX I SOUARI COCREAN I SOUARI GOOSEX I SOUARI NEW GENERIC SOLAR I JAVIS NEW GENERIC COMBINED CYCLE EXISTING GENERIC MISTATE LARGE H EXISTING GENERIC MIS	Online Online Online Online Doulepment Development Development Development Development Development Development Development Development Online	0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	Nostrybrid Nostrybrid Nostrybrid Nostrybrid Nostrybrid Nostrybrid NewSolarNewStorage NewSolarNewStorage Nostrybrid	NO N	0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	0 2022	9 111 3 3 3 2 2 122 8 8 5 1 1 1 1 1 7 7 1 4 4 7 7 1 1 1 1 1 1 1 1	6 6 1 1 17 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	2001 2002 2003 2004 2004 2005 2005 2007 2007 2007 2007 2007 2007
GOOSEX I SOUARI COCRAN I SOUARI COCRAN I SOUARI MEW GENERIC, SOLAN JAWS NEW GENERIC, COMBINED CYCLE EXTENSIO GENERIC MISTATE LARGE H EXTENSIO GENERIC MORRO BAY OFFSHOR NEW GENERIC GENTHEMAL NEW GENERIC MORRO BAY OFFSHOR NEW GENERIC MORRO BAY OFFSHOR NEW GENERIC GENTHEMAL NEW GENERIC	Online Online Online Online Online Dolline Dolline Development Online	0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	Nostriybrid Nostriybrid Nostriybrid Nostriybrid Nostriybrid NewSolarNewStarage NewSolarNewStarage NewSolarNewStarage Nostriybrid	NO N	0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	0 0 0 0 358 368 240 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	0 2022 Self 2021 Self 2021 Self 2021 Self 2022 0 2025 0 2025 0 2026 0 2026 0 2026 0 2027 0 20	9 111 3 3 3 2 2 122 8 8 5 1 1 1 1 1 7 7 1 4 4 7 7 1 1 1 1 1 1 1 1	6 6 1 1 17 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	200 200 200 200 200 200 200 200 200 200
GODSKI I SOLARI CORCAN I SOLARI CORCAN I SOLARI MEW GENERIC SOLARI SAVIS NEW GENERIC SOLARI SAVIS SEVE GENERIC SOLARI SAVIS SEVE GENERIC SOLARI SAVIS SEVE GENERIC SOLARI SAVIS SEVE SOLAR	Online Online Online Online Doulepment Development Development Development Development Development Development Development Development Online	0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	Nostrybrid Nostrybrid Nostrybrid Nostrybrid Nostrybrid Nostrybrid NewSolarNewStorage NewSolarNewStorage Nostrybrid	NO N	0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	0 0 0 0 358 368 240 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	0 2022 Self 2021 Self 2021 Self 2021 Self 2022 0 2025 0 2025 0 2026 0 2026 0 2026 0 2027 0	9 111 3 3 3 2 2 122 8 8 5 1 1 1 1 1 7 7 1 4 4 7 7 1 1 1 1 1 1 1 1	6 6 1 1 17 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	26 26 26 26 26 26 26 26 26 26 26 26 26 2
GODSIA I SOLARI CORCAN I SOLARI CORCAN I SOLARI MEW GENERIC SOLARI SAVIS NEW GENERIC SOLARI SAVIS SEVEN GENERIC SOLARI SAVIS COCOPE 2. CITGA BOGUET J. UNITAI SOUTER 2. COST EXISTING GENERIC COMBINED CYCLE EXISTING GENERIC COMBINED EXISTING GENERIC MERITARY STORAGE EXISTING GENERIC MERITARY STORAGE EXISTING GENERIC MISTATE LARGE H EXISTING GENERIC MY HYDRO	Online Online Online Online Online Dolline Dolline Development Online	0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	Nostriybrid Nostriybrid Nostriybrid Nostriybrid Nostriybrid NewSolarNewStarage NewSolarNewStarage NewSolarNewStarage Nostriybrid	NO N	0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	0 2022 Self 2021 Self 2021 Self 2021 Self 2022 0 2025 0 2025 0 2026 0 2026 0 2026 0 2027 0 20	9 111 3 3 3 2 2 122 8 8 5 1 1 1 1 1 7 7 1 4 4 7 7 1 1 1 1 1 1 1 1	6 6 1 1 17 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	200 200 200 200 200 200 200 200 200 200
GOOSEX I SOUARI COCREAN I SOUARI GOOSEX I SOUARI NEW GENERIC SOLAR I JAXIS NEW GENERIC COMBINED CYCLE EXISTING GENERIC MISTATE LARGE H EXISTING GENERIC SOLAR FIRMS EXISTING GENERIC SOLAR FIRMS EXISTING GENERIC MISTATE LARGE H	Online Online Online Online Online Online Dovelopment Development Development Development Development Development Development Development Online PlannedNew Pl	0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	Nostriybrid Nostriybrid Nostriybrid Nostriybrid NewSolarNewStorage NewSolarNewStorage Nostriybrid	NO N	0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	0 2022 Self 2021 Self 2021 Self 2021 Self 2022 0 2025 0 2025 0 2026 0 2026 0 2026 0 2027 0 20	9 111 3 3 3 2 2 122 8 8 5 1 1 1 1 1 7 7 1 4 4 7 7 1 1 1 1 1 1 1 1	6 6 1 1 17 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	200 200 200 200 200 200 200 200 200 200

_NEW_GENERIC_BATTERY_STORAGE PlannedNew	200 NotHybrid 0	0	0	800	0	2028	1	1	2047
_NEW_GENERIC_BATTERY_STORAGE PlannedNew	200 NotHybrid 0	0	0	800	0	2034	1	1	2053
_EXISTING_GENERIC_COMBINED_CYCLE PlannedExisting	750 NotHybrid 0	0	0	0	0	2023	1	1	2023
_EXISTING_GENERIC_COMBINED_CYCLE PlannedExisting	686 NotHybrid 0	0	0	0	0	2024	1	1	2024
_EXISTING_GENERIC_COMBINED_CYCLE PlannedExisting	639 NotHybrid 0	0	0	0	0	2025	1	1	2025
_EXISTING_GENERIC_COMBINED_CYCLE PlannedExisting	731 NotHybrid 0	0	0	0	0	2026	1	1	2026
_EXISTING_GENERIC_COMBINED_CYCLE PlannedExisting	672 NotHybrid 0	0	0	0	0	2027	1	1	2027
_EXISTING_GENERIC_COMBINED_CYCLE PlannedExisting	498 NotHybrid 0	0	0	0	0	2028	1	1	2028
_EXISTING_GENERIC_COMBINED_CYCLE PlannedExisting	535 NotHybrid 0	0	0	0	0	2029	1	1	2029
_EXISTING_GENERIC_COMBINED_CYCLE PlannedExisting	425 NotHybrid 0	0	0	0	0	2030	1	1	2030
EXISTING_GENERIC_COMBINED_CYCLE PlannedExisting	518 NotHybrid 0	0	0	0	0	2031	1	1	2031
_EXISTING_GENERIC_COMBINED_CYCLE PlannedExisting	542 NotHybrid 0	0	0	0	0	2032	1	1	2032
_EXISTING_GENERIC_COMBINED_CYCLE PlannedExisting	530 NotHybrid 0	0	0	0	0	2033	1	1	2033
_EXISTING_GENERIC_COMBINED_CYCLE PlannedExisting	541 NotHybrid 0	0	0	0	0	2034	1	1	2034
EXISTING GENERIC COMBINED CYCLE PlannedExisting	549 NotHybrid 0	0	0	0	0	2035	1	1	2035
NEW GENERIC DR Review	15 NotHybrid 0	0	0	0	0	2023	1	1	2032
EXISTING GENERIC COMBINED CYCLE Online	44 NotHybrid 0	0	0	0	0	2024	1	1	2026
EXISTING GENERIC COMBINED CYCLE Online	39 NotHybrid 0	0	0	0	0	2024	1	1	2025
EXISTING GENERIC COMBINED CYCLE Online	61 NotHybrid 0	0	0	0	0	2024	1	1	2024
EXISTING GENERIC COGEN Online	4 NotHybrid 0	0	0	0	0	2024	1	1	2024
EXISTING GENERIC COGEN Online	3 NotHybrid 0	0	0	0	0	2024	1	1	2025
EXISTING GENERIC COGEN Online	1 NotHybrid 0	0	0	0	0	2024	1	1	2026
EXISTING GENERIC BATTERY STORAGE Online	23 NotHybrid 0	0	0	93.23439546	0	2024	1	1	2035
NEW GENERIC BATTERY STORAGE Development	6 NotHybrid 0	0	0	23.30859887	0	2025	1	1	2035
NEW GENERIC BATTERY STORAGE Development	0 NotHybrid 0	0	0	0.385368835	0	2024	1	1	2035

	nd_date_month contract_en	d_date_day buying_energy_capacity	multiplier	resource el		elcc type (f			hybrid stor	short durat	2024	2025 2026 2027 2028 2029 2030 2031 2032 2033 2034
NHEATL_6_LNDFIL	6	30 EnergyCapacity	1	biomass_w		biomass_w	2014	2030	100%	100%	1.536156	1.577034 1.617911 1.619055 1.620199 1.60572 1.59124 0 0 0 0
PEABDY_2_LNDFIL	6	30 EnergyCapacity	1	biomass_w		biomass_w	2014	2032	100%	100%		1.293976 1.327517 1.328455 1.329394 1.317513 1.305633 1.330399 1.355164 0 0
GEYS13_7_UNIT13	12	31 EnergyCapacity	1	geotherma		geotherma	2017	2026	100%	100%	8.640037	8.78262 8.925204 0 0 0 0 0 0 0
PLSNTG_7_LNCLND	2	13 EnergyCapacity	1	biomass_w		biomass_w	2013	2032	100%	100%	3.923107	4.027501 4.131895 4.134817 4.137739 4.100761 4.063782 4.140866 4.217949 0 0
/OYAGR_2_VOYWD3	12	28 EnergyCapacity	1	in_state_w		in_state_w	2019	2030	100%	100%	0	
NOVATO_6_LNDFL	9	13 EnergyCapacity	1		n/a L	biogas	2018	2036	100%	100%	2.958149	3.035487 3.112826 3.101022 3.089218 3.05182 3.014423 3.088523 3.162624 3.236724 3.310825 3
IGSKYN_2_AS2SR1	12	31 EnergyCapacity	1		n/a ı	utility_pv	2019	2038	100%	100%	10.08	10.73107 11.38214 10.67643 9.970732 8.135366 6.3 6.384 6.468 6.552 6.636
EXISTING_GENERIC_SOLAR_FIXED	2	28 EnergyCapacity	1	utility_pv	n/a L	utility_pv	2017	2036	100%	100%	0.09504	0.101179 0.107317 0.100664 0.09401 0.076705 0.0594 0.060192 0.060984 0.061776 0.062568 0
EXISTING_GENERIC_SOLAR_FIXED	8	31 EnergyCapacity	1	utility_pv	n/a ı	utility_pv	2017	2035	100%	100%	0.09504	0.101179 0.107317 0.100664 0.09401 0.076705 0.0594 0.060192 0.060984 0.061776 0.062568 0
DSRTHV_2_DH1SR1	12	16 EnergyCapacity	1		n/a u	utility_pv	2021	2040	100%	100%	7.68	8.176051 8.672103 8.134426 7.596749 6.198374 4.8 4.864 4.928 4.992 5.056
EXISTING_GENERIC_SOLAR_FIXED	10	5 EnergyCapacity	1		n/a ı	utility_pv	2017	2036	100%	100%	0.09504	0.101179 0.107317 0.100664 0.09401 0.076705 0.0594 0.060192 0.060984 0.061776 0.062568 0
EXISTING_GENERIC_SOLAR_FIXED	10	5 EnergyCapacity	1	utility_pv	n/a u	utility_pv	2017	2036	100%	100%	0.09504	0.101179 0.107317 0.100664 0.09401 0.076705 0.0594 0.060192 0.060984 0.061776 0.062568 0
RNQL8_2_ROJSR1	4	13 EnergyCapacity	1	utility_pv	n/a u	utility_pv	2018	2032	100%	100%		10.22006 10.84013 10.16803 9.495936 7.747968 6 6.08 6.16 0 0
TBERA 1 LB1SR1	12	9 EnergyCapacity	1	utility pv	n/a u	utility pv	2021	2040	100%	100%	3.84	4.088026 4.336051 4.067213 3.798374 3.099187 2.4 2.432 2.464 2.496 2.528
TBEAR 1 LB3SR3	12	9 EnergyCapacity	1	utility pv	n/a u	utility pv	2021	2040	100%	100%	1.92	2.044013 2.168026 2.033606 1.899187 1.549594 1.2 1.216 1.232 1.248 1.264
TBEAR 1 LB4SR4	12	9 EnergyCapacity	1	utility pv	n/a u	utility pv	2021	2040	100%	100%	4.8	5.110032 5.420064 5.084016 4.747968 3.873984 3 3.04 3.08 3.12 3.16
TBEAR 1 LB4SR5	12	9 EnergyCapacity	1	utility pv	n/a u	utility pv	2021	2040	100%	100%	4.8	5.110032 5.420064 5.084016 4.747968 3.873984 3 3.04 3.08 3.12 3.16
EXISTING GENERIC SOLAR FIXED	10	22 EnergyCapacity	1		n/a u	utility py	2013	2032	100%	100%	0.09504	0.101179 0.107317 0.100664 0.09401 0.076705 0.0594 0.060192 0.060984 0 0
ISTANG 2 SOLAR4	12	31 EnergyCapacity	1		n/a u	utility ny	2016	2032	100%	100%	2.88	3.066019 3.252039 3.05041 2.848781 2.32439 1.8 1.824 1.848 0 0
EXISTING GENERIC SOLAR FIXED	8	29 EnergyCapacity	1	utility pv	n/a i	utility pv	2021	2039	100%	100%	0.09504	0.101179 0.107317 0.100664 0.09401 0.076705 0.0594 0.060192 0.060984 0.061776 0.062568 0
EXISTING GENERIC SOLAR FIXED	8	29 EnergyCapacity	1	utility pv	n/a i	utility pv	2021	2039	100%	100%	0.09504	0.101179 0.107317 0.100664 0.09401 0.076705 0.0594 0.060192 0.060984 0.061776 0.062568 0
EXISTING GENERIC SOLAR FIXED	8	31 EnergyCapacity		utility pv		utility pv	2021	2033	100%	100%	0.09504	0.101179 0.107317 0.100664 0.09401 0.076705 0.0594 0.060192 0.060984 0.061776 0.062568 0
EXISTING GENERIC SOLAR FIXED	0		1	utility pv		utility pv	2020	2038	100%	100%	0.09504	0.101179 0.107317 0.100864 0.09401 0.076705 0.0534 0.080192 0.080984 0.081776 0.062568 0
EXISTING GENERIC SOLAR FIXED EXISTING GENERIC SOLAR FIXED	0	31 EnergyCapacity 31 EnergyCapacity	1	utility pv utility pv	n/a L	utility pv	2020	2038	100%	100%	0.09504	0.101179 0.107317 0.100664 0.09401 0.076705 0.0594 0.060192 0.060984 0.061776 0.062568 0
	8		1		n/u l			2038		100%	0.09504	
EXISTING_GENERIC_SOLAR_FIXED EXISTING_GENERIC_SOLAR_FIXED	3	25 Energy capacity	1	utility_pv	n/a L	utility_pv	2021 2021	2040	100%	100%	0.09504	0.101179 0.107317 0.100664 0.09401 0.076705 0.0594 0.060192 0.060984 0.061776 0.062568 0
	3	25 Energy capacity	1	utility_pv	n/a L	utility_pv					0.0330+	
EXISTING_GENERIC_SOLAR_FIXED	9	29 EnergyCapacity	1		n/a i	utility_pv	2021	2039	100%	100%	0.09312	0.099135 0.105149 0.09863 0.092111 0.075155 0.0582 0.058976 0.059752 0.060528 0.061304 0
EXISTING_GENERIC_SOLAR_FIXED	12	9 EnergyCapacity	1	utility_pv	n/a ı	utility_pv	2019	2038	100%	100%	0.09504	0.101179 0.107317 0.100664 0.09401 0.076705 0.0594 0.060192 0.060984 0.061776 0.062568 0
EXISTING_GENERIC_SOLAR_FIXED	7	30 EnergyCapacity	1	utility_pv	n/a ı	utility_pv	2019	2037	100%	100%	0.09504	0.101179 0.107317 0.100664 0.09401 0.076705 0.0594 0.060192 0.060984 0.061776 0.062568 0
EXISTING_GENERIC_SOLAR_FIXED	5	13 EnergyCapacity	1		n/a u	utility_pv	2019	2038	100%	100%	0.0096	0.01022 0.01084 0.010168 0.009496 0.007748 0.006 0.00608 0.00616 0.00624 0.00632
ORCAN_1_SOLAR2	4	30 EnergyCapacity	1		n/a u	utility_pv	2015	2039	100%	100%	1.056	1.124207 1.192414 1.118484 1.044553 0.852276 0.66 0.6688 0.6776 0.6864 0.6952
OOSLK_1_SOLAR1	4	30 EnergyCapacity	1	utility_pv	n/a u	utility_pv	2015	2039	100%	100%	1.152	1.226408 1.300815 1.220164 1.139512 0.929756 0.72 0.7296 0.7392 0.7488 0.7584
EXISTING_GENERIC_SOLAR_FIXED	4	30 EnergyCapacity	1	utility_pv	n/a u	utility_pv	2015	2039	100%	100%	0.09504	0.101179 0.107317 0.100664 0.09401 0.076705 0.0594 0.060192 0.060984 0.061776 0.062568 0
ICHMN 1 CHVSR2	12	21 EnergyCapacity	1	utility_pv	n/a u	utility py	2018	2037	100%	100%	0.816	0.868705 0.921411 0.864283 0.807155 0.658577 0.51 0.5168 0.5236 0.5304 0.5372
ICHMN 1 SOLAR	12	21 EnergyCapacity	1		n/a u	utility_pv	2018	2037	100%	100%	0.192	0.204401 0.216803 0.203361 0.189919 0.154959 0.12 0.1216 0.1232 0.1248 0.1264
RNCNY 6 UNIT	7	4 EnergyCapacity	1	small hydr	n/a s	small hydr	2022	2035	100%	100%	4.307478	4.287055 4.266633 4.043767 3.820902 3.744074 3.667246 3.587345 3.507444 3.427543 3.347642 3.
EXISTING GENERIC SOLAR FIXED	3	29 EnergyCapacity	1	utility pv	n/a i	utility pv	2021	2040	100%	100%	0.09504	0.101179 0.107317 0.100664 0.09401 0.076705 0.0594 0.060192 0.060984 0.061776 0.062568 0
EXISTING GENERIC SOLAR FIXED	9	29 EnergyCapacity	1		n/a i	utility_pv	2022	2040	100%	100%		0.511003 0.542006 0.508402 0.474797 0.387398 0.3 0.304 0.308 0.312 0.316
EXISTING GENERIC SOLAR FIXED	5	20 EnergyCapacity	1	utility pv	n/a i	utility pv	2022	2041	100%	100%		0.306602 0.325204 0.305041 0.284878 0.232439 0.18 0.1824 0.1848 0.1872 0.1896
TRAUSSWIND	7	Energy Capacity	1	in state w	n/a i	in state w	2023	2042	100%	100%	0.200	0.300001 0.323104 0.305041 0.104070 0.231433 0.10 0.1014 0.3040 0.1072 0.1050
EXISTING GENERIC SOLAR FIXED	11	30 EnergyCapacity	- 1	utility py	-/-	utility py	2023	2041	100%	100%	0.00504	0.101179 0.107317 0.100664 0.09401 0.076705 0.0594 0.060192 0.060984 0.061776 0.062568 0.
EXISTING GENERIC SOLAR FIXED	- 11		- 1	utility pv	-/-	utility pv	2022	2041	100%	100%	0.09304	0.095813 0.101626 0.095325 0.089024 0.072637 0.05625 0.057 0.05775 0.0585 0.05925
EXISTING GENERIC SOLAR FIXED	11	30 EnergyCapacity 30 EnergyCapacity	1	utility pv	11/U L	utility pv	2022	2040	100%	100%		0.093813 0.101826 0.093323 0.083024 0.072837 0.03823 0.037 0.0373 0.0383 0.03923
NEW GENERIC SOLAR FIXED	11				n/a i		2022	2041	100%	100%	0.09218	0.511003 0.542006 0.508402 0.474797 0.387398 0.3 0.304 0.308 0.312 0.316
						utility pv						
EXISTING GENERIC SOLAR FIXED	10	31 EnergyCapacity		utility pv		utility pv	2022	2041	100%	100%	0.09504	0.101179 0.107317 0.100664 0.09401 0.076705 0.0594 0.060192 0.060984 0.061776 0.062568 0
EXISTING GENERIC BIOMASS/WOOD	7	15 EnergyCapacity		biomass w		biomass w	2023	2031	100%	100%		0.804692 0.825549 0.826133 0.826717 0.819329 0.81194 0.827342 0 0 0
OOSLK 1 SOLAR1	12	31 EnergyOnly	_	utility pv	n/a L	utility pv	2022	2024	100%	100%	0	
ORCAN 1 SOLAR2	12	31 EnergyOnly	0		n/a u	utility pv	2022	2024	100%	100%	0	0 0 0 0 0 0 0 0 0
GOOSLK_1_SOLAR1	12	31 EnergyOnly	0	utility_pv	n/a u	utility_pv	2022	2024	100%	100%	0	0 0 0 0 0 0 0 0 0
NEW_GENERIC_SOLAR_1AXIS	2	29 EnergyCapacity	1	utility_pv	4hr_batteril	hybrid	2025	2039	100%	100%	0	93.15806 95.29613 87.95403 80.61194 77.57597 74.54 68.2904 62.0408 55.7912 49.5416
NEW_GENERIC_SOLAR_1AXIS	2	21 EnergyCapacity	1	utility_pv	4hr_batteril	hybrid	2024	2043	100%	100%	0.9	0.925601 0.951203 0.879761 0.808319 0.762159 0.716 0.66256 0.60912 0.55568 0.50224
NEW_GENERIC_SOLAR_1AXIS	12	30 EnergyCapacity	1	utility_pv	n/a u	utility_pv	2024	2043	100%	100%	0.02304	0.024528 0.026016 0.024403 0.02279 0.018595 0.0144 0.014592 0.014784 0.014976 0.015168 0
NEW_GENERIC_SOLAR_1AXIS	12	30 EnergyCapacity	1	utility_pv	n/a u	utility_pv	2024	2043	100%	100%	0.4224	0.449683 0.476966 0.447393 0.417821 0.340911 0.264 0.26752 0.27104 0.27456 0.27808
NEW_GENERIC_SOLAR_1AXIS	8	27 EnergyCapacity	1	utility_pv	4hr_batteri l	hybrid	2024	2037	100%	100%	63.66	65.33207 67.00414 61.91484 56.82553 54.06276 51.3 47.26 43.22 39.18 35.14
OCOPP_2_CTG4	9	30 CapacityOnly	1	gas_ct	n/a c	gas_ct	2023	2025	100%	100%	64.67364	65.82678 0 0 0 0 0 0 0 0
GRICO_7_UNIT	12	31 CapacityOnly	1	gas_cc	n/a c	gas_cc	2020	2030	100%	100%	42.32256	43.04568 43.7688 43.62155 43.47431 42.9585 42.44269 0 0 0 0
OGUE 1 UNITA1	12	31 CapacityOnly	1	aas ct	n/a	aas ct	2023	2024	100%	100%	25.4668	
UTTER 2 CISO	12	31 CapacityOnly	1	aas cc	n/a	aas cc	2021	2023	100%	100%	0	
EXISTING GENERIC COMBINED CYCLE	12	31 CanacityOnly	1	aas cc	n/a	gas_cc gas_cc	2021	2023	100%	100%	21 20369	21 55597 21 92875 21 85448 21 78071 0 0 0 0 0 0
EXISTING GENERIC COMBINED CYCLE	12	31 CanacityOnly	1		n/a c	ans cc	2023	2020	100%	100%	12.72221	12 93958 13 15695 13 1769 13 06843 12 91338 12 75832 0 0 0 0
EXISTING GENERIC COMBINED CYCLE	12	31 CapacityOnly	1	gas cc	n/a	gas_cc gas_cc	2023	2030	100%	100%	12.72221	12.93958 13.15695 13.11269 13.06843 12.91338 12.75832 0 0 0 0
EXISTING GENERIC CONVBINED CTCLE	12	31 CapacityOnly	1	demand re	n/a .	demand re	2023	2025	100%	100%	17.86	
NEW GENERIC BATTERY STORAGE	12		1	4hr hatter		aemana_re Ahr hatter		2025	100%			166.7775 169.83 156.4175 143.005 140.415 137.825 125.097 112.369 99.641 0
	3	31 CapacityOnly			1.9 0		2024			100%	103.725	100.7773 103.03 130.4173 143.003 140.413 137.825 125.097 112.369 99.641 0
AMCHE 1 PL1X3	6	30 EnergyOnly		,	n/a l	hydro	2016	2024	100%	100%	0	0 0 0 0 0 0 0
ARDEB 6 UNITS	12	31 EnergyOnly	0	hydro	n/a l	hydro	2023	2024	100%	100%	0	
XISTING GENERIC INSTATE LARGE H	12	31 EnergyOnly	0	hydro	n/a l	hydro	2024	2024	100%	100%	0	
EXISTING GENERIC NW HYDRO	12	31 EnergyOnly			n/a I	hydro	2021	2024	100%	100%	0	
XISTING GENERIC NW HYDRO	12	31 EnergyOnly			n/a I	hydro	2021	2024	100%	100%	0	0 0 0 0 0 0 0 0 0
XCHEC 7 UNIT1	12	31 EnergyOnly		hydro	n/a I	hydro	2022	2024	100%	100%	0	0 0 0 0 0 0 0 0 0
EXISTING GENERIC NW HYDRO	12	31 EnergyOnly	0	hydro	n/a I	hydro	2023	2025	100%	100%	0	0 0 0 0 0 0 0 0 0
EXISTING GENERIC NW HYDRO	12	31 EnergyOnly	0	hydro	n/a I	hydro	2022	2025	100%	100%	0	0 0 0 0 0 0 0 0 0
EXISTING GENERIC NW HYDRO	12	31 EnergyOnly		hydro	n/a I	hydro	2023	2025	100%	100%	0	0 0 0 0 0 0 0 0
EXISTING GENERIC INSTATE LARGE H	12	31 EnergyOnly	0		n/a I	hvdro	2015	2024	100%	100%	0	
		31 EnergyOnly	0	hydro	n/a I	hydro	2025	2054	100%	100%	0	
EXISTING GENERIC INSTATE LARGE H	12											
EXISTING_GENERIC_INSTATE_LARGE_H EXISTING_GENERIC_INSTATE_LARGE_H	12	31 EnergyOnly	0	hydro	n/a	hvdro	2024	2043	100%	100%	0	

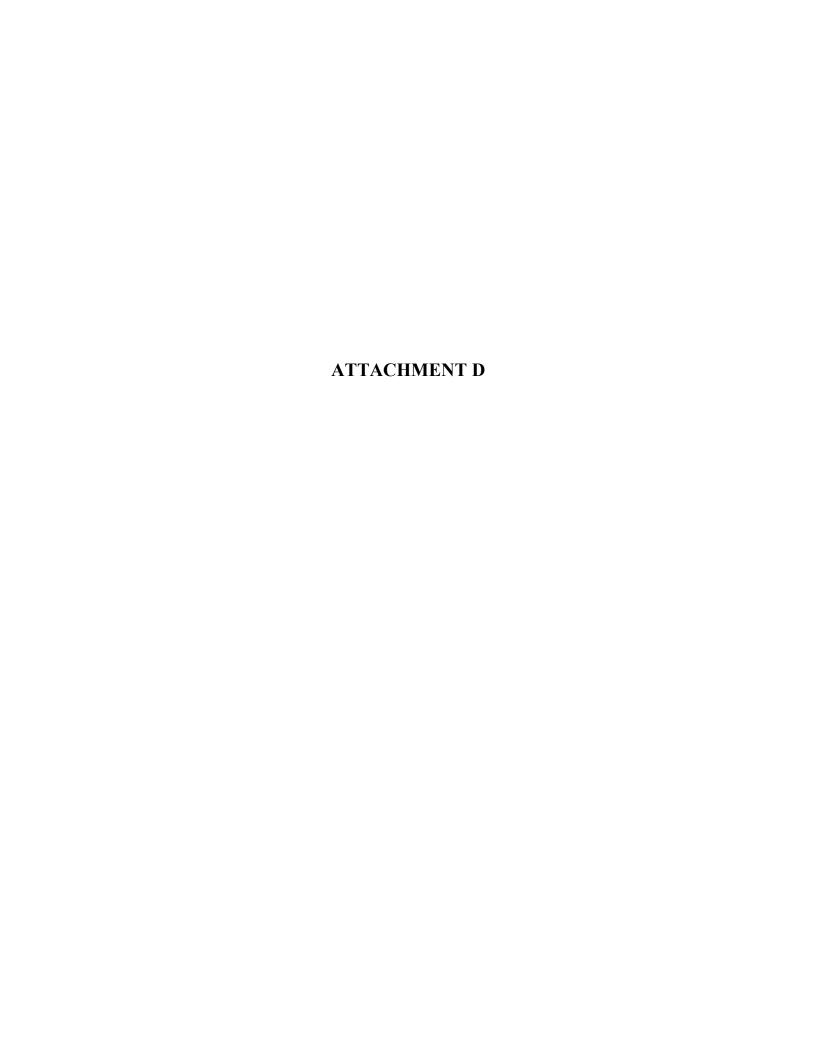
_NEW_GENERIC_WIND 12	31	EnergyCapacity	1	in_state_w n/a	in_state_w	2026	2045	100%	100%	0	0	15.25475	11.84833 8.4419	8.341688	8.241477	7.482969	6.724462	5.965954	5.207446	4.448939
_CREZ_GENERIC_NEW_MEXICO_WIND 12	31	EnergyCapacity	1	out_of_stat n/a	out_of_sta	2030	2049	100%	100%	0	0	0	0 0	0	14.88271	15.70658	16.53044	17.35431	18.17817	19.00203
_CREZ_GENERIC_MORRO_BAY_OFFSHOR 12	31	EnergyCapacity	1	offshore_w n/a	offshore_w	2033	2052	100%	100%	0	0	0	0 0	0	0	0	0	34.428	32.414	30.4
_NEW_GENERIC_GEOTHERMAL 12	31	EnergyCapacity	1	geotherma n/a	geotherma	2030	2049	100%	100%	0	0	0	0 0	0	68.85716	69.40385	69.95055	70.49724	71.04393	71.59062
_NEW_GENERIC_BATTERY_STORAGE 12	31	EnergyCapacity	1	8hr_batter n/a	8hr_batter	2026	2045	100%	100%	0	0	37.2	35.96 34.72	34.3	33.88	32.672	31.464	30.256	29.048	27.84
_EXISTING_GENERIC_BIOMASS/WOOD 12	31	EnergyOnly	0	biomass_w n/a	biomass_w	2023	2024	100%	100%	0	0	0	0 0	0	0	0	0	0	0	0
_EXISTING_GENERIC_SOLAR_FIXED 12	31	EnergyOnly	0	utility_pv n/a	utility_pv	2023	2024	100%	100%	0	0	0	0 0	0	0	0	0	0	0	0
EXISTING GENERIC WIND 12	31	EnergyOnly	0	in state w n/a	in state w	2023	2024	100%	100%	0	0	0	0 0	0	0	0	0	0	0	0
EXISTING GENERIC INSTATE SMALL H 12	31	EnergyOnly	0	hydro n/a	hydro	2023	2024	100%	100%	0	0	0	0 0	0	0	0	0	0	0	0
EXISTING GENERIC GEOTHERMAL 12	31	EnergyOnly	0	geotherma n/a	geotherma	2023	2024	100%	100%	0	0	0	0 0	0	0	0	0	0	0	0
EXISTING GENERIC BIOMASS/WOOD 12	31	EnergyOnly	0	biomass w n/a	biomass w	2023	2042	100%	100%	0	0	0	0 0	0	0	0	0	0	0	0
EXISTING GENERIC SOLAR FIXED 12	31	EnergyOnly	0	utility pv n/a	utility pv	2023	2042	100%	100%	0	0	0	0 0	0	0	0	0	0	0	0
EXISTING GENERIC WIND 12	31	EnergyOnly	0	in state w n/a	in state w	2023	2042	100%	100%	0	0	0	0 0	0	0	0	0	0	0	0
EXISTING GENERIC INSTATE SMALL H 12	31	EnergyOnly	0	hydro n/a	hydro	2023	2042	100%	100%	0	0	0	0 0	0	0	0	0	0	0	0
EXISTING GENERIC GEOTHERMAL 12	31	EnergyOnly	0	geotherma n/a	geotherma	2023	2042	100%	100%	0	0	0	0 0	0	0	0	0	0	0	0
EXISTING GENERIC NW HYDRO 12	31	EnergyOnly	0	hydro n/a	hydro	2023	2042	100%	100%	0	0	0	0 0	0	0	0	0	0	0	0
NEW GENERIC BATTERY STORAGE 12	31	EnergyCapacity	1	8hr batter n/a	8hr batter	2030	2049	100%	100%	0	0	0	0 0	0	42.35	40.84	39.33	37.82	36.31	34.8

NEW GENERIC BATTERY STORAGE	13	31 EnergyCapacity	1 4hr batter	n/a 1/h	nr batter	2028	2047	100%	100%	0	0		0	154.6	151.8	1/10	135.24	121.48	107.72	93.96	80.2
NEW GENERIC BATTERY STORAGE	12	31 EnergyCapacity	1 4hr batter		nr batter	2028	2053	100%	100%	0	0	0	0	134.0	131.0	143	133.24	121.40	107.72	93.96	80.2
EXISTING GENERIC COMBINED CYCLE	12	31 CapacityOnly	1 gas cc		is cc	2023	2023	100%	100%	0	0	0	0	0	0	0	0	0	0	0.50	00.2
EXISTING GENERIC COMBINED CYCLE	13	31 CapacityOnly	1 gas cc	, ,	rs cc	2024	2024	100%	100%	581.8292	0	0	0	0	0	0	0	0	0	0	0
EXISTING GENERIC COMBINED CYCLE	12	31 CapacityOnly	1 gas cc		IS CC	2025	2025	100%	100%	J01.0232	551.2262	0	0	0	0	0	0	0	0	0	0
EXISTING GENERIC COMBINED CYCLE	13	31 CapacityOnly	1 gas cc	, ,	rs cc	2026	2026	100%	100%	0	0	640.9263	0	0	0	0	0	0	0	0	0
EXISTING GENERIC COMBINED CYCLE	12	31 CapacityOnly	1 gas cc		IS CC	2027	2027	100%	100%	0	0	040.3203	587.4485	0	0	0	0	0	0	0	0
EXISTING GENERIC COMBINED CYCLE	13	31 CapacityOnly	1 gas cc	, ,	rs cc	2028	2028	100%	100%	0	0	0	0.4403	433.8718	0	0	0	0	0	0	0
EXISTING GENERIC COMBINED CYCLE	12	31 CapacityOnly	1 gas cc		IS CC	2028	2029	100%	100%	0	0	0	0		460.5771	0	0	0	0	0	0
EXISTING GENERIC COMBINED CYCLE	13	31 CapacityOnly	1 gas cc	, ,	rs cc	2030	2030	100%	100%	0	0	0	0	0	400.5771	361.4858	0	0	0	0	0
EXISTING GENERIC COMBINED CYCLE	12	31 CapacityOnly	1 gas cc		IS CC	2030	2030	100%	100%	0	0	0	0	0	0		447.0256	0	0	0	0
EXISTING GENERIC COMBINED CYCLE	12	31 CapacityOnly	1 gas cc	, ,	is cc	2032	2032	100%	100%	0	0	0	0	0	0	0	0	474,4736	0	0	0
EXISTING GENERIC COMBINED CYCLE	12	31 CapacityOnly	1 gas cc	, ,	rs cc	2033	2033	100%	100%	0	0	0	0	0	0	0	0	0 0	470.556	0	0
EXISTING GENERIC COMBINED CYCLE	12	31 CapacityOnly	1 gas cc		IS CC	2034	2034	100%	100%	0	0	0	0	0	0	0	0	0		487.0462	0
EXISTING GENERIC COMBINED CYCLE	13	31 CapacityOnly	1 gas cc	, - 5-	rs cc	2035	2035	100%	100%	0	0	0	0	0	0	0	0	0	0		501.0718
NEW GENERIC DR	12	31 CapacityOnly	1 demand re		emand re	2023	2033	100%	100%	13.395	13.62527	13.85554	11.58527	9.315	9.09	8.865	7.524	6.183	0	0	01.0710
EXISTING GENERIC COMBINED CYCLE	13	31 EnerayCapacity	1 gas cc	,	IS CC	2024	2026	100%	100%	37.56135	38.20312	38.84488	0	0.010	5.05	0.003	7.524	0.103	0	0	0
EXISTING GENERIC COMBINED CYCLE	12	31 EnergyCapacity	1 gas cc	11/10	IS CC	2024	2025	100%	100%	33.27804	33.84662	0.04400	0	0	0	0	0	0	0	0	0
EXISTING GENERIC COMBINED CYCLE	12	31 EnergyCapacity	1 gas cc		IS CC	2024	2024	100%	100%	51.92692	0.04002	0	0	0	0	0	0	0	0	0	0
EXISTING GENERIC COGEN	12	31 EnergyCapacity	1 cogen	, ,	aen	2024	2024	100%	100%	3.268641	0	0	0	0	0	0	0	0	0	0	0
EXISTING GENERIC COGEN	12	31 EnergyCapacity	1 cogen		aen	2024	2025	100%	100%	2.781822	2.861703	0	0	0	0	0	0	0	0	0	0
EXISTING GENERIC COGEN	12	31 EnergyCapacity	1 cogen	,	aen	2024	2026	100%	100%	1.217047	1.251995	1.286943	0	0	0	0	0	0	0	0	0
EXISTING GENERIC BATTERY STORAGE	12	31 CapacityOnly	1 4hr batter		nr batter	2024	2035	100%	100%	20.62811	21.0127	21.39729	19.70742	18.01755	17.69123	17.36491	15.76127	14.15764	12.55401	10.95038	9 346748
NEW GENERIC BATTERY STORAGE	12	31 CapacityOnly	1 4hr batter		r batter	2025	2035	100%	100%	10.02011	5.253175	5.349323	4.926855	4.504387	4.422807	4.341227	3.940319	3.539411	2 120502		2.336687
NEW GENERIC BATTERY STORAGE	12	31 EnergyCapacity	1 4hr batter		nr batter	2023	2035	100%	100%	0.06876	0.070042	0.071324	0.065691		0.058971		0.052538	0.047192	0.041847	0.036501	
NEW_OUNDING_DATIENT_STURAGE	12	31 Energycupacity	1 4III_DULLEI	11/4	n_putter	2024	2000	100%	10076	0.00070	0.070042	0.071324	0.003091	0.000038	0.030371	0.03/003	0.032330	0.047192	U.U41047	0.050501	0.031130

Attachment C - 30 MMT RDT Page 14 of 14

${\tt CSPReportSheet}$

Resource	2024	2026	2030	2035	Units	Туре
Large Hydro	845	525	525	525	GWh	GHG-Free
Imported Hydro	1,150	766	69	120	GWh	GHG-Free
Asset Controlling Supplier	-	-	-	-	GWh	GHG-Free (Partial)
Nuclear	-	-	-	-	GWh	GHG-Free
Biogas	80	80	80	30	GWh	RPS Eligible
Biomass	65	38	4	16	GWh	RPS Eligible
Geothermal	332	454	1,753	1,785	GWh	RPS Eligible
Small Hydro	291	106	37	69	GWh	RPS Eligible
Wind Resources						
Wind Existing California	606	783	438	461	GWh	RPS Eligible
Wind New PG&E	291	290	290	290	GWh	RPS Eligible
Wind New SCE SDG&E	-	263	263	263	GWh	RPS Eligible
Wind Pacific Northwest	-	-	-	-	GWh	RPS Eligible
Wind Wyoming	-	-	-	-	GWh	RPS Eligible
Wind New Mexico	-	-	250	250	GWh	RPS Eligible
Wind Offshore Morro Bay	-	-	-	400	GWh	RPS Eligible
Wind Offshore Humboldt	-	-	-	-	GWh	RPS Eligible
Solar Resources						
Solar Existing California	1,815	1,649	1,451	1,137	GWh	RPS Eligible
Solar New PG&E	-	-	-	-	GWh	RPS Eligible
Solar New SCE SDG&E	-	-	-	-	GWh	RPS Eligible
Solar Distributed	32	32	32	31	GWh	RPS Eligible
Hybrid						
Hybrid or Paired Solar and Battery	328	626	614	596	GWh	RPS Eligible
Storage & DR						
Shed DR	15	15	15	-	MW	GHG-Free
Pumped Storage	-	-	-	-	MW	n/a
Battery Storage	649	857	2,057	2,117	MWh Energy Capacity	n/a
User-Specified Profies						
Storage Resource Custom Profile	-	-	-	-	MW	n/a
RPS Resource Custom Profile	-	-	-	-	GWh	RPS Eligible
GHG-free non-RPS Resource	-	-	-	-	GWh	GHG-Free
Coal						
Coal	-	-	-	-	GWh	n/a



Sc	pply	Inpu	ts

25.6467 p.2027 Supply injury inju	implate using Excel's "Paste Values" option 25 2030 2035 Units RPS or GNG-Free	INFORMATION CHIL* - Cabulated capacity, energy, and capacity factor values for all supports Calculated Capacity (MW) Calculated Capacity (MW) Capacity (
Large Hydro 845 5 5 1 proported Hydro 1,150 7	5 525 525 CWh GHGFave 6 69 120 GWh GHGFave	297 198 18 31	Operation Production Production (State of State of St
Markey			
Biggs	8 4 16 GWh 895 4 1,751 1,785 GWh 895	13 14 16 6 11 6 1 3 41 57 228 230 98 26 12 22	## ## ## ## ## ## ## ## ## ## ## ## ##
Small Hydro 280 3 Wind Resources Wind Baseline California 605 7	3/ W OM W	98 36 12 23	292 105 37 60 24% 34% 34% 34%
Wind allowing Landonia 606 // Wind Mere PGEE 291 291 Wind Mere SCE SDGEE 291	3 433 601 Wh 195 0 290 290 GWh 195 3 263 263 GWh 195	236 291 161 172 135 135 135 135 135 - 96 96 96	606 723 443 462 228 228 228 228 228 228 228 228 228 2
Wind Wyoming			2e% 2e% 2e% 2e% 2e% 51% 51% 51% 51% 51% 51% 51%
Wind New Mexico Wind Offshore M.cmo Bay Wind Offshore Humbold:	250 250 GWh RFS - 400 GWh RFS GWh RFS		
Solar Resources Solar Baseline California Solar Baseline California Solar New PSEE		686 623 548 429	
Solar New SCE SDGBE	- OWh 895 - OWh 895 2 32 31 OWh 895	20 20 20 20	1,213
Nybrid/Paired		114 216 212 205	228 G26 G14 596 22N 22N 32N 32N
Nycro or Paries Sour and Sourcey 328 6 Storage & DR 25 Shed DR 25 Pumped Storage	5 15 - MW GHG-Free - MW ryla	в в в .	0 0 0 - GON
User-Specified Profiles	7 2,057 2,117 MWh Energy Capacity n/a	162 214 514 529	(34) (44) (234) (234)
Storage Resource Custom Profile RFS Resource Custom Profile GHC-free non-RPS Resource Custom Profile Coal	- MW r/a - GWh 195 - GWh GHG-Free	n/a n/a n/a n/a n/a n/a n/a n/a n/a	
Coal	OWE N/a		24% ON ON ON
Calculated Share of IFM CIP - do not edit IFM CIP 323 3	4 237 278 GWh n/a	64 63 64 28	212 204 297 278 55% 55% 51% 54%
Checks 2024 20 No negative supply inputs TRUE TRUE	25 2030 2035 TRUE TRUE		
No negative supply inputs TRUE TRUE TRUE Storage Resource Custom Profile does not produce power on a net basis Storage Resource Custom Profile has values between TRUE TRUE TRUE TRUE TRUE TRUE TRUE TRUE	TRUE TRUE		
1 and 1 Sum of hourly RPS Resource Custom Profile equals Tour Tour	TRUE TRUE		
annual input Sum of hourly CRES-free non-RPS Resource Custom Profile equals annual input TRUE TRUE	TRUE TRUE		
	Users wishing to add multiple custom resources of the same	Conton Hourly Profiles Noe should add tonether the hourly production values outside of this tool and input the final 8750 shape below.	
	Power production or storage dispatch entered in this section is incremental to any or	type should seld together the hously production values outside of this tool and input the final \$700 shape below. The standard resource types entered in the resource table above - entering the same resources in both sections would result contribute.	1 double
U T	Profile should be normalized to MW of nameplate storage capacity in the "Storage to Resource Custom Profile" now above. Values should range between -1 (charging a max) to 1 (discharging at max).	Profile should be in units of MAW in each hour (+MAWh) The sum of power production in each year must match the annual value in the "User-Specified Profiles" section. The sum of power production in each year must match the annual value in the "User-Specified Profiles" section.	25.
70 6 h	10		
Name	2024 2026 2030 20	55 2024 2026 2030 2035 2024 2026 2030	2005
1 1 2 1 1 4 1 1 5			
1 1 5 1 1 7 1 1 8			
1 1 E 9 1 10 10 10 10 10 10 10 10 10 10 10 10 1			
1 1 21 1 1 12 1 1 13			
1 1 16 1 1 1 15 1 1 1 16			
1 1 11 12 12 12 12 12 12 12 12 12 12 12			
1 1 20 1 1 21			
1 1 22 1 1 23 1 1 24			
1 2 1 1 2 2 1 2 3			
1 2 4 1 2 5			
1 2 6 1 2 7 1 2 8			
1 2 9 1 2 10 1 2 11			
1 2 12 1 2 13 1 2 14			
1 2 15 1 2 16			
1 2 1E 1 2 19			
1 2 20 1 2 21 1 2 22			
1 2 23 1 2 26 1 3 1			
1 3 2 1 3 3			
1 3 5 1 3 6			
1 3 5 1 3 8 1 3 9			
1 3 10 1 3 21 1 3 12			
1 3 13 1 3 14 1 3 15			
1 1 16 1 1 17 1 1 18			
1 3 19 1 3 20			
1 3 21 1 3 22 1 1 3 23 1 3 23			
1 3 24 1 4 1 1 6 2			
1 4 3 1 4 4 1 4 5			
1 4 6 1 4 7 1 4 7			
1 4 9 1 4 10			
1 4 11 1 4 12 1 4 13			
1 4 14 14 15 1 4 15 1 4 15 1 1 4 15 1 1 1 1			
1 4 17 1 4 18 1 4 18			
1 4 20 1 4 21			
1 4 22 1 4 23 1 4 24			
1 5 1 1 5 2 1 5 3			
1 5 4 1 5 5 1 5 5			
1 5 7 1 5 8			
1 5 10 1 5 11			
1 5 12 1 5 13 1 5 14			
1 5 15 1 5 16 1 5 17			
1 5 18 1 5 19 1 5 20			
1 5 21 1 5 22 1 5 23			
1 5 23 1 5 24 1 6 1			
1 6 2 1 6 3 1 6 4			
1 6 5 1 6 6 2 6 7			
1 6 8 1 6 9			
1 6 10 1 6 11 1 6 12			
1 6 13 1 6 14 1 1 6 25 1 6 25 1 6 25 1 6 27			
1 6 18			
1 6 19 1 6 20			
1 6 21 1 6 22 1 6 23			
1 6 24 1 7 1 1 7 2			
1 7 2 1 7 4 1 7 4			
1 7 6 1 7 7 7			
1 7 9 10 1 7 10			
1 7 11 1 7 12 1 7 13			
1 7 16 1 1 7 15 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1			

1 7 17 - 1 7 18 -		: :	: :	1 1									=
1 7 19 1 1 7 20 -	1 1		1 1										_
1 7 22													=
1 7 26 - 1 8 1	1 1 1		1 1										=
1 8 2 1 8 3 1 8 4	1 1		1 1										=
1 8 5 1 8 5			1 1										=
1 8 7	1 1		1 1										=
1 E 9 -	1 1		1 1										
1 8 21 1 8 12 1 8 13	1 1		1 1										=
1 8 14			1 1										=
1 8 16 - 1 8 17 -	1 1 1		1 1										\equiv
1 8 18 1 1 8 19	1 1		1 1										=
1 8 20 - 1 8 21	1 1		1 1										=
1 8 22 1 1 8 23 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1			1 1										=
1 9 1			: :										=
1 9 1 1	1 1 1		1 1										=
1 9 5	1 1		1 1										=
1 9 7 1 9 8	1 1		1 1										=
1 9 9 1			1 1										_
1 9 12			1 1										=
1 9 14 - 1 9 15 -			1 1										=
1 9 16 - 1 9 17 -	1 1		1 1										=
1 9 11 1			1 1										=
1 9 21			1 1										=
1 9 23 - 1 9 34 -	1 1 1		1 1										=
1 10 1 1 10 2			: :		\vdash		$+$ \mp	$+ \Box$		$=\mathbb{T}$	_	ÞΤ	三
1 10 3 1 10 4	1 1		: :										=
1 10 5 1 10 6 1 1 10 10 7					\vdash			=		=	=	-	=
1 10 E 10 9													彐
1 10 10 1 10 11			1 1		\vdash	$+$ \top	$+ \equiv$	\perp		H	-	H	\equiv
1 10 12 1 1 10 13 1								\rightarrow					=
1 10 15 1 1 10 15 1					\vdash			=		=	=	-	=
1 10 17 - 1 10 18			1 1										=
1 10 19 - 1 10 20 -	1 1					$+ \Box =$						H	\equiv
1 10 21 1 1 10 22 1			1 1								_		_
10 23 1 1 10 24 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1								\rightarrow					=
1 11 2 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1													#
1 11 4 1 1 11 5			: :										\exists
1 11 6			1										=
1 11 9													=
1 11 11 1	1 1		1 1										=
1 11 13 1 1 11 14	1 1		1 1										
1 11 15 -			1 1										_
1 11 17 -			1 1										=
1 11 20 1 1 11 21 -	1 1		1 1										=
1 11 22 -	1 1		1 1										
1 11 24 1	1 1		1 1										_
1 11 22 1 1 24 1 1 1 1 22 1 1 1 1 1 2 1 1 1 1													=
1 12 5 - 1 12 6 -	1 1		1 1										=
1 12 7 1 12 8	1 1		1 1										_
1 12 10 -													=
1 12 12 1 1 12 13 -	1 1		1 1										=
1 12 14 1 1 12 15 -	1 1		1 1										_
1 12 17 -													=
1 12 19 - 1 12 20 -	1 1 1		1 1										=
1 12 21 - 1 12 22 -			1 1										
1 12 23 - 1 12 24 -	1 1		1 1										_
1 11 2													=
1 13 4 1	1 1 1		1 1										
1 13 6 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1			1 1										_
1 13 8			1 1										=
1 13 11 1 13 12													=
1 13 13 1 1 13 14	1 1 1		1 1										=
1 13 15 - 1 13 16 -	1 1		1 1										_
1 13 17 1 13 18													=
1 13 20 1 1 13 21 -			1 1										=
1 13 22 -			: :										\equiv
1 13 24 1 1 14 1 -													=
1 14 2 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1													#
1 14 5 1 14 6 1 1 14 7 1 1 14 7 1 1 1 1 1 1 1 1 1 1 1			: :										\exists
1 14 7 1 24 8			1 1								_		
1 14 10 1 1 14 10 -													=
1 14 12 1 1 14 13										Εŧ		Шŧ	彐
1 14 14 - 1 14 15 -			: :				+ = -					H	=
1 14 16 1 1 14 17 1								\rightarrow					=
- 24 28 3 3 14 29 -													#
1 14 21 1 14 22													\exists
1 14 23 1 14 24	1 1		1 1										=
1			1					\rightarrow					=
1 15 4 1 15 5													#
1 15 6 - 1 15 7			: :										\exists
1 15 8 1 1 15 9 1 1 1 15 9 1 1 1 1 1 1 1 1 1 1			1 1		\vdash		$+$ \top	$+\Box$		$=$ \mathbb{T}	+=	ÞΤ	ᆿ
1 15 10 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1								\rightarrow					=
1 15 13 1 15 14													=
1 15 15 1 1 15 16 -			: :										
1 15 17 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1											-		=
1 15 19 1 1 15 20 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1								\rightarrow					=
1 15 22 1													#
1 15 24 1 1 16 1			1 1										\equiv
1 16 2 - 1 16 3 -			: :										\equiv
1						+	$+$ \top	$+\Box$	-1	F	+ $=$	H	크
1 16 6 - 1 16 7 - 1 16 8 - 1 1 16 8 - 1 1 16 8 - 1 1 16 8 - 1 1 16 8 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1					\vdash			=		=	=	-	=
1 16 9 -													\exists
1 16 11 1 16 12			: :									H	ᆗ
1 1 16 12 13 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1			1					\rightarrow					=
1 16 15 - 1 16 15 15 1 1 16 15 1 1 1 16 17 1 1 16 17 1 1 1 1 1 1 1 1 1							+	-			_		=
1 16 18 1 16 19 1 16 19 1 1 1 1 1 1 1 1 1 1 1 1													\exists
1 16 20 1 1 16 21 1			1 1		\vdash		$+$ \top	$+\Box$		$=$ \mathbb{T}	+=	ÞΤ	三
16 22 - 1 16 23 - 1 16 14 14 14 14 14 14 14 14 14 14 14 14 14								\rightarrow					=
1 10 20 10 11 17 1 1 1 17 2 1 1 17 2 1 1 17 2 1 1 1 1					\vdash			=		=	=	-	=
1 17 1					-						_		=
1 17 4 -													

1 17 5 1 17 6 1 17 7			:	: : :								
1 17 8												
1 17 9 1 17 10 1 17 11 1 17 11 1 17 12		- 1										
1 17 13 1 17 14												
1 17 15 1 17 16 1 17 17 16												
1 17 18 1 17 19 1 17 20	1 1 1	- :										
1 17 21 1 17 22												
1 17 25 1 17 24 1 18 1												
1 18 2 1 18 3	1 1 1	- :										
1 15 2 1 15 4 1 1 15 5 1 1 15 5 1 1 1 15 7 1 1 1 1 1												
	1 1 1	- :										
1 18 9 1 18 10 1 18 11												
1 28 11 1 28 22 1 1 28 23 1 28 34 1 28 35 1 28 36 1 28 36 1 28 37 1 28 37 1 28 37 1 28 37 1 38 37												
1 18 15 1 18 16	1 1 1	- :										
1 18 19												
1 18 20 1 18 21		- 1										
1 19 22 1 19 23 1 19 24 1 19 2 1 1 19 2 1 1 19 2 2 1 19 3 4	1 1 1	:										
1 19 1 1 19 2 1 19 3												
	1 1 1	- :										
1 19 6 1 19 7 1 19 8												
1 19 9 1 19 10 1 19 10		- 1										
1 19 12 1 19 13	1 1 1	:										
1 19 14 1 19 15 1 19 16												
1 19 17 1 19 18 1 19 19		- 1			$\vdash \vdash$	$\vdash \top$		\Box	Ħ	==	1	Ħ
1 19 29 1 19 20 1 19 21												
1 19 22 1 19 23 1 19 24												
1 20 1 1 20 2	1 1 1	- 1								=	=	
1 20 4 1 20 5												
1 20 6 1 20 7 1 20 =									H	==	1	Ħ
1 20 9 1 20 10		- :										
1 20 11 1 20 12 1 20 13											ᆂ	
1 20 14 1 20 15 1 20 15					$\vdash \vdash$	$\vdash \top$		\Box	Ħ	==	1	Ħ
1 20 17 1 20 18												
1 20 19 1 20 20 1 20 21												H
1 20 22 1 20 23	1 1 1	- :										
1 20 24 1 21 1 1 21 2		- 1										
1 21 3 1 21 4	1 1 1	- :										
1 21 4 1 22 5 1 21 6 1 21 7 1 21 7												
1 21 8 1 21 9 1 21 10												
1 21 11 1 21 12	1 1 1	- :										
1 21 12 1 22 13 1 22 14 1 22 15 1 22 15 1 22 15 1 22 17 1 22 17 1 22 17 1 22 18												
1 21 16 1 21 17		- 1										
1 21 19 1 21 20	1 1 1	:										
1 21 21 1 21 22 1 21 23												
1 21 24 1 22 1 1 22 2		- 1										
1 22 1 1 22 4	1 1 1	:										
1 22 5 1 22 6 1 22 7												
1 22 E 1 22 9		- 1										
1 22 11 1 22 12	1 1 1	:										
1 22 13 1 22 14 1 22 15												
1 22 16 1 22 17 1 22 17		- 1										
1 22 19 1 22 20	1 1 1	:										
1 22 21 1 22 22 1 22 23		- 1										
1 22 24 1 1 23 1 1 1 23 1		- 1			$\vdash \vdash$	$\vdash \top$		\Box	Ħ	==	1	Ħ
1 23 3 1 22 4												
1 23 5 1 23 6 1 23 7												
1 23 E 1 23 9 1 23 10									H	==		肙
1 23 13 1 23 14 1 23 15												
1 23 16 1 23 17 1 23 18									H	==		肙
1 23 19 1 23 20		1										
1 9 10 10 10 10 10 10 10 10 10 10 10 10 10												
1 24 2					$\vdash \vdash \vdash$				H		1	目
1 24 3		- :										
1												
1 24 8 1 24 9 1 28 10												
1 24 11 1 24 12 1 24 12		- 1			$\vdash \vdash$	$\vdash \top$		\Box	Ħ	==	1	Ħ
1 24 14 14 12 25 15												
1 24 15 1 28 17 1 28 18												
1 26 19 1 28 20 1 3 28 20		- 1										
1 24 22 1 24 23												
1 24 24 1 25 1 1 25 7									H	==	1	目
1 25 3 1 25 4		- :										
1 25 5 1 25 6 1 25 7											▙	
1 25 E 1 25 9 1 9 10					$\vdash \vdash$	$\vdash \top$		\Box	Ħ	==	1	Ħ
1 2 11 1 2 11												
1 25 11 1 25 14 1 25 14									H	==	1	目
1 25 15 1 25 16 1 25 17												
1 25 18 1 25 19 1 25 20											▙	
1		- 1			$\vdash \vdash$	$\vdash \top$		\Box	Ħ	==	1	Ħ
1 25 21 1 25 22 1 25 22 1 25 23 1 25 24 1 25 14												
1 26 2 1 26 3 1 26 4												
1 25 5 1 26 5 1 26 7		- 1										
1 26 7 1 26 8 1 26 9 1 26 10												
1 26 10 1 26 11 1 26 17									H	==	1	目
1 26 13 1 26 14		- 1										
1 26 15 1 26 16						\vdash						

1 26 17			 -								$\overline{}$
1 26 19 1 26 20											
1 26 21 1 26 22		- 1		1							
1 26 23 1 26 24		- 1		1							
1 27 1 1 27 2		- 1		- :							
1 27 3 1 27 4		- 1		1							
1 27 6											
1 27 E 1 27 9		1		1							
1 27 10 1 27 11		- 1		1							
1 27 12 1 27 13		- 1		1							
1 27 14		- 1		1							
1 27 17 1 27 18											
1 27 19 1 27 20		- 1		1							
1 27 21 1 27 22		- 1		1							
1 27 23 1 27 26		- 1		- :							
1 28 1 1 28 2		- 1		1							
1 28 4											
1 28 6 1 28 7		1		1							
1 28 B 1 28 9		- 1			:						
1 28 10 1 28 11		- 1		1							
1 28 12 1 28 11		- 1		1							
1 28 15											
1 28 17 1 28 18		1		1							
1 28 19 1 28 20		1		1							
1 28 21 1 28 22		- 1		1							
1 28 23 1 28 24 1 29 1		- 1		1							
1 29 2											
1 29 4 1 29 5				1							
1 29 6 1 29 7	i i i i i										+
1 29 8 1 29 9 1 29 10										\vdash	+
1 29 11 1 29 11 1 29 12											
1 29 11 1 29 14	1 1 1 1			:							
1 29 15 1 29 16				- :						H	
1 29 18 1 70 18									+		+
1 29 20 1 29 21					E						
1 29 22 1 29 23	1 1 1 1										
1 29 24 1 30 1	i i i i i i							$+$ \mp	+	ÞΈ	
1 30 2		- 1		- 1							
1 30 5 1 30 6											
1 30 7 1 30 B		- 1		- :							
1 30 9 1 30 10		- 1		- :							
1 30 11 1 30 12		- 1		- 1							
1 30 14				1							
1 20 16 1 30 17											
1 20 18 1 30 19		1		1							
1 30 20 1 30 21		- 1		- 1							
1 30 23				1							
1 31 1 1 31 2		- 1		- :							
1 31 3 1 31 4		- 1		- :							
1 31 6				1							
1 31 8											
1 31 10 1 31 11		- 1		- :							
1 31 12 1 31 13		- 1		- :							
1 31 14 1 31 15		- 1		1							
1 31 17 1 31 18		- 1		1							
1 31 19 1 31 20		1		1							
1 31 21 1 31 22		- 1		- 1							
1 31 24				1							
2 1 2		- 1		1							
2 1 4 2 1 5		1		1							
2 1 5		- 1		1							
2 1 9											
2 1 11 2 1 12		- 1		- :							
2 1 13 2 1 14		- 1		- :							
2 1 15				1							
2 1 18 2 1 19				:							
2 1 20 2 1 21		- 1		- :							
2 1 22 2 1 23 2 1 23 2 1 34				- :						H	
2 2 2 1 2 2 2 7										\vdash	+
2 2 1 2 2 2 2 2 2 3 2 2 4	1 1 1 1										
2 2 5	1 1 1								+	$\vdash \equiv$	
2 2 7 2 2 8 2 7 n						\rightarrow			+	+	+
2 2 10 2 2 11				:							
2 2 2 8 2 2 2 30 2 2 2 30 2 2 2 2 30 2 2 2 21 2 2 2 21 2 2 2 21 2 2 2 21	1 1 1 1			:							
2 2 14 2 2 2 15 2 2 2 15				:				\vdash		H	+
2 2 16 2 2 17 2 2 18						\rightarrow			+		+
2 2 19 2 2 20	: : : :									E	
2 2 21 2 2 2 22 2 2 22	1 1 1							$\vdash \vdash$	+	$\vdash \blacksquare$	
2 2 33 2 3 13 2 2 3 14 2 3 2 3 18 2 3 3 18 3 3 3 18 3 4 3 18 4 5 18 5 5 18 6 7 18 7 18 8 18						\rightarrow			+	+	+
2 3 2					: -				+		+
2 3 4 4 2 2 3 5 5 5 6 6 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7				:							
2 3 6 2 3 7	: : : : :			1					+	$+$ \mp	\blacksquare
2 3 8 2 2 9 2 1 1 10						\rightarrow			+	+	+
2 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1					E						
2 3 11 2 2 3 12 2 3 12 2 3 14 2 2 3 14 2 2 3 14 2 2 3 15 2 3 15	1 1 1									E	
2 3 15 2 3 36				:							+
2 3 18 2 3 18 2 3 19											+
2 2 3 20 2 3 20 2 3 20 2 3 20 2 3 20 2 3 21 2 3 22 2 3 22 2 3 22				1							
2 3 22 2 3 23	1 1 1								+	$\vdash \equiv$	+ $=$
2 4 2 2 4 3 2 4 4 4						\rightarrow			+	+	+
2 4 5 2 4 6				:							
2 4 7 2 4 E	1 1 1 1			:							
2 4 9 2 4 10 2 4 11											
2 4 11 2 4 12 2 6 13						\rightarrow			+		+
2 4 14 2 4 15					: E						
2 4 16 2 4 17				1							
2 4 18 2 4 19	i i i i i			1				L T	+	$+ \mp$	
2 4 20 2 4 21 2 2 2 ***						\rightarrow			+	+	+
2 4 23 2 4 24					E						
2 5 1 2 5 2											
2 5 1						- I - I -	 	-	+	$+$ \pm	-

2 5 5 2 5 6	: :	1 1		: :	- :	1							
2 5 7 2 5 8			- 1			- :							
2 5 10 2 5 11													
2 5 12 2 5 13			1			:							
2 5 14 2 5 15			- 1			- :	- 1						
2 5 17 2 5 18			1			:	- :						
2 5 19 2 5 20			- 1			- :	- 1						
2 5 22 2 5 23			1			:							
2 5 24 2 6 1			- 1			- :							
2 6 1 2 6 4													
2 6 5 2 6 6			- 1			:	- : =						
2 6 7 2 6 E						-							
2 6 10 2 6 11			- 1			:	- 1						
2 6 12 2 6 14													
2 6 15 2 6 16			- 1			:	- 1						
2 6 17 2 6 18 2 6 19													
2 6 20 2 6 21			1			:							
2 6 22 2 6 23 2 6 24													
2 7 1 2 7 2			1			:							
2 7 3 2 7 4 2 7 5													
2 7 6			- :			:	: =						
2 7 B 2 7 9													
2 7 11 2 7 12			1			:							
2 7 13 2 7 14 2 7 15													
2 7 16 2 7 17						1							
2 7 18 2 7 29 7 9													+
2 7 21 2 7 22							1					H	
2 7 23 2 7 26 2 8 1													+
2 5 2 2 5 3			:			:	1						
2 8 4 2 8 5 2 8 7											$++$ \top	ÞΕ	+
2 8 7 2 8 8						:							
2 B 9 2 B 30 2 E 111											$++$ \top	ÞΕ	+
2 8 12 2 8 12 2 8 13						:							
2 B 14 2 B 35 2 B 15											$++$ \top	ÞΕ	+
2 E 18 2 E 18						:	: =						
2 8 19 2 8 20 2 8 21													
2 E 22 2 E 23						:	: =						
2 B 24 2 9 1 2 9 2						-							
2 9 3 2 9 4			- 1			:	- : =						
2 9 6 2 9 7						:							
2 9 E 2 9 9													
2 9 11 2 9 12			- 1			:	- : =						
2 9 14 2 9 15						:	: =						
2 9 16 2 9 17 2 9 18						-							
2 9 19 2 9 20			- :			1	- : -						
2 9 22 2 9 22 2 9 23													
2 9 24 2 10 1													
2 10 3 2 10 4			1			:							
2 10 6 2 10 6													
2 10 E 2 10 9						1							
2 10 11 2 10 22						:	: =						
2 10 13 2 10 14 2 10 15													
2 10 16 2 10 17 2 10 17						1							
2 10 19 2 10 20						:							
2 10 21 2 10 22 2 10 23													
2 10 26 2 11 1			1			:							
2 11 2 2 11 3 2 11 4													
2 11 5 2 11 6			- 1			- :							
2 11 8 2 11 9													
2 11 10 2 11 11 2 11 11											+ T =	H	$+$ \blacksquare
2 11 13 2 11 14													
2 11 22 11 22 11 12 23 11 12 24 11 12 12 12 12 12 12 12 12 12 12 12 12											+ T =	H	$+$ \blacksquare
2 11 18 2 11 18 2 11 19						:							
2 11 20 2 11 21 2 11 22											+ + + -	Ħ	+
2 11 23 2 11 24 2 11 24 2 12 1												F	
2 12 2													
2 12 4 2 12 5 7 17 5											$++$ \top	ÞΕ	+
2 12 7 2 12 E			- :			:							
2 32 4 4 3 4 3 4 5 4 5 4 5 4 5 4 5 4 5 4 5 4												Eŧ	$\pm \pm$
2 12 12 2 12 13											+ T =	H	$+$ \blacksquare
2 12 15 2 12 16													
												H	+
2 11 15 2 11 2 15 2 12 20 2 12 20 2 12 21 2 12 21 2 12 21 2 12 21 2 12 21 2 11 24 2 11 14						:							
2 12 23 2 12 24 2 12 26													
2 13 1 2 13 2 3 13 2											+ T =	H	$+$ \blacksquare
2 11 2 2 11 3 2 11 3 2 11 5 2 11 6 2 11 6 2 11 7 2 11 7													
2 13 6 2 13 7 2 11 =											$++$ \top	ÞΕ	+
2 13 9 2 13 10 2 13 10											+		
2 13 15 15 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1												Eŧ	$\pm \pm$
2 13 14 2 13 15 2 13 15													\blacksquare
2 13 17 2 13 18							1						
7 11 17 17 17 18 17 17 18 17 18 17 18 18 18 18 18 18 18 18 18 18 18 18 18												<u>L</u>	
2 13 22									$+ \equiv$	$=\mathbb{F}$		HT	$+ \mp$
2 13 24 2 2 14 1 2 2 14 2 2 14 2 2 14 2 2 14 2 2 2 14 2 2 2 14 3 2 2 14 4 4 1 2 2 1 2 1 2 1 2 1 2 1 2 1							1						
2 14 3 2 14 4 2 2 4 5												H	+
2 14 6 2 14 7						:							
2 14 E 2 14 9 2 14 10 10 10 11 11 11 11 11 11 11 11 11 11												Ħ	
2 14 11 2 14 12 2 14 17												H	+
2 14 18 24 2 14 25 2 14 15 2 14 16 2						1						Ħ	
z 14 16							 -	 					

2 14 17	1 1	:	: :	- 1	: :									
2 14 19	1 1	- :		- 1										
2 14 22													_	
2 14 24 : : : : : : : : : : : : : : : : : :	1 1			- 1		-								
2 15 2		-		- 1										
2 15 4														
2 15 7 : : : 2 15 8	1 1	- :												
2 15 9 · · · · · · · · · · · · · · · · · ·	1 1			- 1										
2 15 11	1 1			- 1										
2 15 14													_	
2 15 16 · · · · · · · · · · · · · · · · · ·	1 1			- 1										
2 15 18 · · · · · · · · · · · · · · · · · ·	1 1			- 1										
2 15 20		-		- 1										
2 15 21														
2 16 1													_	
2 16 1 · · · · · · · · · · · · · · · · ·	1 1			- 1										=
2 16 5 · · · · · · · · · · · · · · · · · ·		-		- 1										
2 156 7 2 156 8 2 156 9 2 156 100 2 156 110				- 1										
2 16 10														=
2 16 12														
2 16 14 · · · · · · · · · · · · · · · · · ·	1 1	:		- 1										
2 16 16 · · · · · · · · · · · · · · · · ·		-		- 1										
2 15 18														
2 16 21 2 16 22														
2 16 23 · · · · · · · · · · · · · · · · · ·	1 1			- 1										
2 17 1 2 17 2	1 1					E	\vdash			+	LΞ		#=	ŧΞ
2 17 3 2 17 4	1 1											_ [
2 17 5						<u> </u>					1	_	_ _	+
2 17 E												_		
2 17 10	1 1					E				$+$ \top	ŧΞ	\equiv	#=	ŧΞ
2 17 12												=		+
2 17 15						<u> </u>					1	_	_ _	+
2 17 17												_		
2 17 19	1 1			- 1		H					H			+ =
2 17 21												_		
2 17 24 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2												=	_	\vdash
2 18 2 2 2 2 18 3						E					Ŀ	_+		\pm
2 18 4 · · · · · · · · · · · · · · · · · ·	1 1			1								Ħ		
2 18 6 · · · · · · · · · · · · · · · · · ·														
2 18 9													_	
2 18 11 : : : 2 2 18 12 : : : : : : : : : : : : : : : : : :	1 1	- :		- 1										
7 18 13 14 2 2 18 14 15 2 18 15 2 18 15 2 18 15 2 18 17 2 18 17 2 18 17 2 18 17 2 18 17 2 18 17 2 18 17 2 18 17 2 18 17 2 18 17 2 18 18 17 2 18 18 17 2 18 18 17 2 18 18 17 2 18 18 18 18 18 18 18 18 18 18 18 18 18	1 1			- 1										
2 18 15 · · · · · · · · · · · · · · · · · ·		-		- 1										
2 18 18													_	
2 18 20	1 1	- :		- 1		-								
2 18 22 · · · · · · · · · · · · · · · · · ·	1 1			- 1										
2 18 24 : : : : : : : : : : : : : : : : : :	1 1			- 1										
2 19 3						<u> </u>								
2 19 5 · · · · · · · · · · · · · · · · · ·	1 1			- 1										
2 19 7 2 19 8	1 1			- 1										
1													_	
2 19 12 · · · · · · · · · · · · · · · · · ·	1 1			- 1										
2 19 14	1 1	- :		- 1										
2 19 17													_	
2 19 19	1 1			- 1		-								
2 19 21 · · · · · · · · · · · · · · · · · ·		-		- 1										
2 19 23	1 1			- 1										
2 20 2														
2 20 4 · · · · · · · · · · · · · · · · · ·	1 1			- 1										
2 20 6 · · · · · · · · · · · · · · · · · ·		-		- 1										
2 20 9														
2 20 11 2 20 12														
2 20 11 · · · · · · · · · · · · · · · · · ·	1 1			- 1										
2 20 15 · · · · · · · · · · · · · · · · · ·	1 1			- 1										
2 20 18 2 20 16												=	_	\vdash
2 20 20 2 20 21												_		
2 20 22 : :	1 1													
2 20 24												#	_	+
2 21 2						E					Ŀ	_+		\pm
2 21 5	1 1			1								Ħ		
2 21 7 2 21 8												_		
2 21 10 2 21 11												=	_	\vdash
2 21 12						E					Ŀ			
2 21 14 · · · · · · · · · · · · · · · · · ·	1 1					H				+ $=$	H			+ =
2 21 16												_	_	+
2 21 29						E					Ŀ	_+		\pm
2 21 21 21												Ħ		
2 21 23 : : : : : : : : : : : : : : : : : :												_		
1												=		
2 22 4 2 22 5						E					Ŀ			
2 22 6 · · · · · · · · · · · · · · · · ·	1 1			1								Ħ		
2 22 8 · · · · · · · · · · · · · · · · ·		1				E	\vdash				ŧΞ	$=$ \mathbb{F}		Ħ
2 22 11												_	_	+
2 22 11						E					Ŀ			
2 22 15 · · · · · · · · · · · · · · · · · ·	1 1													
2 22 17														
2 22 20												_	_	+
2 22 22 22 22 23 22 23 2 23 2 24 25 25 25 25 25 25 25 25 25 25 25 25 25						E					Ŀ	_+		\pm
2 22 34 22 23 1												_		
2 23 2 · · · · · · · · · · · · · · · · ·	1 1													
1		1				E	-		\vdash	\vdash	ŧΞ	$=$ \mp	-1	Ħ
2 23 6						<u> </u>					1	_	_ _	+
2 23 9 · · · · · · · · · · · · · · · · · ·												Ħ		
2 23 11 · · · · · · · · · · · · · · · · · ·	1 1			- 1		E	\vdash				ŧΞ	$=$ \mathbb{F}		Ħ
2 23 12 2 23 13 2 23 13 2 22 14 2 2 23 15												_		\pm
2 23 16						<u> </u>					1	_	_ _	+
2 23 17						E					Ŀ	_+		\pm
2 23 20	1 1			1								Ħ		
2 23 22 · · · · · · · · · · · · · · · ·												#	_	+
2 24 1 1 2 2 24 1 2 2 2 24 2 2 2 2 2 2 2												=		
2 24 3				-							\vdash			=
2 24 4														

2 24 5 2 24 6											
2 24 7 2 24 B											
2 24 9 2 24 10 2 24 11		1		1							
2 24 12		1		1							
2 24 13 2 24 14		- 1		1							
2 24 15 2 24 16 2 24 16 2 24 17		- 1		1							
2 24 18											
2 24 20 2 24 21		- 1		:							
2 24 22 2 24 23		1		1							
2 24 24 2 25 1				1							
2 25 1		- 1		1							
2 25 5											
2 25 7 2 25 8		1		1							
2 25 9 2 25 10		1		1	:						
2 25 11 2 25 12		- 1		1							
2 25 13 2 25 14 2 25 15		- 1									
2 25 16											
2 25 18 2 25 19		1		:							
2 25 20 2 25 21				1							
2 25 22 2 25 23		- 1		1							
2 25 26 2 26 1		- 1		1							
2 26 3											
2 26 5 2 26 6		1		:							
2 26 7 2 26 B				1							
2 26 9 2 26 10		- 1		1							
2 26 11 2 25 12 2 26 12		- 1		1							
2 26 14											
2 25 16 2 25 17										E	
2 26 18 2 26 19	1 1 1						$\vdash \top$	\pm	++	L E	+
2 26 20 2 26 21 2 26 22		- :				+			\vdash		\pm
2 25 25 2 25 23 2 25 24				-	: E - +						
2 27 1 2 27 2	1 1 1 1	- 1		- :							
2 27 3 2 27 4				- :			H				+
2 27 6 2 77 7					-	+			\vdash		\pm
2 27 E											
2 27 10 2 27 11	1 1 1 1									E	
2 27 12 2 27 13	i i i i i i	1				$+$ \mp	$+ \mp$		\vdash	L T	
2 27 15											
2 27 17 2 27 18		1		:							
2 27 19 2 27 20		- :		1	:						
2 27 21 2 27 22		- 1		1							
2 27 23 2 27 24		- 1		1							
2 28 2 2 28 3											
2 28 4 2 28 5		1		:	:						
2 28 6 2 28 7		1		1							
2 28 8 2 28 9		- 1		1							
2 28 11 2 28 12											
2 28 13 2 28 14		- :		1	:						
2 28 15 2 28 16		- 1		1							
2 28 18 2 28 19											
2 28 20 2 28 21											
2 28 22 2 28 23		- :		1	:						
2 28 26 3 1 1		- 1		1							
3 1 2 3 1 3		- 1		1							
1 1 5 1 1 6		1		:							
3 1 7 3 1 8		1		1							
3 1 9 3 1 10		- 1		1							
1 1 11 3 1 12		- 1		1							
1 1 14 1 1 15											
3 1 16 3 1 17		- :		1							
3 1 18 3 1 19		- 1		1							
3 1 20 3 1 21		- 1		1							
3 1 23 1 1 24											
3 2 1 3 2 2		- :		1							
3 2 3 3 2 4		- 1		1							
* 2 5 3 2 6					-	+			\vdash		\pm
3 2 E		- 1		:							
3 2 30 3 2 11	1 1 1 1										
1 2 2 11 1 2 2 13 2 3 2 13 3 2 2 13 3 2 2 14 3 2 2 15 4 2 2 15 4 2 2 16 4 2 2 16 4 2 2 16 5 2 2 16 6 2 2 16 7 2 2 16 7 3 2 2 16 7 4 16 7 5 16 7 7 7 7 8 16 7 7 7 8 16 7 7 7 8 16 7 7 7 8 16 7 8 16											
2 14 3 2 15 3 2 16					: ===	+		=	++-		+
3 2 17 3 2 18	1 1 1							\equiv		Œ	
3 2 39 3 2 20				- :					+++		+
8 2 21 3 2 22 3 7 72					-	+			\vdash		\pm
3 2 34 3 3 1											
1 1 2	1 1 1 1										+ $=$ $ -$
3 3 3 3 3 4 3 5 5 3 3 5 6					:	+		=	++-		+
3 3 5 3 7 3 2 8											
3 3 9 3 3 20	1 1 1 1										+ $=$ $ -$
3 3 9 9 3 9 3 10 10 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1				- :					+		
2 2 13 2 2 14 3 1 15					: -				-		+
3 3 3 15 3 2 18 3 3 2 18 3 3 3 17 3 3 3 18 3 3 3 18 3 3 3 20		:		:	: 🗀					H	
3 3 18 3 3 19	: : : : :	-		- :			$+$ \mp	_	\vdash	$+$ \top	+
3 3 20 3 3 21 3 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1					-	+		_	+		+
3 3 23 3 3 24											
3 3 23 3 3 24 3 4 1 3 4 4 2 3 4 4 3 3 4 4 2 4 3 4 4 4	1 1 1							\equiv		Œ	
3 4 3 3 4 4				- :					+++		+
3 4 5 3 4 7					-				-		\pm
3 4 6 3 4 7 3 4 8 3 4 8 3 4 9 3 4 29 3 4 10 3 4 111											
3 4 10 3 4 11	1 1 1										+ $=$ $ -$
3 4 12 3 4 13 3 2 · · ·											
3 4 14 34 3 4 15 3 4 15 3 4 15 3 4 16 16 16 16 16 16 16 16 16 16 16 16 16					-	+		_	+		+
3 4 17 3 4 18		- 1		:							
3 4 19 3 4 20	1 1 1 1	:		:							
1 1 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4											
3 4 23 3 4 24 3 5 5 1					:	+		=	++-		+
3 5 2 3 5 1					: 🗀 🛨						
3 5 4 3 5 5		- 1		:							
3 5 6 3 5 7	i i i i i	1				$+$ \mp	$+ \mp$		\vdash	ΗŦ	$+ \blacksquare$
3 5 8 3 5 9					-	+		_	+		+
3 5 11 3 5 12											
3 5 13 3 5 14											
3 5 15 3 5 16					$\vdash \vdash$	+ $-$	$+ \mp$	_	++	$+ \mp$	+

3 5 17 3 5 18	1 1	1 1		- 1	- :							
3 5 19 3 5 20 3 5 21			- 1		1							
3 5 22 3 5 23					-							
3 5 24 3 6 1			- :		1							
3 6 2			- :		1							
1 6 5 1 6 6			:		:							
3 6 7 3 6 B			- :		1							
3 6 10 3 6 11			:		:							
3 6 12 3 6 13			- 1		1							
3 6 15 3 6 16												
3 6 17 3 6 18			- :		:							
3 6 19 3 6 20 3 6 21					-							
3 6 22 3 6 23			- :		:							
3 5 24 3 7 1 3 7 2					-							
3 7 3 3 7 4			- :		:							
3 7 6 3 7 7					-							
3 7 E 3 7 9			:		:							
3 7 10 3 7 11 3 7 12												
3 7 13 2 7 14			- :		1							
3 7 15 3 7 16												
3 7 18 3 7 19					:							
3 7 20 3 7 21 3 7 22												
3 7 23 3 7 24			- :		1							
3 8 1 3 8 2												
3 5 4 3 5 5			:			1						
3 8 6 3 8 7					-							+
3 5 9 3 5 9						1					H	
3 8 11 3 8 12 3 8 12					1							+
3 5 14 3 5 15					1							
3 E 36 3 E 37 3 E **							H	$+ \equiv$	$=$ \square		ÞΕ	+
3 E 19 3 E 20					1							
3 B 21 3 B 22 3 E 22							H	$+ \equiv$	$=$ \square		ÞΕ	+
3 5 24 3 9 1					1							
3 9 2 3 9 3 3 0 A							H	$+ \equiv$	$=$ \square		ÞΕ	+
3 9 5					:							
3 9 7 3 9 8												
3 9 10 3 9 11					:							
3 9 12 3 9 13 3 9 14					-							
3 9 15 1 9 16			- :		:							
3 9 1E 3 9 1P					:							
3 9 20 3 9 21 3 9 22												
3 9 23 3 9 24					:							
3 10 2 3 10 3					:							
3 10 4 3 10 5 3 10 6					-							
3 10 7 3 10 8			-		1							
3 10 10 3 10 11												
3 10 12 3 10 13												
1 10 15 3 10 16			:		:							
3 10 18 3 10 18 3 10 29												
3 10 20 3 10 21 3 10 21					1							
3 10 23 3 10 24			1		:	: =						
3 11 1 3 11 2 3 11 3												
3 11 4 3 11 5					1							
3 11 7 3 11 E					:							
3 11 9 3 11 10												
3 11 12 3 11 13			- :		1							
3 11 14 3 11 15 3 11 15					1							
3 11 17 3 11 18			- 1		1							
3 11 20 3 11 21												
3 11 22 3 11 23 3 11 34							H	+ =	$ \mp$	$+$ \mp \pm	H	$+$ \blacksquare
3 12 1 3 12 2												
1 12 1 1 12 4							H	+ =	$ \mp$	$+$ \mp \pm	H	$+$ \blacksquare
3 12 7					1							
3 12 E											Ħ	+
3 112 15 3 12 11 12 11 3 12 12 11 3 12 12 11 3 12 12 13 3 12 13 14			- :								F	
3 12 16 3 12 17 3 17 **											Ħ	+
3 12 19 3 12 20					1	1				+		
2 U M 1 U U M 1 U U M 2 U U M 2 U U M 3 U U M 3 U U M 4 U M 5 U M 5 U M 5 U M 6 U M 6 U M 6 U M 7 U											Ħ	+
3 12 26 3 13 1			- :				H	+ =	$ \mp$	$+$ \mp \pm	H	$+$ \blacksquare
3 13 3 3 13 4												
1 13 5 2 13 6 3 13 7					-							
3 13 E			- :		:							
3 13 11 3 13 12												
3 13 13 13 3 13 3 14 3 13 14 15 15 15 15 15 15 15 15 15 15 15 15 15					-				$-\mathbf{F}$		HT	$+ \mp$
1 10 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1											H	
3 13 18 3 13 19 3 13 20											H	+
3 13 21 3 13 22			1		- :							
3 13 22 3 13 22 3 13 22 3 13 24 3 13 24 3 24 1 3 24 1 3 24 3 3 24 3 3 24 3					-						<u>L</u>	
3 24 2 3 14 3 3 14 4												\blacksquare
3 14 5 3 14 6										+		
3 14 7 3 14 8 3 14 0											<u>L</u>	
2 14 5 1 14 5 1 14 15 1 15 15 1 15 15 1 15 15 15 1 15 15 15 1 15 15 15 1 15 15 15 1 15 15 1 15 15 15 1 15 15 15 1 15									$-\mathbf{F}$		HT	$+ \mp$
3 14 13 3 14 14 14										+		
3 14 15 3 14 16 3 14 17			- :								<u>L</u>	
3 14 18 3 14 19 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1												
# 14 20 3 14 21 3 14 22											Ħ	
3 14 23 3 14 24 3 15 1			- :								H	+
3 15 2 3 15 3 3 15 4					1							
a 15 4								 				

3 15 5 3 15 6	1 1			- :	- :								
3 15 7 3 15 8 3 15 9		1			1	- : =							
1 15 9 1 15 10 3 15 11					-								
3 15 12 3 15 13					1								
3 15 14 3 15 15					1	- 1							
1 15 17 3 15 18		: :			:								
3 15 19 3 15 20					1	- 1							
3 15 22 3 15 23		: :			:								
3 15 24 3 16 1 3 16 2					:	- : ==							
3 16 2 3 16 3 3 16 4					-								
3 16 5 3 16 6					1	1							
3 16 7 3 16 8					1								
3 16 9 3 16 10 3 16 11					1								
3 16 12 3 16 13					1	- 1							
1 16 15 1 16 16		: :			:								
3 16 17 3 16 18					1	- 1							
3 16 20 3 16 20													
3 16 22 3 16 23					:	1							
3 16 24 3 17 1 3 17 2													
3 17 3 2 17 4					1								
3 17 5 3 17 6													
3 17 E 3 17 F 9		: :			:								
3 17 10 3 17 11		1			1	- : -							
3 17 13 3 17 14													
3 17 15 3 17 16					:	- : ==							
3 17 17 3 17 18 3 17 29												EF	
3 17 20 3 17 21					1								\blacksquare
3 17 22 3 17 23 3 17 24									\pm			E÷	
3 18 1 3 18 2					1								
3 18 4 3 18 5					-				\pm				
3 18 6 3 18 7					1								
3 18 9 3 18 20					-				\pm				
3 18 11 3 18 12					:								+
3 18 13 3 18 14 3 18 25								\rightarrow	+				+
3 18 16 3 18 27					1								$\pm \pm$
3 18 18 30 3 18 30 3 18 30												H	+
3 18 21 3 18 22					:								
3 18 25 3 18 24													
3 19 2 3 19 3					:	:							
3 19 4 3 19 5		1			1								
3 19 6 3 19 7 3 19 8					:	:							
3 19 9 3 19 10 3 19 11													
3 19 12 3 19 12 3 19 13													
1 19 14 1 19 15													
3 19 17 3 19 18		: :			:								
3 19 20 3 19 20 3 19 21													
1 19 22 1 19 23					1								
3 20 1 3 20 2													
3 20 3 3 20 4 3 20 5													
3 20 6 3 20 7					:	1							
3 20 9 3 20 20													
3 20 11 3 20 12													
3 20 14 3 20 15					:	- : ==							
3 20 17 3 20 17 3 20 18													
3 20 19 3 20 20					:	- : ==							
3 20 22 3 20 23													
3 20 24 3 21 1					- :	- 1							
3 21 3 3 21 4					1								
3 21 5 3 21 6					1	- 1							
3 21 8 3 21 9					:	: =							
3 21 30 3 22 31 3 21 31							H	\rightarrow	$+$ \exists	$\dashv =$		H	+
3 21 13 3 21 14					1								
3 21 15 3 21 16 3 21 17													+
3 21 18 3 21 19					1								
1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1								\rightarrow	+				+
3 21 23 23 24 24 25 25 2 2 2 2 2								\dashv					\blacksquare
3 22 3													
3 22 4 3 22 5							H	$+$ \mp	$+ \exists$		++	F	+
1 2 4 4 1 2 2 4 1 2 2 1 2 2 1 2 2 1 2 2 1 2 2 1 2 2 1 2 2 1 2									\blacksquare				
3 22 9 3 22 10									+ =			H	$+ \mp$
3 22 11 3 22 12 3 22 13													
3 22 14 3 22 15 1 22 15									+ =			H	$+ \mp$
								$=\pm$					+
3 22 19 3 22 20 3 22 20					-			\rightarrow	+ =			H	$+$ \blacksquare
1 22 15 1 22 15 1 22 25 1 22 21 1 22 21 1 22 22 2 24 2 25 24													
3 22 24 3 3 23 1 3 23 2 3 1								\rightarrow	$+ \equiv$			H	$+$ \blacksquare
1 25 2 2 3 3 4 4 5 5 5 5 6 5 6 6 6 6 6 6 6 6 6 6 6 6													
3 23 5 3 23 6 3 23 7							H	\rightarrow	$+$ \exists	$\dashv =$		H	+
3 23 10 3 23 11 3 23									+ =			H	$+ \mp$
3 22 35 3 22 11 3 22 11 3 22 12 3 22 12 3 22 13 3 22 13 3 22 13 3 22 13 3 22 14									\pm			E÷	
3 23 15 3 23 16 3 23 16									\rightarrow				\pm
1 23 25 25 25 25 25 25 25 25 25 25 25 25 25													
3 23 20 3 23 21 3 23 22							H	$+$ \mp	$+ \exists$	=	++	F	+
3 23 22 3 23 23 3 22 24									\blacksquare				
3 23 24 1 3 24 2 3 24 2 3 24 2 3 24 3 3 24 4					1			\rightarrow	+ =			H	$+$ \blacksquare
3 24 3 3 24 4 3 24 5					-								
3 24 6 3 24 7 3 34 =					1			\rightarrow	$+ \equiv$			H	$+ \blacksquare$
3 24 9 3 24 10													
3 24 11 3 26 12 3 26 12							H	\rightarrow	$+$ \exists	$\dashv =$		H	+
26 13 3 24 14 3 26 25												EF	
3 24 15 3 24 16						 	\perp					$\perp \perp$	

3 24 17 3 24 18 3 24 19	1 1 1	1 1	1 1	: :	1 1						
3 24 20 3 24 21											
3 24 20 3 24 31 3 24 21 3 24 22 3 24 23 3 24 23		1 1	1 1	1 1							
3 25 1											
1 25 1 1 25 4											
1 2 6 1 2 7		: :	1 1	1 1	: :						
1 2 1 1 2 9		1 1	- : :	1 1							
1 2 11 1 2 12		: :	1 1	: :	: :						
3 25 13 3 25 34 1 25 15		1 1	1 1	1 1	1 1						
1 25 16 1 25 17											
3 25 18 3 25 29 3 25 20		1 1	1 1	1 1	1 1						
3 25 21 3 25 22											
3 25 23 3 25 34		1 1	1 1	1 1	1 1						
3 22 26 3 3 26 3 3 26 3 3 26 3 3 26 2 3 26 2 3 26 2 3 26 4 3 26 4 3 26 5											
3 26 4 3 26 5		1 1	1 1	1 1	1 1						
3 26 7 3 26 8											
3 26 9 3 26 10		1 1	1 1	1 1	1 1						
3 26 12 3 26 12 3 26 13 3 26 13 3 26 14 3 26 14 3 26 14 3 26 14											
3 26 14 3 26 15		1 1	: :	1 1							
3 26 16 3 26 17 3 26 18											
3 26 19 3 26 20		1 1	1 1	1 1							
3 26 21 3 26 22 3 26 22											
3 26 24 3 27 1		1 1	: :	1 1	: :						
3 27 2 3 27 3 1 27 4						+					$\downarrow = \downarrow$
3 27 5 3 27 6											\blacksquare
3 27 7 3 27 8 3 27 0								$-\Box$			+
3 27 10 3 27 11											
3 27 12 3 27 13 3 27 14								$-\Box$			+
3 27 35 3 27 16				1 1	1 1						
3 27 17 3 27 18 3 27 16											$\pm \pm 1$
3 27 20 3 27 21				1 1	1 1						
3 27 22 3 27 23 3 27 24								$-\Box$			+
3 28 1 3 28 2				1 1	1 1						
3 28 3 3 28 4 3 28 4								$-\Box$			+
3 28 6 3 28 7				1 1	1 1						
3 28 8 3 28 9 3 28 10								$-\Box$			+
3 28 11 3 28 12				1 1	1 1	+					Ħ
3 28 13 3 28 14 3 28 15											
3 28 16 3 28 27		1 1	: :	1 1	: :						
3 28 17 3 28 18 3 28 29 3 28 20											
3 28 21 3 28 22		1 1	1 1	1 1	1 1						
3 28 24 3 29 1											
1 29 2 1 29 3 3 29 4											
3 29 5 3 29 6		1 1	1 1	1 1	1 1						
3 29 E											
3 29 10 3 29 11		1 1	1 1	1 1	1 1						
1 29 11 1 29 11 2 29 14											
1 29 15 1 29 16 3 29 17											
3 29 18 3 29 19		1 1	: :	1 1	1 1						
3 29 21 3 29 22											
3 29 23 3 29 24		1 1	1 1	1 1							
1 20 2 3 30 1		: :	1 1	: :	: :						
3 30 4 3 30 5											
3 20 7 3 20 E		1 1	: :	1 1	: :						
3 30 9 3 30 10											
3 30 12 3 30 13		1 1	1 1	1 1	1 1						
3 30 14 3 30 15 3 50 16											
3 30 17 3 30 18 3 30 19		1									Ħ
											Ħ
3 30 20 20 20 30 31 30 31 31 3 3 3 3 3 3 3 3 3 3 3 3		1									Ħ
3 31 1 3 31 2											Ħ
3 31 3 3 31 4						+ =		=			ฮ
3 31 5 3 31 6 3 31 7											
3 31 6 3 31 7 3 31 8 3 3 31 8 3 3 31 13 3 3 31 12 3 3 31 12 3 3 31 12 3 3 31 12 3 3 31 12						+ =		=			ฮ
- 34 20 3 31 11 3 31 22											\blacksquare
3 31 23 3 31 34 3 31 35						+	\Box	$=$ \mid \equiv \mid	$\dashv \equiv$		Ħ
3 31 16 3 31 27											
3 11 15 3 21 11 15 3 2 21 11 27 3 2 21 12 12 3 2 21 12 12 3 21 12 12						\pm					\blacksquare
3 31 21 3 31 22											
3 31 23 3 31 24 4 1 1											$\downarrow = \mid$
4 1 2 4 1 3 4 1 4		: :		: :							
4 1 4 4 1 5 4 1 6											$\downarrow = \mid$
4 1 7 4 1 8		1 1		: :	1 1						
4 1 9 4 1 10 4 1 11											$\downarrow = \mid$
4 1 12 4 1 13 4 1 14					1 1						\blacksquare
4 1 24 4 1 25 4 1 16						\pm					\blacksquare
1								\blacksquare			
* 1 19 4 1 20 4 1 21											
4 1 22 4 1 23 4 1 28						$+ \mp$			=	+ T	Ħ
4 2 1 4 2 2 2 4 2 2 2		1 1		: :							
4 2 5											oxdot
4 2 6						+ =	+ $=$ $=$ $=$	=			ฮ
4 2 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1											\blacksquare
4 2 11 4 2 12 4 3 2 12						+	\Box	$=$ \mid \equiv \mid	$\dashv \equiv$		Ħ
											\blacksquare
4 2 16 4 2 27 4 2 27								$-\Box$			+
4 2 19 4 2 20								\blacksquare			
4 2 21 4 2 22 4 2 22 2 23											\blacksquare
4 2 24 4 3 1 4 1 7						+	\Box	$=$ \mid \equiv \mid	$\dashv \equiv$		Ħ
4 3 3 4 3 4						+					+

4 1	5	- :	:		- 1	: :	:	:	: :										
4 3	B 9																		
4 3 4 3 4 3	10 11 12																		
4 3	13 14			1															
4 3 4 3	15 16 17																		
4 3	15 19			1			1												
4 3	21 22			1															
4 3	23 24						1												
4 4	2			1															
4 4 4 4	5 6																		
4 4	7 B			1			1												
4 4	9 10 11						1												
4 4	12 13																		
4 4	15 16			1			1												
4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4	17 18 19																		
4 4	20 21			1			1												
4 4	23																		
4 5	2			1			1												
4 5	4 5																		
4 5 4 5	6 7 B																		
4 5	9 10			1			1												
4 5 4 5	12																		
4 5	14 15			1			1												
4 5	17 18																		
4 5	19 20 21																		
4 5	22 23			1			:												
4 5 4 6 4 6	1 2																	<u>=</u>	
4 5 4 5 4 5 6	4 5									H	=E	#=		$+ \mp$		\pm	H	Ŧ	-1-
4 5 4 5	6 7																		
4 5 4 5 4 6	9 10									E									
4 6	11 12 13																H		
4 5	14 15																	<u></u>	╧
4 5 4 5 4 5 6	16 17 18									H	=E	#=		$+ \mp$		\pm	H	Ŧ	-1-
4 5 4 5	19 20																		
4 6 6 4 6 6 6 6 6 6 6 6 6 6 6 6 6 6 6 6	21 22 23																		
4 6 7	24 1			1			1												
4 7 4 7 4 7	3 4																		
4 7 4 7 4 7	5 6 7																		
4 7	9			1			1												
4 7 4 7	10 11 12																		
4 7	13 14			1			1												
4 7 4 7	16 17																		
4 7 4 7	18 19 20																		
4 7	21 22			1			1												
4 7 4 8	24 1																		
4 5	3																		
4 E	6			1			1												
4 8	B 9																		
4 5	10 11																		
4 8	13			1			1												
4 5	15 16 17																		
4 5	18 19			1			1												
4 B 4 B 4 B	21 22																		
4 E 4 S	23 24																		
4 9	2			1			1												
4 9 4 9	5									E		Ł			_	₽		=+	
4 9	7 E 9									H	=E	#=		$+ \mp$		\pm	H	Ŧ	-1-
4 9	10 11			1			:												
4 9 4 9 4 9 4 9 4 9 9 4 9 9 9 9 9 9 9 9	12 13 14						-			E		1				1		_+	
4 9 4 9 4 9	9 10 11 11 12 13 14 15 16 17 18 19 20 21 22 21 22 24 1									H	=E	#=		$+ \mp$		\pm	H	Ŧ	-1-
4 9 9 4 9 9 4 9 9 9 9 9 9 9 9 9 9 9 9 9	18 19			1			:												
4 9	21 22																	<u></u>	╧
4 9 4 9 4 10	23 24 1											1 -			=		H	7	
4 10	2			:			-												
# 2 30 4 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5	3 4 5 5 6 7 7 8 9 9 10 11 12 13 14 15 15 15 15 17 18 19 20 12 12 12 13 14 15 15 17 17 18 19 19 10 10 10 10 10 10 10 10 10 10 10 10 10																		
4 10 4 10 4 10	7 B 9									E									
4 10 4 10	10 11 12			:			-										H		
4 10 4 10 4 10	13 14																		
4 10 4 10 4 10	15 16 17			- :						H		+		ΗT	$\exists \vdash$	+	H	$=\mathbb{F}$	+=
4 10 4 10	15 19						1												
4 10 4 10 4 10	21 22									E		Ł			_	₽		=+	
4 110 4 150 4 150 4 111 4 111 4 111	23 24 1									H		1		$\vdash \exists$	\pm		H	1	
4 11	2																		
4 111 4 111 4 111 4 111 4 111 4 111 4 111	5 6 7 8 9 10 11 12 13 14 15						-								Ŧ	T	H	#	
4 II 4 II 1 II	10 11									E		Ł			_	₽		=+	
4 11 4 11	12 13 14									H		1		$\vdash \exists$	\pm		H	1	
4 II 4 II 4 II	15 16																		
4 111 4 111 4 111 4 111 4 111	17 18 19									H		+		ΗT	$\exists \vdash$	+	H	$=\mathbb{F}$	+=
4 11	16 17 18 19 20 21 22 23 24 1 1 2 3 4 5 6																		
4 11 4 11 4 11	23 24																	#	
4 12 4 12 4 12	2 3									H		$+ \equiv$	$=$ \parallel $=$	$\vdash \exists$	=	≠	H	=F	
4 12 4 12 4 12 4 12 4 12 4 12 4 12 4 12	4 5																		
4 12 4 12 4 12	5 7 8																		
4 12 4 12 4 12	9 10 11									H		1		$\vdash \exists$	\pm		H	1	
4 12 4 12	12 13																		
4 12 4 12 4 12 4 12 4 12 4 12	13 14 15 16									H		$+ \equiv$	$=$ \parallel $=$	$\vdash \exists$	=	≠	H	=F	1=

4 12 17 4 12 18	1 1	: :		- :	:								
4 12 19 4 12 20 4 12 21	1 1		- 1		- 1								
4 12 21 4 12 22 4 12 23													
4 12 24 4 13 1	1 1		1										
4 13 2 4 13 3 4 13 4	1 1		1		- :								
4 13 5 4 13 6	1 1		1		:	1							
4 13 7 4 13 8	1 1		1		- :								
4 13 10 4 13 11	1 1		1		:								
4 13 12 4 13 13 4 13 13	1 1		:		:	: =							
4 13 14 4 13 15 4 13 16													
4 13 17 4 13 18	1 1		1										
4 13 19 4 13 20	1 1		1		- :								
4 13 22 4 13 23													
4 13 24 4 16 1	1 1		1		- :								
4 14 3 4 14 4	1 1		1		:	1							
4 14 5 4 14 6 4 14 7	1 1		1		- :								
4 14 7 4 14 8													
4 14 10 4 14 11	1 1		1										
4 14 12 4 14 13 4 14 14 4 14 15	1 1												
4 14 15 4 14 16	1 1		1		:	1							
4 14 17 4 14 15	1 1		- 1		- 1								
4 14 20 4 14 21													
4 14 22 4 14 23	1 1		- 1		- 1								
4 16 24 4 15 1 4 15 2													
4 15 3 4 15 4	1 1		1		:	- :							
4 15 5 4 15 6 4 15 7													+
4 15 8 4 15 9	1 1												
4 15 10 4 15 11 4 15 17													+
4 15 11 4 15 14	: :		:		:								
4 15 15 4 15 16 4 15 17													+
4 15 18 4 15 19	1 1				:								
4 15 20 4 15 21 4 15 21													+
4 15 23 4 15 24													
4 16 1 4 16 2 4 18 2			1				H	-1-		$=$ \blacksquare	$+$ \mp	H	
4 16 4 4 16 5													
4 16 6 4 16 7			- :							===			$+$ \square
4 16 9 4 16 10													
4 16 11 4 16 12	1 1		- 1		- 1								
4 16 14 4 16 15													
4 16 16 4 16 17	1 1		:		:	: =							
4 16 18 4 16 19 4 16 20													
4 16 21 4 16 22	1 1		:		:	: =							
4 16 24 4 16 24 4 17 1													
4 17 2 4 17 3	1 1		:		:	1							
4 17 5 4 17 5 4 17 6													
4 17 7 4 17 8	1 1		- 1		- 1	- 1							
4 17 10 4 17 11	1 1		:		:								
4 17 12 4 17 13 4 17 13													
4 17 15 4 17 16	1 1		-		-								
4 17 18 4 17 19													
4 17 20 4 17 21 4 17 22													
4 17 23 4 17 24	1 1		:		:	1							
4 18 2 4 18 3	1 1				-	- : -							
4 18 4 4 18 5	1 1												
4 18 7 4 18 8	1 1		1										
4 18 9 4 18 10 4 18 11	1 1												
4 18 12 4 18 13 4 18 13 4 18 14 1 18 15	1 1		1										
4 18 14 4 18 15 4 18 26			1										
4 18 17 4 18 18	1 1		:		:	1							
4 18 19 4 18 20 4 18 21													
4 18 22 4 18 23 4 18 24	1 1				:								\blacksquare
4 19 1 4 19 2													
4 19 3 4 19 4 4 19 5			- :							===			$+$ \square
4 19 4 4 19 5 4 19 6 4 19 7													
4 19 E 4 19 9 4 19 10			- :							===			$+$ \square
### 19 19 19 19 19 19 19 19 19 19 19 19 19													
4 19 15								+=	H				+
4 19 16 4 19 27			- :										
4 19 18 4 19 19 4 19 30										_+			
4 23 34 4 33 17 4 32 17 4 32 18 4 32 18 5 18 6 18 6 18 6 18 6 18 6 18 6 18 6 18 6	: :				:								
4 19 23 4 19 24 4 20 1													+
4 20 2 4 20 3	1 1				-	- : -							
4 20 6													+
4 220 8 4 220 8 4 220 8 4 220 9 4 20 10 4 20 10 4 20 11 4 20 11	: :		:		:								
4 20 9 4 20 10 4 20 11													+
4 20 11													\blacksquare
4 20 14 4 20 15 4 20 16													+
4 20 25 4 20 25 4 20 25 4 20 25 4 20 27 4 20 27 4 20 28			- :										
4 20 29 4 20 20 4 20 21													+
4 20 21 4 20 22 4 20 23													
4 20 23 4 20 24 4 21 1 4 21 2								+=	H				+
4 21 4													
4 21 5 4 21 6 4 21 7													+
4 22 5 4 23 12 4 23 12 4 23 13 4 23 13 4 33 13 4 33 13 4 33 13 4 5 3 13 4 5	: :				:	1							
4 21 10 4 21 11 4 21 12													+
4 21 13 4 21 14	: :				:	1							
4 21 15 4 21 16 4 21 17													+
4 21 18 4 21 19 4	1 1				:								\blacksquare
* 21 20 4 21 21 4 21 22										_+			
4 21 23 4 4 21 24 4			- :										
4 22 1 4 22 2 4 22 3													+
4 22 3 4 22 4									-	_		\perp	

4 22 5 4 22 6	1 1 1		- 1	- :	- :							
4 22 7 4 22 8 4 22 9		- :	1		1							
4 22 10 4 22 11					-							
4 22 12 4 22 13			1		1							
4 22 14 4 22 15		:	1		1	- 1						
4 22 17 4 22 18		:	:		:							
4 22 19 4 22 20		:	1		1	- 1						
4 22 22 4 22 23		:	:		:							
4 22 24 4 23 1 4 23 2		- :	1		1							
4 23 2 4 23 3 4 23 4												
4 23 5 4 23 6		:	1		:							
4 23 7 4 23 E 4 23 9					-							
4 23 9 4 23 10 4 23 11			:		:							
4 21 12 4 21 14					-							
4 23 15 4 23 16			:		:							
4 23 17 4 23 1E 4 23 19												
4 23 20 4 23 21		:	1		:							
4 23 22 4 23 23 4 23 23												
4 23 24 4 4 24 1 4 24 2 4 2 4 2 4 2 3 2 4			1		1							
4 24 3 4 24 4		:	1									
4 24 6 4 24 7			- :		:							
4 24 E 4 24 9 4 24 10												
4 24 11 4 24 12		:	1		:	1						
4 24 11 4 24 14 4 26 25		:	1									
4 28 15 4 24 16 4 24 17					1							
4 24 18 4 24 19 4 24 19									_	+		
4 24 21 4 24 22			:		:	1						
4 24 23 4 24 24 4 25 1									_	+		
4 25 2 4 25 3			- :		:							
4 25 4 4 25 5 4 25 6												
4 25 7 4 25 8												
4 25 9 4 25 10 4 25 11												
4 25 12 4 25 13												
4 25 14 4 25 15 4 25 16												
4 25 17 4 25 18												
4 25 20 4 25 20 4 25 21												
4 25 22 4 25 23		:	1		:							
4 26 1 4 26 2												
4 25 3 4 26 4 4 26 5		:	1									
4 26 6 4 26 7		:	1		1							
4 26 9 4 26 10												
4 26 11 4 26 12 4 26 13			1		1							
4 26 14 4 26 15		:	1		1							
4 26 17 4 26 17 4 26 18												
4 26 19 4 26 20 4 26 20			1		1							
4 26 22 4 26 23		:	1		1							
4 27 1 4 27 2												
4 27 3 4 27 4 4 27 5			1		1							
4 27 6 4 27 7		1	1		:	- 1						
4 27 E 4 27 9 4 27 10			1									
4 27 11 4 27 12 4 27 12			1		1							
4 27 14 4 27 15		1	1		:							
4 27 15 4 27 17 4 27 18												
4 27 19 4 27 20		- :	1		1							
4 27 22 4 27 23												
4 27 24 4 28 2 4 28 2 4 28 3		:	1		:							
4 28 4			1		1							
4 28 5 4 28 6 4 78 7		:	1									
4 28 8 4 28 9		1	1		:	- 1						
4 28 10 4 28 11 4 28 11												+
4 28 11 4 28 14		:	1		:							
1 2 2 1 1 2 2 1 1 2 2 2 2 1 3 2 2 2 1 4 2 2 2 2 1 4 2 2 2 2 1 5 2 2 2 2 1 6 2 2 2 2 1 7 2 2 2 2 1 7 2 2 2 2 1 8 2 2 2 2 1 9												
4 28 18 4 28 19 4 4 28 19 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4			- 1		1							
- 40 28 21 4 28 22 4 4 28 22 22						1						
4 28 23 4 28 24 4 20 1			-		1		H	$+ \mp$			F	$+ \Box$
4 29 3			:		:	1						
4 29 4 4 29 5 4 29 6												
4 29 7 4 29 8					- :							
t 22 4 1 2 2 1 1 2 2 1 1 2 2 1 1 2 2 1 1 3 2 1 1 4 2 2 1 1 4 2 2 1 1 4 2 2 1 1 4 2 2 1 1 4 2 2 1 1 4 2 2 1 1 4 2 2 1 1 4 2 2 1 1 4 2 2 1 1 4 2 2 1 1 4 2 2 1 1 4 2 2 1 1 4 2 2 1 1 4 2 2 1 1 5 2 1 1 6 2 2 1 1 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7											E	
4 29 12 4 29 11 4 29 14		:	1									
4 29 15 4 29 16			1		1							
4 29 18 4 29 19												
4 29 20 4 29 21 4 29 22												
			:		:	1						
4 30 3 4 30 3 4 30 3 4 4 30 5 4 4 30 5 4 4 30 5 4 4 30 5 4 4 30 7 4 4 30 6		1									Ħ	\blacksquare
* 30 6 4 30 7 4 30 8												
			-		1		H	$+ \mp$			F	$+ \Box$
4 30 30 10 40 4 30 30 31 40 4 30 31 31 4 4 30 31 31 4 4 30 31 31 4 4 30 31 31 4 4 30 31 31 31 4 4 30 31 31 31 31 31 31 31 31 31 31 31 31 31			:		:							
4 30 14 4 30 25 4 30 26												
4 30 17 4 30 18					- :							
4 92 15 4 8 9 15 4 9 9 25 4 9 9 15 4 1 1 1 1 5 1 1 1 1								$\pm \pm$				
4 30 22 4 30 23 4 30 23											ΕĖ	
5 1 2 5 1 2					- 1						Ħ	\blacksquare
5 1 3 5 1 4 5 1 5												
5 1 6 5 1 7 5 1 7							H	$+ \Box$		+ + + + -	H	$+ \mp$
5 1 9 5 1 10					- 1							
5 1 11 5 1 12 5 1 13												
5 1 14 5 1 15 5 1 15 5 1 16			- :		:							
1 16								 				

5 1 17 5 1 18	1 1	: :		- 1	- :										
5 1 19 5 1 20			- :		1										
5 1 22 5 1 23					-										
5 1 26 5 2 1					1		1								
5 2 2 5 2 3			- :		1										
5 2 5 5 2 6			:		:		: -								
5 2 7 5 2 8			- :		1										
5 2 10 5 2 11			:		:		1								
5 2 12 5 2 11			:		:		- :								
5 2 16 5 2 15					-										
5 2 17 5 2 18					1		- :								
5 2 19 5 2 20			- :		1		- 1								
5 2 22 5 2 23					1										
5 2 24 5 3 1			- :		1										
5 1 1			:		:		: -								
5 3 5			- :		1										
5 1 9					-										
5 3 10 5 3 11					1		1								
5 3 12 5 3 13															
5 3 15 5 2 16					:		: -								
5 3 17 5 3 18			- :		1										
5 3 20 5 3 21															
5 3 22 5 3 23			- :		1										
5 3 34 5 4 1 5 4 2															
5 4 3 5 4 4					:		: -								
5 4 5 5 4 6															
5 4 E 5 4 0					1										
5 4 10 5 4 11 5 4 17									\rightarrow	_			\rightarrow		+
5 4 13 5 4 14					:										
5 4 15 5 4 16 5 4 17									-						+
5 4 18 5 4 19					1										
5 4 20 5 4 21 5 4 21									\rightarrow						+
5 4 23 5 4 24					1										
5 5 1 5 5 2 5 4 4								H	\rightarrow	+=	Ħ	$=$ \mp	+		+
5 5 4 5 5 5 5															
5 5 6 5 5 7			- :		1										
5 5 9 5 5 10															
5 5 11 5 5 22			- :		1										
5 5 14 5 5 5 15															
5 5 16 5 5 17			:		:		- :								
5 5 18 5 5 5 20															
5 5 21 5 5 22			:		:		- :								
5 5 24 5 5 6 1															
5 6 2 5 6 3			:		:										
5 6 4 5 6 5					-										
5 6 7 5 6 E			:		:										
5 6 10 5 6 11															
5 6 12 5 6 13			:		:										
5 6 15 5 6 16															
5 6 17 5 6 18 5 6 19					-										
5 6 20 5 6 21			:		:										
5 6 23 5 6 24															
5 7 1 5 7 2 5 7 3					-										
5 7 4 5 7 5			:		:		: -								
5 7 6 5 7 7					-										
5 7 9 5 7 10			:		:		: -								
5 7 11 5 7 12 5 7 13					-										
5 7 14 5 7 15			:		:		: -								
5 7 16 5 7 17 5 7 18															
5 7 19 5 7 20			:		:										
2 7 22 5 7 250 5 7 22 5 7 22 5 7 22 5 7 23 5 7 23					-										
5 7 24 5 8 1			- :		1										
5 8 3 5 8 4															
5 8 3 5 8 4 5 8 5 5 8 6 5 8 6 5 8 6					-				\rightarrow	+	H	==	$+$ \mp	H	
5 8 10 5 8 31 5 8 22 5 8 13 5 8 13 5 8 13					-				\rightarrow	+	H	==	$+$ \mp	H	
2 8 8 9 5 8 10 5 5 8 11 5 5 8 11 5 5 8 11 5 5 8 11 5 5 8 11 5 5 8 11 5 5 8 14 5 5 8 14					1				\rightarrow						
5 B 25 5 B 26 5 C C C C C C C C C C C C C C C C C C C								H	$-+$ \mp		ÞŦ	$=$ \mp	\rightarrow		+
\$ 1 18 18 18 18 18 18 18 18 18 18 18 18 1					1										
5 B 20 5 B 21 5 B 22									-						+
5 8 22 5 8 23 5 8 26															
5 8 22 5 8 24 5 9 0 1 5 9 2 5 9 2 5 9 4								H	$+$ \mp	+=	ĦŦ	$=$ \mp	$+$ \square		+
5 9 4 5 9 5															
5 9 6 5 9 7 5 0 n								H	$+$ \mp	+=	ĦŦ	$=$ \mp	$+$ \square		+
\$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$					1										
5 9 11 5 9 12 5 0 17								H	$+$ \mp	+=	ĦŦ	$=$ \mp	$+$ \square		+
5 9 14 5 9 15					:				\rightarrow						
5 9 15 5 9 16 5 9 17 5 9 17 5 9 18									\rightarrow						+
5 9 19 5 9 20									\rightarrow						
5 9 21 5 9 22 5 9 23					1					_	H	==	$+$ \mp		
5 9 23 5 9 24 5 10 1 5 10 2 5 10 2									\perp						
											H	-			$+$ \blacksquare
5 10 4															
\$ 12 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1											H	-			$+$ \blacksquare
5 10 9 5 10 10 5 10 11															
5 10 12 5 10 13 5 10 13 5 10 14					:										\blacksquare
5 10 14 5 10 15 5 10 26															
5 10 17 5 10 18			- :		:										\blacksquare
5 10 20 5 10 22					-										
5 10 22 5 10 23 5 10 23					1										\blacksquare
5 11 1 5 11 2									\perp						
5 11 1 5 5 11 2 5 5 11 3 5 11 4	1 1					1 1			\perp			_			

5 11 5 5 11 6 5 11 7		1 1	: :	1 1	1 1						
5 11 B											
5 11 10 5 11 11 5 11 12			1 1		1 1						
5 11 13 5 11 14											
5 11 15 5 11 16 5 11 17											
5 11 18 5 11 19		1 1	: :	: :	1 1						
5 11 20 5 11 21 5 11 22											
5 11 23 5 11 24 5 12 1			1 1		1 1						
5 12 2 5 12 1											
5 12 4 5 12 5 5 12 6 5 12 7											
5 12 7 5 12 8		1 1	1 1	1 1	1 1						
5 12 9 5 12 10 5 12 11					1 1						
5 12 12 12 13 15 15 12 15 15 15 15 15 15 15 15 15 15 15 15 15			1 1		1 1						
5 12 15 5 12 16	1 1 1 1	: :	1 1	1 1	1 1						
5 12 17 5 12 18 5 12 19											
5 12 20 5 12 21 5 12 22		1 1	: :	: :	1 1						
5 12 23 5 12 24					1 1						
5 12 23 5 12 34 5 13 1 5 13 2 5 13 2 5 13 3 5 13 3			1 1		1 1						
5 13 4 5 13 5		1 1	1 1	1 1	1 1						
5 13 6 5 13 7 5 23 8					1 1						
5 13 9 5 11 10		1 1	: :	: :	1 1						
5 13 12 5 13 12					1 1						
5 13 14 5 13 25		1 1	1 1	1 1	1 1						
5 13 16 5 13 17 5 13 18											
5 13 19 5 13 20 5 13 21											\pm
5 13 22 5 13 22			1 1								
5 14 1 5 14 2											
5 14 3 5 16 4 5 1a r								+ T	=	$+$ \equiv	$\pm \equiv$
- 44 5 5 14 6 5 14 7			1								
5 14 E 5 14 9 5 14 10											
5 14 11 5 14 12 5 2 2 2			1 1								
5 14 14 15 5 14 15 15 16 17 17 17 17 17 17 17 17 17 17 17 17 17											
5 14 16 5 16 17 5 14 18 17 18								+ T	=	$+$ \equiv	$\pm \equiv$
5 14 19 5 14 20			1								
5 14 21 5 14 22 5 14 23											
5 14 24 5 15 1		1 1	: :	: :	1 1						
5 15 2 5 15 3 5 15 4											
5 15 5 5 15 6 5 15 7			1 1		1 1						
5 15 8 5 15 9	1 1 1 1	: :	1 1	1 1	1 1						
5 15 10 5 15 11 5 15 12			1 1								
5 15 13 5 15 14		1 1	: :	: :	1 1						
5 15 16 5 15 17											
5 15 18 5 15 19 5 15 20											
5 15 21 5 15 22		1 1	: :	: :	1 1						
5 15 24 5 15 24 5 16 1											
5 16 2 5 16 3 5 16 4			1 1		1 1						
5 16 5 5 16 6	1 1 1 1	: :	1 1	1 1	1 1						
5 16 7 5 16 8 5 16 9			1 1								
5 16 10 5 16 11		1 1	: :	: :	1 1						
5 16 13 5 16 14											
5 16 15 5 16 16 5 16 17											
5 16 18 5 16 19		1 1	: :	: :	1 1						
5 16 20 5 16 21 5 16 22											
5 16 23 5 16 24		1 1	1 1	1 1	1 1						
5 17 2 5 17 3	1 1 1	1 1	1 1	1 1	1 1						
5 17 4 5 17 5 5 17 6											
5 127 7 5 127 8 5 127 8 5 127 9		1 1									\equiv
5 17 10											
5 17 11 5 17 12 5 17 12 5 17 13											
5 17 15 5 17 16 5 17 16 5 17 17		1 1									\equiv
5 17 18 5 17 18 5 17 19			1 1	1							
\$ 19 10 10 10 10 10 10 10 10 10 10 10 10 10											\pm
5 17 23 5 17 26 5 12 26				1 1							
5 18 2 5 18 3			1 1	1							
1											
5 18 7 5 18 8 5 16 0								+			ΗĪ
5 18 10 5 18 21			1								
5 18 12 5 18 13 5 18 14			1								
5 18 25 5 18 16 5 18 16		1	1								
5 18 17 5 18 18 5 18 19			1								
5 18 20 5 18 21 5 18 21			1					+			ΗĪ
5 18 23 5 18 24		1 1	1								
5 19 1 5 19 2 5 19 3											
5 19 4 5 19 5			1 1								
5 19 7 5 19 8			1								
5 19 9 5 19 10 5 10 17								+ $$		+T	=
, H			1								
5 19 14 5 19 15 5 19 16			1								#=
5 19 17 5 19 18 5 19 18 5 19 18		1 1	1								
5 19 19 5 19 5 19 5 19 20 5 19 21											
1 2 2 4 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1			1 1					+ $$		+T	=
5 20 2			1								
5 20 3 5 20 4 5 20 5			1								
5 20 6 5 20 7			1 1								
5 20 E 5 20 9 5 20 10			1								
5 20 11 5 20 12 5 20 12								+ $$		+T	=
5 20 14 5 20 15			1 1	1							
> 20 16						L L L L L L L L L L L L L L L L L L L			 		

5 20 27 5 20 18		- 1	1 1	- 1	1	: :							-
5 20 19 5 20 20 5 20 21	1 1	1			1								
5 20 22 5 20 23	1 1	1			:		: =						
5 20 24 5 21 1 5 21 2													
5 21 3 5 21 4	1 1	1			:								
5 21 5 5 21 6 5 21 7													
5 21 E 5 21 9	1 1	1			:		:						
5 21 10 5 21 11 5 21 11	1 E	1											
5 21 11 5 21 14													
5 21 15 5 21 16	1 1	1			- :								
5 21 16 5 21 19													
5 21 20 5 21 21 5 21 21	1 1	- :			1		- :						
5 21 23 5 21 24													
5 22 1 5 22 2	1 1	1			- :								
5 22 4 5 22 5													
5 22 6 5 22 7	1 1	1			- :								
5 22 9 5 22 10													
5 22 11 5 22 12	1 1	1			- :		- 1						
5 22 13 5 22 14 5 22 15													
5 22 16 5 22 17	1 1	1			- :								
5 22 19 5 22 20	1 1	:			:		: -						
5 22 21 5 22 22	1 1	1			- :								
5 22 24 5 23 1	1 1	:			:		1						
5 23 2 5 23 3 5 23 4	1 1	1			- :		- 1						
5 23 5 5 23 6	1 1				:								
5 23 7 5 23 8 5 21 0									+				+
5 23 9 5 23 10 5 22 11													
5 23 12 5 23 13 5 23 14									+			H	+
5 23 15 5 23 16	1 1	:			:								
5 23 17 5 23 18 5 23 19													+
5 23 20 5 23 21	1 1												
5 23 22 5 23 23 5 23 24									+			H	+
5 26 1 5 26 2	1 1	:			:								
5 24 3 5 24 4 5 24 5													+
5 24 6 5 24 7	1 1	1			1								
5 24 9 5 24 10		1											
5 24 11 5 24 12 5 24 13		1			-								
5 24 14 5 28 15	1 1	1			1								
5 28 17 5 24 18		1											
5 24 19 5 24 20 5 24 21													
5 24 22 5 24 23	1 1	1			:		- : =						
5 25 1 5 25 2													
5 25 1 5 25 4	1 1	1			- :		- 1						
5 25 6 5 25 7	1 1	1			:		: =						
5 25 E 5 25 9		1			-								
5 25 11 5 25 12	1 1	1			:								
5 25 14 5 25 15													
5 25 16 5 25 17	1 1	1			1								
5 25 19 5 25 20	1 1	1			:								
5 25 22 5 25 23													
5 25 24 5 26 1 5 26 2	1 1	1			1								
5 26 3 5 26 4	1 1	1			:								
5 26 6 5 26 7													
5 26 B	1 1	1			- :								
5 26 11 5 26 12	1 1	1			:								
5 26 14 5 26 14													
5 26 16 5 26 17	1 1	- :			1		:						
5 26 19 5 26 20													
5 26 21 5 26 22 5 26 23 5 26 24									$+ \exists$	$ \vdash$		HT	+
5 27 1												Ħ	
5 27 2 5 27 3 5 27 3 5 22 4 5 27 5									+				+
5 27 5 5 27 6 5 27 7	1 1	:			:								
5 27 8		:			:							Еŧ	
5 27 10 5 27 11 5 27 12 5 27 12 5 27 13									$+ \exists$	$ \vdash$		HT	+
5 27 21 5 27 21 5 27 21 5 27 21 5 27 21 5 27 31 5 27 31 5 27 34												Ħ	
								H	+		+	FF	$+ \blacksquare$
\$ 22 8 \$ 27 17 \$ 27 17 \$ 27 17 \$ 27 17 \$ 27 19 \$ 3 27 19 \$ 3 27 19 \$ 4 27 19 \$ 5 27 19 \$	1 1	- :			:								
5 27 23 5 27 24 5 28 1	1 1	1			1								
5 28 2 5 28 3	1 1	1			:		:						
5 28 5 5 28 6													
5 28 7 5 28 8 5 28 8	1 1	1			1								
5 28 10 5 28 11	1 1	1			:								
5 28 22 5 28 13 5 28 14									+			H	+
5 28 15 5 28 16 5 28 16	1 1												
1											\perp		
5 28 20 20 5 28 21 5 28 77									+		$++\mp$	ÞΕ	+
2 All All All All All All All All All Al	1 1				1								
5 29 1 5 29 2 5 29 3									+			H	+
5 29 4	1 1												##
5 29 5 5 29 5 5 29 7 5 29 7 5 29 8													
5 29 11												<u></u>	
5 29 12 5 29 21 5 29 13 5 29 14 5 29 15	1 1							H	+		$+ \Box =$	H	$+ \mp$
5 29 14 5 29 15 5 29 16													
5 29 17 5 29 18 5 29 19	i i											<u>E</u>	$\pm \pm$
5 29 20 5 29 21 5 29 21					-								\blacksquare
5 29 23 5 29 24	1 1				:								
5 30 1 5 30 2 5 30 3									+			H	+
5 30 3 5 30 4									\rightarrow				

\$ 30 5 \$ 30 6 \$ 30 7	1 1 1	: :	: :	:							
5 30 E 5 30 9											
5 30 10 5 30 11 5 30 12											
5 30 13 5 30 14		1 1									
5 30 15 5 30 36 5 30 37											
5 30 18 5 30 19 5 30 20		1 1		- 1							
5 30 21 5 30 22											
5 30 23 5 30 24 5 31 1		1 1		1							
5 31 2 5 31 3		1 1									
5 31 4 5 31 5 5 31 6											
5 31 7 5 31 8		1 1		:							
5 31 10 5 31 11											H
5 31 12 5 31 13 5 31 14											
5 31 15 5 31 16		1 1		:							
5 31 17 5 31 18 5 31 19											
5 31 20 5 31 21		1 1		1							
5 31 23 5 31 24											H
6 1 1 6 1 2											
6 1 4		: :		:							
6 1 6 6 1 7											
6 1 9 6 1 10		1 1		1							
6 1 12 6 1 13											
6 1 14 6 1 15		1 1		- :							
6 1 17 6 1 18							\Box	=			
6 1 19 6 1 20 6 1 21											H
6 1 22 6 1 23				:							
6 2 1 6 2 1								\pm			
6 2 3 6 2 4 6 7 7							$+\square$	$\dashv \exists$	$\dashv \exists$	=	Ħ
6 2 6 6 2 7				:			\Box	=			
6 2 8 6 2 9 6 2 10											H
6 2 11 6 2 12 6 2 12								\rightarrow			Ħ
6 2 14 6 2 15								\rightarrow			
6 2 16 6 2 37 6 2 18						$++$ \mp	+	$\dashv \top$	+	_ _	Ħ
6 2 19 6 2 20				:			+	\rightarrow			H
6 2 21 6 2 22 6 2 23											
6 2 24 6 3 1		1 1		1							
6 3 3 6											
6 3 5 6 3 6											
6 3 5		: :									
6 3 11 6 3 11 6 3 12											
6 3 23 6 3 14 6 3 15											
6 3 16 6 3 27		: :		:							
6 3 1E 6 3 19											
6 3 21 6 3 22		1 1		1							
6 3 24 6 4 1											
6 4 2 6 4 3 6 4 4											
6 4 5 6 4 6		: :									
6 4 E											
6 4 10 6 4 11 6 4 17											
6 4 23 6 4 24		: :		:							
6 4 15 6 4 16 6 4 27											H
6 4 18 6 4 19 6 4				:			+		\blacksquare		Ħ
6 4 21 6 4 22											
6 4 23 6 4 24 6 5 1							+		+		H
6 5 2 6 5 3				:				\rightarrow			Ħ
6 5 5 6 5 6								\pm			
6 5 7 6 5 8							$+\square$	$\dashv \exists$	$\dashv \exists$	=	Ħ
6 5 30 6 5 11 6 5 12				:							
**											
6 5 15 6 5 16 5 7							$+\square$	$\dashv \exists$	$\dashv \exists$	=	Ħ
6 5 18 6 5 19				:							H
6 5 21 6 5 22								\rightarrow			
6 5 23 6 5 24 6 6 1											H
6 6 2 6 5 3 6 6 4							+	\rightarrow			Ħ
6 6 4 6 6 5 6 6 6							\Box	=			
1								\pm			
6 6 10 6 5 11 8 * *							$+ \mp =$				Ħ
6 6 12 6 6 13 6 6 14							\Box	=			
6 6 15 6 6 16 7 7							+		+		Ħ
6 6 18 6 6 19				:				\rightarrow			
6 6 21 6 6 22								\pm			H
6 6 23 6 6 24 7 1							$+ \mp \mp$				盽
6 7 2 6 7 3 6 7 3				:							
6 7 4 6 7 5 6 7 6							+		+		Ħ
6 7 7 6 7 8				- :							
6 7 9 6 7 10 6 7 11											H
6 7 12 6 7 13 6 7 13 6 7 14								\rightarrow			Ħ
6 7 9 15 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1							\perp	\rightarrow			=
6 7 27 6 7 18 6 7 18				-		$++$ \mp	+	$\dashv \top$	+	-1-	Ħ
6 7 20 6 7 21							\Box	=			
5 7 115 5 7 125 6 7 7 125 6 7 7 25 6 7 7 25 6 7 7 22 6 7 7 22 6 7 7 22 6 7 7 22 7 2 7 22 7 2 7 22 7 2 7 23											H
6 8 2				- :				\rightarrow			Ħ
6 8 3 6 8 4 6 8 5								\pm			
6 B 6 6 6 7 7 6 7 7 7 7 7 7 7 7 7 7 7 7								\rightarrow			Ħ
6 B 5 6 B 10								\rightarrow			
6 8 11 6 8 12 6 8 13						$++$ \mp	+	$\dashv \top$	+	-1-	Ħ
6 B 14 6 B 15				:							
b B 16					 	 					1

	6 E 17 6 E 18	: :	1 1	- 1	- 1	- :									
	6 B 19		1 1	1		1									
	6 8 22 6 8 23					-									
	6 8 24 6 9 1		: :	1		1	1								
	6 9 2 6 9 3		1 1	1		1									
	6 9 5		1 1	- 1		:	: -								
	6 9 7 6 9 8		1 1	1		1									
	6 9 10 6 9 11		1 1	- 1		:	1								
	6 9 12 6 9 11		1 1	- 1		:	- :								
	6 9 16 6 9 15					-									
	6 9 17 6 9 18		: :	1		1	- :								
	6 9 19 6 9 20		1 1	1		1	- 1								
	6 9 22 6 9 23			- 1		1									
	6 9 26 6 10 1		: :	1		1									
	6 10 3 6 10 4		1 1	- 1		:	: -								
	6 10 5 6 10 6		: :	1		1									
	6 10 7 6 10 8					-									
	6 10 10 6 10 11		: :	1		1	1								
	6 10 12 6 10 13 6 10 14			- 1											
	6 10 15 6 10 16		1 1	- 1		:	: -								
	6 10 17 6 10 18		: :	1		1									
1 M S	6 10 20 6 10 21														
1 M S	6 10 22 6 10 23		1 1	1		1									
1 M S	6 11 1 6 11 2														
1 M S	6 11 3 6 11 4		1 1	1		:	: -								
1 M S	6 11 5 6 11 6													Eŧ	
1 M S	6 11 5 6 11 9					1									
1 M S	6 11 10 6 11 11 6 11 17								\rightarrow			\rightarrow			
1 M S	6 11 13 6 11 14					1									
1 M S	6 11 15 6 11 16 6 11 17											=			+
1 M S	6 11 18 6 11 19			1		:						\rightarrow			
1 M S	6 11 20 6 11 21											=			
1 M S	6 11 23 6 11 24					1						\blacksquare			
1 M S	6 12 1 6 12 2 6 12 2					-			\rightarrow		$\vdash \top$	$\dashv \exists$			$+ \blacksquare$
1 M S	6 12 4 6 12 5														
1 M S	6 12 6 6 12 7		1 1	1		1									
1 M S	6 12 9 6 12 10														
1 M S	6 12 11 6 12 12		1 1	1		1									
1 M S	6 12 14 6 12 15														
1 M S	6 12 16 6 12 17		1 1	1		1									
1 M S	6 12 19 6 12 20														
1 M S	6 12 21 6 12 22		1 1	- 1		:	- :								
6 M 15	6 12 28 6 12 13 1														
6 M 15	6 13 2 6 13 3		1 1	- 1		:									
1 M S	6 13 4 6 13 5 6 13 6					-									
6 M 15	6 13 7 6 13 E		1 1	1		:									
1 M S	6 13 10 6 13 11														
1 M S	6 13 12 6 13 13 6 13 13			- 1											
1 M S	6 13 15 6 13 16		1 1	1		:									
1 M S	6 11 18 6 13 19														
6 M 15	6 13 20 6 13 21 6 13 22			1		1									
1 M S	6 13 23 6 13 24		1 1	- 1		1									
1 M S	6 14 1 6 14 2 6 24 3														
1 M S	6 14 4 6 14 5		1 1	- 1		- :	- 1								
1 M S	6 14 7 6 14 8														
1 M S	6 14 9 6 14 10		1 1	1		1									
1 M S	6 14 12 6 14 13														
6 M 33	6 14 14 6 14 15 6 14 15		1	1		1									
	6 14 17 6 14 18		1 1	- 1		:	: -								
	6 14 19 6 14 20 6 14 20							H	$+$ \mp	$\pm \equiv$	F	$+$ \exists	=	F	+
	- AM 21 6 14 22 6 14 23					1						\blacksquare			
	6 14 24 6 6 15 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1											=			
	6 15 3 6 15 4			1		:						\rightarrow			
	6 15 7											=			+
	6 15 B		1 1			:									
	6 15 10 6 15 11 6 15 17								\rightarrow			\rightarrow			
	6 15 13 6 15 14		1 1			:									
	6 15 18 6 15 19		1 1	1		:									
	6 15 20 6 15 22					-									
	6 15 23 6 15 24		1 1	1		:									
	6 16 1 6 16 2 6 16 3								\rightarrow			\rightarrow			+
	6 16 4 6 16 5											\blacksquare			
	6 16 6 6 16 7											=			
	6 16 9 6 16 10		1									\blacksquare			
	6 16 11 6 16 12 6 16 13											=			
	6 16 14 6 5 15 15 15 15 15 15 15 15 15 15 15 15 1		1									\blacksquare			
	6 16 17 6 16 17											=			
	6 16 19 6 16 20		1									\blacksquare			
	6 16 22 6 16 22					-									
	6 16 24 6 17 1		1 1	1		:									
	6 17 4											\rightarrow			
	6 17 5 6 27 6			1		:									
	6 17 7 6 17 8 6 17 0								\rightarrow			\rightarrow			+
	6 17 10 6 17 11		1									\blacksquare			$+ \mp$
\$ \$\frac{1}{2}\$ \$\frac{1}{3}\$ \$\frac{1}{4}\$ \$\frac{1}{2}\$ \$\frac{1}{3}\$ \$\frac{1}{4}\$	6 17 12 6 17 13 6 17 14											=			
1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	6 17 25 6 17 16					1						\blacksquare			
	6 17 17 6 17 18 6 17 19														
	6 17 20 6 17 21		1									\blacksquare			
	6 17 22 6 17 23 6 17 24														
	6 18 1 6 18 2					1						T			
	6 18 3 6 18 4											-			\bot

6 18 5 6 18 6	:	: :	- 1	:	1 1	- 1								
6 128 6 6 128 7 6 128 8 6 128 9 6 128 100 6 128 100 6 128 110 6 128 121 6 128 121														
6 18 10 6 18 11 6 18 12	1			- 1										
6 18 14														
6 18 15 6 18 16 6 18 17														
6 18 18 6 18 19	:			:		: =								
6 18 20 6 18 21 6 18 22	1													
6 28 23 6 28 24	- :			:		- :								
6 19 1 6 19 2	1			- 1		- 1								
6 19 3 6 19 4 6 6 19 5 6 6 19 6 6 19 6 6 6 19 6 6 6 19 7 7														
6 19 6 6 19 7 6 19 8	1			- 1		- 1								
6 19 9 6 19 20														
6 19 11 6 19 12 6 19 13	- :			- 1										
6 129 12 6 130 13 8 8 325 344 6 8 125 35 346 6 130 125 66 6 130 12 12														
6 19 16 6 19 17	- :			- 1										
6 19 19 6 19 20														
6 19 21 6 19 22	1			- :		1								
6 19 23 6 19 24 8 20 20 1 6 20 20 3 6 20 20 3 6 20 20 4 6 20 5	1													
6 20 2 6 20 3	1			1		: =								
6 20 4 6 20 5 6 20 6	1													
6 20 7 6 20 8	1			1		: =								
6 20 9 6 20 10 6 20 11														
6 20 12 6 20 13	1			1		: ==								
6 20 14 6 20 15 6 20 15												=	_	+
6 20 17 6 20 18	:			:										
6 20 19 6 20 20 6 20 21												=	_	+
6 20 22 6 20 23	1			1										
6 20 24 6 21 1 6 22 7														+
6 21 3 6 21 4	- :													
6 21 5 6 21 6 5 21 7														± 1
6 21 8 6 21 9	1			1										
6 21 10 6 21 11 6 22 17														+
6 21 13 6 21 14	1			1										
6 21 15 6 21 16 6 22 17														+
6 21 18 6 21 19	1			1										
6 21 20 6 21 21 6 22 27														+
6 21 23 6 21 24	1			1										
6 22 1 6 22 2 6 22 3	1													
6 22 4 6 22 5	1			1		: ==								
6 22 4 6 5 22 5 6 6 22 6 6 22 7 6 6 22 8 6 6 22 8 8	1													
6 22 9 6 22 10				- 1										
6 22 12 6 22 13														
6 22 14 6 22 15 6 22 16	1													
6 22 17 6 22 18	1			- :		1								
6 22 20 6 22 21														
6 22 22 6 22 33				- 1										
6 23 1 6 23 2														
6 23 3 6 23 4 6 23 5														
6 23 6 6 23 7	1			- :										
6 23 9 6 23 10														
6 23 11 6 23 12	1			- 1		- : =								
6 23 14 6 23 15	- :			:		- :								
6 23 16 6 23 17 6 23 18	1													
6 23 19 6 23 20	1			- :		: =								
6 21 22 6 23 22														
6 23 24 6 24 1	1			1		: ==								
6 24 2 6 24 3 6 24 4	1													
6 24 5 6 24 6 6 24 7	- 1							-		+T	\vdash	=		$\pm =$
											Ħ			
6 24 8 6 6 24 9 6 6 24 10 20 20 20 20 20 20 20 20 20 20 20 20 20	- 1							-		+T	\vdash	=		$\pm =$
6 24 11 6 24 11 6 24 14														
6 24 15 6 28 16 6 24 17								=		+T	H	=		\pm
6 24 18 6 24 19														
\$ 25 31 32 45 45 45 45 45 45 45 45 45 45 45 45 45							\vdash	$=$ \top	-1	+	Ħ	$=$ \mp	± 1	Ħ
6 24 23 6 24 24 24	1			1										
6 25 1 6 25 2 6 25 3														\pm
6 25 4 6 25 5	1			1				\equiv						\equiv
6 25 6 6 25 7 6 25 s								_			H			=
6 25 9 6 25 10	1			1										
6 25 11 6 25 12 6 × **												=	_	+
6 25 14 6 25 15	:			:										
6 25 16 6 23 17 6 25 18														+
6 25 19 6 25 20	- 1			1				-						\equiv
6 25 21 6 25 22 6 25 23														=
6 25 24 6 26 1	- :			-										
6 26 3 6 26 4				-							Ħ			≢
1	- 1							\equiv						\equiv
6 26 E														
6 26 10 6 26 11	- 1							\equiv						\equiv
6 26 12 6 26 13 6 26 14								_			H			=
1 22 1 1 1 1 2 1 1 1 1 1 1 1 1 1 1 1 1								\Rightarrow						\equiv
6 26 17 6 26 18 6 26 19														
6 256 226 6 226 221 6 5 26 22 6 6 226 22 6 6 226 23 6 6 27 24 6 27 1														+
6 26 23 6 26 24	1			1				\equiv						\blacksquare
6 27 2 6 27 3								_			H			=
6 27 4 6 27 5 6 27 5	1			1				\equiv						\blacksquare
6 27 7 6 27 8														
6 27 9 6 27 10 6 27 11														+
6 27 12 6 27 13	- 1							\equiv						\equiv
6 27 14 6 27 15 5 77 12														± 1

6 27 17 6 27 18				1 1 1				
6 27 19 6 27 20								
6 27 21 6 27 22		1						
6 27 23 6 27 24		1						
6 28 1 6 28 2		- :						
6 28 3 6 28 4		1						
6 28 5 6 28 6 6 28 7		1						
6 28 B		1						
5 28 10 6 28 11		1						
6 28 12 6 28 13								
6 28 14 6 28 15		1						
6 28 16 6 28 17 6 28 18		1						
6 28 19 6 28 20		1						
6 28 21 6 28 22		1						
6 28 23 6 28 24		1						
6 29 1 6 29 2								
6 29 1 6 29 4		1						
6 29 6		-						
6 29 E		1						
6 29 10 6 29 11		1						
6 29 12 6 29 13		1						
6 29 14 6 29 15								
6 29 16 6 29 17		1						
6 29 18 6 29 19		1						
6 29 21 6 29 22		1						
6 29 23 6 29 24								
6 30 1 6 30 2		1						
6 30 3 6 30 4		1						
6 30 5 6 30 6	: : : : :							
6 30 7 6 30 8 6 30 9							+	
6 30 10 6 30 11		:						
6 30 12 6 30 13								
6 30 14 6 30 15	i i i i i i	1						
6 30 16 6 30 17		- :						
6 30 18 6 30 19								
6 30 21 6 30 21								
6 30 23 6 30 24		1						
7 1 1 1 7 1 2		:						
7 1 3 7 1 4	1 1 1							
7 1 5		1						
7 1 8								
7 1 10 7 1 11								
7 1 12 7 1 13		1						
7 1 14 7 1 15		1						
7 1 16 7 1 17								
7 1 18 7 1 19		1						
7 1 21								
7 1 23 7 1 24								
7 2 1 7 7 2 2		:						
7 2 3 7 2 4		1						
7 2 5 7 2 6		- :						
7 2 7 7 2 8		1						
7 2 10								
7 2 12 7 2 13		1						
7 2 14 7 2 15		:						
7 2 16 7 2 17		1						
7 2 18 7 2 19		1						
7 2 20 7 2 21		1						
7 2 23		1						
7 3 1 7 3 2		:						
7 3 3 7 3 4		- :						
7 1 5		1						
7 3 4								
7 3 10 7 3 11		1						
7 3 12 7 3 13		:						
7 3 14 7 3 15		1						
7 1 17								
7 3 19 7 3 29					\vdash		+	
7 3 21 7 3 22								
7 1 23 7 3 24		1						
7 4 1 7 4 2 7 4 3 7 4 4		- :						
7 4 3 7 4 4 7 4 5							+	
7 4 6 7 4 7		1						
7 4 E 7 4 9 7 4 10	: : : : : :	1				+	+	
7 4 20 7 4 20 7 4 20 7 4 11 7 4 12 7 4 12 7 4 12								
					\vdash		+	
7 4 15 7 4 16		:						
7 4 17 7 4 18	i i i i i	1						
7 4 20 7 4 20							+	
7 4 20 7 4 21 7 4 22 7 4 22 7 7 4 22 7 7 4 24 7 7 5 1								
7 4 32 7 4 316 7 7 4 316 7 7 4 20 7 7 4 20 7 4 22 7 4 22 7 4 22 7 4 22 7 4 24	1 1 1 1							
	1 1 1 1					+	+	
7 5 4 7 5 5 4 7 7 5 5 6 7 7 5 6 7 7 5 6 7 7 5 6 7 7 5 6							+	
, 5 6 7 5 7 7 c =							+	
7 5 9 7 5 10		1						
7 5 11 7 5 12	1 1 1 1							
7 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	i i i i i i	1						
7 5 15 7 5 16		- :						
7 5 17 7 5 18 7 5 19								
7 2 3 120 7 5 20 7 7 5 20 7 7 5 20 7 7 5 21 7 7 5 22 7 7 5 22								
7 5 22 7 5 23		1	:		-	-		
7 6 1	1 1 1 1	1						
7 6 2 7 6 3	: : : : : :	1				+	+	
7 6 4 7 6 5								
7 6 5 7 6 7								
7 6 9 7 6 10		1						
7 6 11 7 6 12	1 1 1 1	1						
7 6 13 7 6 14	: : : : :	1						
7 6 15 7 6 16 7 6 17								
7 6 18 7 6 18 7 6 10					\vdash	-	+	
7 6 20 7 6 21		1						
7 6 22 7 6 23	1 1 1 1							
7 6 24 7 7 7 1	1 1 1 1							
7 7 2 7 7 3		1			\vdash			
						1 1 1	<u> </u>	

7 7 5			 					
7 7 7								
7 7 9 7 7 10		:	: :					
7 7 11 7 7 12		:	: :					
7 7 13 7 7 14		:	: :					
7 7 15 7 7 16		- :	1 1					
7 7 17 7 7 18		:	: :					
7 7 20								
7 7 22 7 7 23		:	: :					
7 7 24 7 8 1		:	: :					
7 B 2 7 B 3		- :	1 1					
7 B 4 7 B 5		:	: :					
7 8 7		1	: :					
7 8 9 7 8 10								
7 S 11 7 S 12		:	: :					
7 E 13 7 E 14		:	: :					
7 8 15 7 8 16		1	: :					
7 8 18								
7 B 20 7 B 21		:	: :					
7 S 22 7 S 23		:	: :					
7 B 24 7 9 1		- :	1 1					
7 9 2 7 9 3		:	: :					
7 9 5								
7 9 7		:	: :					
7 9 9 7 9 10		:	: :					
7 9 11 7 9 12		- :	1 1					
7 9 13 7 9 14		1	1 1					
7 9 15 7 9 16 7 0 ***			: :				+	\rightarrow
7 9 17 7 9 18 7 9 29			: :					
7 9 20 7 9 21	1 1 1 1		: :					$+$ \mp \mp
7 9 22 7 9 23 7 0 0 11			1				+	
7 10 1 7 10 2							+	\rightarrow
7 10 3 7 10 4			: :					
7 10 5 7 10 6	1 1 1 1		: :					
7 10 7 7 10 8			: :			$-+$ \mp	++	$++$ \mp
7 10 9 7 10 10 10 7 10 30			: :					
7 10 12 7 10 13			: :				+	\rightarrow
7 10 14 7 10 15			1 1					
7 10 16 7 10 17	1 1 1 1		: :					
7 10 18 7 10 19		1	: :					
7 10 21 7 10 22								
7 10 23 7 10 24		:	: :					
7 11 1 7 11 2		:	: :					
7 11 3 7 11 4		:	: :					
7 11 6								
7 11 8 7 11 9		1	: :					
7 11 10 7 11 11		:	: :					
7 11 12 7 11 11		:	: :					
7 11 16 7 11 15 7 11 16								
7 11 17 7 11 18		1	: :					
7 11 19 7 11 20		:	: :					
7 11 21 7 11 22		:	: :					
7 11 23 7 11 24		:	: :					
7 12 2								
7 12 4 7 12 5		:	: :					
7 12 6 7 12 7		:	: :					
7 12 E 7 12 9			: :					
7 12 10 7 12 11 7 12 12								
7 12 13 7 12 14		:	: :					
7 12 15 7 12 16		:	: :					
7 12 17 7 12 18			: :					
7 12 20								
7 12 22 7 12 23		:	: :					
7 12 24 7 13 1		:	: :					
7 13 2 7 13 3		:	: :					
7 13 4 7 13 5			: :			-	+	+
7 13 7 7 13 8		:	: :					
7 13 9 7 13 10 7 13 11	i i i i		1 1				+	
7 13 11 7 13 12 7 13 12			: :					
7 11 12 13 13 13 13 14 15 15 15 15 15 15 15 15 15 15 15 15 15			: :	\vdash			+	\rightarrow
7 13 16 7 13 17	1 1 1 1		: :					
			: :				+	
7 13 21 7 13 27			: :				+	\rightarrow
7 13 23 7 13 24			: :					
7 14 1 7 14 2	i i i i i i		1 1				+	
7			: :				+	\rightarrow
7 14 5 7 14 6 7 14 7			: :					
7 14 8 7 14 9	1 1 1 1		: :					$+$ \mp \mp
7 14 20 7 14 11			: :				+	
7 2 34 4 1 4 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1			: :			-	+	+
7 14 15 7 14 15			: :					
7 14 17 7 14 18	1 1 1 1		: :					
7 14 19 7 14 20 7 14 2			: :				+	
7 14 22 7 14 22 7 14 23			: :			-	+	+
7 14 24 7 15 1			1 1					
7 15 2 7 15 3	i i i i i i		1 1				+	
7 15 4 7 15 5 7 15 5								
7 135 E 7 135 T 7 135 T 8 7 7 135 T 8 11 7 7 135 T 11 7 7 135 T 11 7 7 135 T 11			: :				+	\rightarrow
7 15 9 7 15 10	1 1 1 1		: :					
7 15 11 7 15 12	1 1 1		: :					$+$ \mp \mp
7 15 13 7 15 14 7 15 15 15 16 7 15 15 16			: :				+	
			: :				+	+
			: :					
7 15 19 20 7 7 15 29 7 7 15 22 7 7 15 22 7 7 15 22 7 7 15 22 7 7 15 23 7 7 15 23 7 7 15 23 7 7 15 23 7 15 24 15 24							+	++ $=$
7 15 22 7 15 23 7 15 24			: :			\rightarrow	+ + + + +	\rightarrow
7 15 26 7 16 1 7 16 2			: :			-	+	+
7 16 2 7 16 3 7 16 4			: :					
7 16 5 7 16 6			1 1					
7 16 7 7 16 8	: : : : :		1 1				+	$++$ \mp
7 16 9 7 16 10 7 16 10			: :			\rightarrow	+ + + + +	\rightarrow
7 16 12 7 16 12 7 16 13			: :			-	+	+
7 16 14 7 16 14			: :	\vdash			+	\rightarrow
	the second secon			. —	1 1 1		1 1 1	

7 16 17 7 16 18 7 16 19												
7 16 20 7 16 21		- :		- :	1							
7 16 22 7 16 23		- 1		- :	1							
7 17 1 7 17 2					1							
7 17 3 7 17 4		1		- :								
7 17 6 7 17 7		:			1							
7 17 E		- 1		- :	1							
7 17 11 7 17 12												
7 17 13 7 17 14		1		- :	1 ==							
7 17 16 7 17 17 16 7 17 17												
7 17 18 7 17 19		1		- :	1 ==							
7 17 21 7 17 22					1 -							
7 17 23 7 17 24 7 19 1		1		- :								
7 18 2 7 18 3												
7 18 4 7 18 5		- :		- :	1							
7 18 6 7 18 7 7 18 7												
7 18 9 7 18 10		:		- :								
7 18 12 7 18 12 7 18 13												
7 18 13 7 18 14 7 18 15 7 18 15 15 15 15 15 15 15 15 15 15 15 15 15		- :		- :	1							
7 18 17 7 18 17 7 18 18												
7 18 19 7 18 20		:		- :								
7 18 21 7 18 22 7 18 22												
7 18 24 7 19 1		- :		- :	1							
7 19 2 7 19 3 7 19 4												
7 19 5 7 19 6 7 19 7						$= \mp$		$+$ \mp		$++\mp$	HŦ	$+ \blacksquare$
7 19 7 7 19 8 7 19 9												
7 19 10 10 7 19 11 7 7 19 11 11 11 11 11 11 11 11 11 11 11 11								$+ \mp$		+		$+$ \blacksquare
7 19 13 7 19 14												
7 19 15 7 19 16 7 7 10 10 10 10 10 10 10 10 10 10 10 10 10						$= \mp$		$+$ \mp		$++\mp$	HŦ	$+ \blacksquare$
7 19 1E 7 19 19 19												
7 19 20 7 19 21 7 20								$+ \mp$		+		$+$ \blacksquare
7 19 23 7 19 24												
7 20 1 7 20 2								$+ \mp$		+		$+$ \blacksquare
7 20 4 7 20 5												
7 20 6 7 20 7								$+ \mp$		+		$+$ \blacksquare
7 20 9 7 20 10		1		:								
7 20 11 7 20 12 7 20 13												
7 20 14 7 20 15		:		- :								
7 20 17 7 20 18 7 20 18												
7 20 19 7 20 20 7 20 21												
7 20 22 7 20 23		:		1								
7 20 24 7 21 1 7 21 2												
7 21 3 7 21 4 7 21 5												
7 21 6 7 21 7					: ==							
7 21 8 7 21 9 7 21 10												
7 21 11 7 21 12		:		- :								
7 21 14 7 21 15					: ==							
7 21 16 7 21 17 7 21 18												
7 21 19 7 21 20 7 21 20		:			: ===							
7 21 22 7 21 22 7 21 23												
7 21 24 7 22 1 7 22 2					<u> </u>							
7 22 3 7 22 4		:		- :								
7 22 6 7 22 7												
7 22 E 7 22 9				1	1							
7 22 11 7 22 12					: ==							
7 22 11 7 22 14 7 22 15												
7 22 16 7 22 17		:		1								
7 22 18 7 22 19 7 22 19 7 22 20					1							
7 22 21 7 22 22 7 22 22		- :		1								+
7 22 23 7 22 24 7 22 24 7 23 1												+
7 23 2 7 23 3		- :		1								+
7 23 4 7 23 5 7 22 6 7 22 7												
7 23 8												
7 23 23 25 25 27 27 27 27 27 27 27 27 27 27 27 27 27				:							E	
7 23 12 7 23 13 7 23 13						$=$ \mp	$+$ \mp	$+$ \mp		+	F	+
7 23 15		- :		1	1 ===							
7 2 2 11 7 2 2 12 7 2 2 13 7 2 2 13 7 2 2 13 7 2 2 13 7 2 2 12 7 2 2 14 7 3 1 1 7 3 1 1 8 3 1 1												
7 23 20 7 23 21 7 23 21				- 1		$=$ \mp	$+$ \mp	$+$ \mp		+	F	+
7 23 23 7 23 24					: ==							
7 24 1 7 24 2 7 24 3											<u></u>	
7 24 4 7 24 5		1		- :								
7 24 9 7 24 10 7 24 11					1							
7 34 7 7 34 7 7 34 9 9 7 34 11 7 7 34 11 7 7 34 11 7 7 34 11 7 7 34 11 7 7 34 11 7 7 34 11 7 7 34 11 7 7 34 11 3 7 7 34 11 3 7 7 34 11 3 7 7 34 11 3 7 7 34 11 3 7 7 34 11 3 7 7 34 11 3 7 7 34 11 3 7 7 34 11 3 7 7 34 11 3 7 7 34 11 3 7 7 34 11 3 7 7 34 11 3 7 7 34 11 3 7 7 3 7 3 7 3 7 3 7 3 7 3 7 3 7 3					1							
7 24 15 7 24 15 7 26 16												
7 34 15 15 2 3 3 1 17 7 3 3 1 18 17 7 3 3 1 18 17 7 3 18 18 7 7 3 18 20 7 7 7 3 18 20 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7						$=$ \mp	$+$ \mp	$+$ \mp		+	F	+
7 24 20 7 24 21		:		:								
7 24 22 7 24 23 7 24 23 7 24 24					:=						<u></u>	
7												
7 25 4												
7 25 6 7 25 7 7 25 8 7 25 8 7 25 9												
7 25 10		- :			1 ===							
7 25 11 7 25 12 7 25 13												
7 25 14 7 25 15 7 25 16						$=$ \mp		$+$ \mp		+	F	+
7 25 17 7 25 17 7 25 18				:								+
, 25 19 7 25 20 7 25 21												
7 25 22 7 25 23 7 25 23						$\exists \exists$	=	$+$ \top	+	$++\mp$	F	+
7 25 1 7 26 2		- :		1								\mp
7 26 3 7 26 4			1 1							+++		

7 26 5		
7 26 7		
7 26 10		
7 26 12 · · · · · · · · · · · · · · · · · ·		
7 26 14		
7 26 17		
7 26 19 · · · · · · · · · · · · · · · · · ·		
7 26 22		
7 26 23 7 26 7 7 27 27 1		
7 27 2		
7 27 5		
7 22 7 · · · · · · · · · · · · · · · · ·		
7 27 38		
7 27 12		
7 27 14		
7 27 16		
7 27 19		
7 22 19		
7 27 28		
7 28 2 : : : : : : : : : : : : : : : : :		
7 28 4		
7 33 6 7 7 33 7 7 7 33 8 7 7 7 33 8 7 7 7 33 8 7 7 7 33 9 7 7 7 33 9 7 7 7 7 7 7 7 7 7		
7 28 9 · · · · · · · · · · · · · · · · · ·		
7 28 12 7 28 12 7 28 13		
7 28 14 · · · · · · · · · · · · · · · · · ·		
7 28 16		
7 28 18		
7 28 21 · · · · · · · · · · · · · · · · · ·	1 1 1 1	
7 28 25		
7 29 2 · · · · · · · · · · · · · · · · ·		
7 29 4		
7 29 7		
7 29 9 · · · · · · · · · · · · · · · · ·	1 1 1 1	
7 29 12 7 29 13 1		
7 29 14 · · · · · · · · · · · · · · · · · ·		
7 29 16 · · · · · · · · · · · · · · · · · ·		
7 20 19		<u></u>
7 29 21 · · · · · · · · · · · · · · · · · ·		
7 29 24 7 29 24		
7 30 1		
7 30 4 · · · · · · · · · · · · · · · · · ·		
7 30 6 7 30 7		
7 20 9 · · · · · · · · · · · · · · · · · ·		
7		
7 30 14		
7 30 16 · · · · · · · · · · · · · · · · · ·		
7 30 18		
7 30 21 · · · · · · · · · · · · · · · · · ·		
7 30 23 7 30 24		
7 31 2		
7 31 4		
7 31 6		
7 31 9		
7 31 11		
7 31 14 · · · · · · · · · · · · · · · · · ·		
7 31 16		
7 21 18 7 1 19 7 1 1 19 7 1 1 1 1 1 1 1 1 1 1 1		
7 31 21 · · · · · · · · · · · · · · · · · ·		
7 31 23		
1 1 2		
1 4 : : : : : : : : : : : : : : : : : :		
8 1 7		
8 1 9 · · · · · · · · · · · · · · · · · ·	1 1 1 1	
8 1 11 8 1 12		
8 1 14 · · · · · · · · · · · · · · · · ·		
8 1 16 8 1 17 8 1 18		
8 1 19 · · · · · · · · · · · · · · · · ·		
8 1 21 8 1 22		
8 1 24 8 2 1		
8 2 2		
8 2 5 8 2 6		
8 2 7 8 2 8 1 2 9		
8 2 20		<u></u>
1		
8 2 14 8 2 15 8 2 16		
8 2 17 8 2 17 1 2 18		
1 2 10 10 10 10 10 10 10 10 10 10 10 10 10		
8 2 22 · · · · · · · · · · · · · · · · ·		
B 2 24 · · · · · · · · · · · · · · · · ·	1 1 1 1	
8 3 2 · · · · · · · · · · · · · · · · · ·		
8 3 5 · · · · · · · · · · · · · · · · · ·		
8 1 5 6 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7		
8 3 10 -		
B 3 12	1 1 1 1	
8 3 14		
8 3 16		<u></u>
8 3 19		
8 3 22 8 3 22 8 3 23		
1		
B 4 2 · · · · · · · · · · · · · · · · · ·	1 1 1 1	
8 4 5 8 4 5		
B 4 7	1 1 1 1	
8 4 9 8 4 10		
8 4 12 8 4 33		
E 4 14 : : : : : : : : : : : : : : : : :	 	

1 13 17 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	B 4 17 B 4 18		- 1	: :	1 1							
1 13 17 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	8 4 20 8 4 20											
1 13 17 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	B 4 22 B 4 23 B A 34		- 1									
1 13 17 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	8 5 1 8 5 2	1 1 1	- 1									
1 13 17 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	8 5 3 8 5 4 8 5 5											
1 13 17 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	E 5 6	1 1 1	- :									
1 13 17 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	E 5 9											
1 13 17 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	8 5 11 8 5 12											
1 13 17 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	8 5 14 8 5 15	1 1 1	- 1									
1 13 17 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	8 5 16 8 5 37 8 5 18		- 1									
1 13 17 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	8 5 19 8 5 20	1 1 1	- 1									
1 13 17 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	8 5 21 8 5 22 8 5 23											
1 13 17 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	8 5 24 8 6 1 8 6 2											
1 13 17 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	E 6 3	1 1 1	- 1									
1 13 17 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	E 6 6 7											
1 13 17 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	E 6 E		- 1									
1 13 17 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	\$ 6 11 \$ 6 12	1 1 1	- :									
1 13 17 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	E 6 11 E 6 14 E 6 15											
1 13 17 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	E 6 16 E 6 17	1 1 1	- 1									
1 13 17 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	B 6 19 B 6 20											
1 13 17 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	E 6 21 E 6 22		- 1									
1 13 17 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	8 6 24 8 7 1	1 1 1	- :									
1 13 17 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	8 7 2 8 7 3 8 7 4								H		▙	
1 13 17 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	8 7 5 8 7 6	1 1 1	- 1			+		$\vdash \top$	H	==		肙
1 13 17 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	8 7 8 8 7 8 7 9											
1 13 17 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	8 7 10 8 7 11 8 7 12					+						H
1 13 17 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	8 7 13 8 7 14 8 7 14		- 1									
1 13 17 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	# 7 15 8 7 16 8 7 27											
1 13 17 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	8 7 18 8 7 19 8 7 30					+ =			H		1	目
1 13 17 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	8 7 21 8 7 22		1									
1 13 17 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	8 7 24 8 7 24 8 8 1										ᆂ	
1 13 17 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	8 8 2 8 8 3 8 8 4							$\perp T$	Ħ	==	1	Ħ
1 13 17 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	8 8 5 8 8 6											
1 13 17 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	8 8 7 8 8 8											
1 13 17 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	B B 10 B B 11	1 1 1	- 1									
1 13 17 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	8 8 12 8 8 13 8 8 14		- 1									
1 13 17 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	8 8 15 8 8 16	1 1 1	- :									
1 13 17 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	5 5 15 5 5 10											
1 13 17 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	8 8 20 8 8 21 8 8 22		- 1									
1 13 17 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	E E 23	1 1 1	- 1									
1 13 17 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	8 9 1 8 9 2 8 9 3											
1 13 17 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	E 9 4 E 9 5		- 1									
1 13 17 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	5 9 7 5 9 8	1 1 1	- :									
1 13 17 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	8 9 10 8 9 11											
1 13 17 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	8 9 12 8 9 13		- 1									
1 13 17 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	8 9 15 8 9 16	1 1 1	- :									
1 13 17 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	8 9 17 8 9 18 8 9 19		- 1									
1 13 17 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	E 9 20 E 9 21	1 1 1	- :									
1 13 17 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	8 9 23 8 9 24	1 1 1	- :									
1 13 17 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	8 10 1 8 10 2 8 10 3											
1 13 17 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	E 10 4 E 10 5		- 1									
1 13 17 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	E 10 7	1 1 1	- :									
1 13 17 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	E 10 9 E 10 10 E 10 11		- 1									
1 13 17 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	E 10 12 E 10 13	1 1 1	- :									
	8 10 15 8 10 15 8 10 16											
8 20 20	B 10 18											
	E 10 20 E 10 21					+		$\vdash \top$	H	==		肙
	8 10 23 8 10 23											
	8 11 1 8 11 2 8 11 3					+						
	E 11 4					+		$\vdash \top$	H	==		肙
	8 11 7 8 11 8		1									
	8 11 10 8 11 11 11							\vdash				
	8 11 12 12 8 11 13 13 15 15 15 15 15 15 15 15 15 15 15 15 15					+ =			H		1	目
	8 11 15 8 11 16		1									
	8 11 17 8 11 18 8 11 19											
	B 11 20 B 11 21 B 11 21							\vdash	H	==	1	目
	8 11 23 8 11 24											
	8 12 1 8 12 2 8 12 3											
	8 12 4 8 12 5 8 12 6							\vdash	H	==	1	目
	B 12 7 B 12 8											
	8 12 9 8 12 10 8 12 11											
	B 12 12 12 B 12 13 15 15 17 17 17 17 17 17 17 17 17 17 17 17 17							$\perp T$	Ħ	==	1	Ħ
	8 12 15 8 12 15											
	8 12 17 8 12 18 8 12 19											
	8 12 20 8 12 21 8 12 21		- 1									
	8 12 22 8 12 23 8 12 23										▙	
	8 13 1 8 13 2 8 11 2							$\perp T$	Ħ	==	1	Ħ
	E 13 5											
	B 13 7										▙	
	E 13 9 E 13 10		- 1					$\perp T$	Ħ	==	1	Ħ
	5 13 12 5 13 12 5 13 13											
	E 13 16											
	8 13 17 8 13 18		- 1									
1 3 21	E 13 20											
	8 13 22 8 13 23 13 74							\vdash	H	==	1	目
	8 14 1 8 14 2		1									
	8 14 3 8 14 4								ш		1	ш

8 14 5 8 14 6 8 14 7					
E 14 E E E E E E E E E E E E E E E E E E		1 1 1	- 1	1 1 1	
8 14 10 8 14 11 8 14 12			- 1		
B 14 13 B 14 14					
8 14 15 8 14 16		1 1 1	- 1		
8 14 17 8 14 18 8 14 19	:		- 1		
B 14 20 B 14 21		1 1 1	- 1		
8 14 22 8 14 23			- :		
8 15 25 8 15 1 2	1 : : : :				
B 15 3 B 15 4		1 1 1		1 1 1	
8 15 5 8 15 6 8 15 7		1 1 1	- 1		
8 15 7 8 15 8					
8 15 10 8 15 11		1 1 1	- :	1 1 1	
E 15 12 E 15 13 E 15 14		1 1 1	- 1	1 1 1	
8 15 14 15 14 15 15 14 15 15 15 15 15 15 15 15 15 15 15 15 15					
8 15 17 8 15 18		1 1 1	- 1		
8 15 19 8 15 20			- 1		
8 15 22 8 15 23					
8 15 24 8 15 15 24 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1			- :		
8 16 2 8 16 3					
8 16 5 8 16 6		1 1 1		1 1 1	
8 16 7 8 16 8		1 1 1	- 1	1 1 1	
E 16 10					
E 16 12 E 16 13			- :		
E 16 14 E 16 15 E 16 25					==
B 16 17 E 16 18					
E 16 19 E 16 20		1 1 1	1		${igspace}$
8 16 22 8 16 22					
E 16 24 E 17 1		1 1 1	1		
8 17 2 8 17 3 8 17 A					
B 17 5 B 17 6			1		
8 17 7 8 17 8 1 17 8					
8 17 10 8 17 11					
B 17 12 B 17 13	: : : :	1 1 1	1	1 1 1	
8 17 14 8 17 15 8 17 16					\vdash
B 17 17 18 E 17 18			- :		
E 17 19 E 17 20 E 17 2					
8 17 22 8 17 23	:				
8 17 24 8 18 1		1 1 1	- :	1 1 1	
8 18 2 8 18 3		1 1 1	- 1	1 1 1	
E 18 4 E 18 5					
8 18 5 8 18 6 9 18 7 8 18 7 8 18 8			- :		
E 18 9 E 18 10			- 1		
8 18 12 8 18 13	: : : : :	1 1 1		1 1 1	
8 18 14 8 18 15		1 1 1	- 1	1 1 1	
E 18 17 18 17 18					
E 16 19 20			- :		
8 18 22 8 18 23	:				
8 18 24 8 19 1		1 1 1	- :	1 1 1	
8 19 2 8 19 3		1 1 1	- 1	1 1 1	
E 19 5					
E 19 7			- :		
8 19 9 8 19 10	:		- 1		
8 19 12 8 19 13		1 1 1		1 1 1	
8 19 14 8 19 15		1 1 1	- 1	1 1 1	
8 19 17 8 19 18		1 1 1		1 1 1	
8 19 19 8 19 20		1 1 1	- 1	1 1 1	
8 19 21 8 19 22 8 19 23					
8 19 24 8 20 1		1 1 1	- :	1 1 1	
E 20 2 E 20 3 E 20 4			- 1		
8 20 5 8 20 6		1 1 1		1 1 1	
\$ 20 7 8 20 8 20 8					
E 20 10					\vdash
1	: : : :	1 1 1	1	1 1 1	
E 20 14 E 20 15 E 20 15					==
8 20 17 8 20 18	: : : :	1 1 1	1	1 1 1	
8 20 19 8 20 20 8 20 20 8 20 20 8 20 22 8 20 22 8 20 20 8 20 22 8 20 23 8 20 24 8 22 1 2 1					==
B 20 22 B 20 23		1 1 1			
E 21 2					oxdot
8 21 5 8 21 6			1		oxdot
8 21 8 8 21 9					
E 21 10 E 21 11		1 1 1	1		${igspace}$
8 21 12 8 21 13 8 21 14					
B 21 15 B 21 16		1 1 1	1	1 1 1	
8 21 17 8 21 18 8 21 19					==
B 21 20 B 21 21 21			1		
B 21 22 B 21 23 E 21 23			1		${igspace}$
8 22 1 8 22 2					
E 22 3 E 22 4		1 1 1	1		
1					\vdash
1 22 1 1 1 1 1 1 1 1			1		
8 22 10 8 22 11 8 27 11					
8 22 13 8 22 13					
B 22 15 B 22 16			1		
E 22 17 E 22 16 E 22 16		1 1 1	1		一目
8 22 19 8 22 20 8 22 21					
B 22 22 B 22 23	: : : : : :	1 1 1	1	1 1 1	
8 22 22 23 25 26 27 27 27 28 29 29 29 29 29 29 29 29 29 29 29 29 29					==
E 23 3 E 21 4					
B 23 5 B 23 6		1 1 1	1	1 1 1	
8 21 8 8 22 9					
8 23 9 8 23 10 8 23 11 8 23 12		1 1 1		1 1 1	
8 23 12 8 23 13 8 27 14					
8 23 14 8 23 15					
E 23 16					

E 23 37 - E 23 1E - E 23 1	1 1	:	: :	: : :					
B 23 20 -									
8 22 21 8 23 22 8 23 23 23 8 22 24 - 6 8 24 1									
E 24 3 E 26 4 E 24 5									
8 24 6 - 8 24 7			: :						
E 24 E 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5									=
8 24 11 8 24 12			:						
8 24 13 8 26 14 8 24 15			: :						
8 24 36 5 8 24 17									
8 24 18 8 24 19 8 24 20			: :						
8 24 21 8 24 22									
II 24 23 - II 24 24 24 - II 24 24 24 24 24 24 24 24 24 24 24 24 24			: :						
R 24 25 25 25 25 25 25 25 25 25 25 25 25 25									H
E 25 4			: :						
8 25 7 8 25 8									
1 25 9			: :						
8 25 11 8 25 21 8 25 22 8 25 14 8 25 14 8 25 14 8 25 15 8 25 15									
8 25 14 - 8 25 15 -			: :						
8 25 17 8 25 17									
8 25 19 - 8 25 20 -			: :						
8 25 21 8 25 22 8 25 23									
8 25 24 - 8 26 1			: :						
8 26 2 8 26 3 8 26 4								+	Ħ
8 26 5 8 26 6									
8 25 7 8 26 8 - 8 26 9									Ħ
8 26 10 8 26 11									F
8 26 12 8 26 13 8 26 14									Ħ
8 26 15 8 26 16									F
8 26 17 8 25 18 8 20 19						+		+	Ħ
8 26 20 8 26 21									F
8 26 22 8 26 23 8 26 24									Ħ
8 27 1 8 27 2									F
8 27 8 8 27 4 8 27 5									Ħ
8 27 6 8 27 7									F
8 27 8 8 27 9 8 27 10									Ħ
B 27 11 - 12 - 12 - 12 - 12 - 13 - 14 - 15 - 15 - 15 - 15 - 15 - 15 - 15			: :						
8 27 13 8 27 14 8 27 15									
B 27 16 -			: :						
8 27 18 5 27 19 5 5 27 20 5 5 27 20 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5									
B 27 21 B 27 22									
B 27 24 - B 28 1			: :						
\$ 1 2 2 2 3 4 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5									
8 28 5 8 28 6			: :						
8 28 8 8 28 9									
8 28 10 8 28 11									
8 28 13 - 14 - 14 - 14 - 15 - 14 - 15 - 15 - 15			: :						
8 28 15 - 8 28 16 -									
8 28 18 - 8 28 19 -			: :						
8 28 21 8 28 22									
8 28 23 8 28 24 -									
E 29 2			: :						
8 29 5 8 29 6									
8 29 7 8 29 8									
8 29 10 8 29 11									
8 29 12 8 29 11			: :						
8 29 15 8 29 16									
E 29 17 E 29 18 E 29 18							+	$+$ \equiv	曰
			1						
8 29 22 25 8 27 22 25 8 27 27 22 8 8 29 22 22 8 8 29 22 22 8 8 29 22 23 8 20 25 25 25 25 25 25 25 25 25 25 25 25 25						+	$+$ \mp	$+$ \mp	 Ħ
8 30 1 8 30 2			1						
E 30 3 E 30 4 E 30 5						+		+	Ħ
8 30 6 - 8 30 7									
1									Ħ
8 30 11 - 8 30 12 - 8						$+ \mp \mp$		$+\Box$	Ħ
8 30 13 8 30 14 8 30 15							\pm		
8 30 16 - 8 30 17 -						+	$+$ \mp	$+$ \mp	 Ħ
# 20 30 30 10 10 10 10 10 10 10 10 10 10 10 10 10								\blacksquare	
8 30 21 - 8 30 22 -						+	$+$ \mp	$+$ \mp	 Ħ
8 30 23 8 30 24 8 31 1									
8 31 2 8 21 3								\blacksquare	Ħ
8 31 5 - 8 31 6									Ħ
8 31 7 8 31 8							+	$+$ \equiv	Ħ
8 31 10 - 8 31 11 10 - 8 31 11 -									Ħ
8 31 22 8 31 13 1 13 14							+	$+$ \equiv	曰
8 31 15 - 8 31 16									Ħ
1									H
8 31 20 - 8 31 21 -									
8 31 22 8 31 23 8 31 24									Ħ
9 1 1 2 - 9 1 3 1 3 1 1 3 1 1 1 1 1 1 1 1 1 1 1 1									Ħ
9 1 3 9 1 4 9 1 5							\pm		Ħ
9 1 6 9 1 7 9 1 8									H
2 1 2 5 9 1 1 25 9 1 1 10 9 1 1 10 9 1 1 11 9 1 1 11 9 1 1 14 9 1 1 14 9 1 1 14			1						H
9 1 12 9 1 13									
9 1 16 - 9 1 15 -									Ħ
9 1 16 9 1 17 9 1 18									
9 1 19 - 9 1 20 - 9 1 21									H
9 1 21 9 1 22 9 1 23 9 1 23 9 1 24									H
9 2 1 9 2 2 1 1 9 2 2 2 2 1 1 1 1 1 1 1									Ħ
9 2 3									H

9 2 5 9 2 6		: :	:	-		: :	1	:	: :									
9 2 E 9 2 E																		
9 2 10 9 2 11 9 2 12				-														
9 2 13 9 2 14				1														
9 2 15 9 2 16 9 2 27				-														
9 2 18 9 2 19				1			:											
9 2 21 9 2 22																		
9 2 23 9 2 24 0 3 1				-			1											
9 3 2 9 3 3				1														
9 3 4 9 3 5				-														
9 3 7 9 3 8				1			1											
9 3 10 9 3 11				-														
9 3 12 9 3 13 0 1 14				-														
9 3 15 9 3 16				1			1											
9 3 17 9 3 18 9 3 19				-														
9 3 20 9 3 21				1			:											
9 3 23 9 3 24				-														
9 4 1				1			1											
9 4 4 5				1														
9 4 6 9 4 7				-														
9 4 9 9 4 10				1			1											
9 4 11 9 4 12 9 4 13																		
9 4 14 9 4 15				1			1											
9 4 15 9 4 15				:														
9 4 29 9 4 20 9 4 71										E	1				L	H	_+	_
9 4 23 9 4 23				-			:											
9 5 1 9 5 2																		
9 5 3 9 5 4 9 c *	=									H	#=		HT	\pm	ŧΞ	Ħ	$=$ \mp	=
9 5 5 7				:														
9 5 E 9 5 9 5 10	46									H	+		F	$+ \equiv$	ΙĪ	Ħ	=F	+
9 5 11 9 5 12																		
9 5 13 9 5 14 9 5 15										E	<u> </u>			1	Ŀ		_	
9 5 16 9 5 17 0 7																	=	
9 5 18 9 5 29 9 5 20													oxdot					
9 5 21 9 5 22 9 5 23				-														
9 5 24 9 6 1				1			1											
9 6 2 9 6 3				-														
9 6 5				1			-											
9 6 8																		
9 6 10 9 6 11 9 6 11				-														
9 6 13 9 6 34				1			1											
9 6 15 9 6 16 9 6 17																		
9 6 18 9 6 19 9 6 20				-														
9 6 21 9 6 22				1			1											
9 6 24 9 6 24 9 7 1																		
9 7 2 9 7 3				-														
9 7 5 9 7 6				1			1											
9 7 7 9 7 8 9 7 9				-														
9 7 10 9 7 11 9 7 11				1			:											
9 7 11 9 7 14																		
9 7 15 9 7 16 9 7 17				-														
9 7 18 9 7 29				1			1											
9 7 20 9 7 21 9 7 22																		
9 7 23 9 7 24				1			1											
9 8 2 9 8 3				1			1											
y										E	Ł			╧	Ŀ		_	
9 E 7 9 E 8 9 E 9										H	1				E	H	=	
9 5 10 9 5 11				:														
9 8 12 9 8 13 9 8 14										H						H	=	
9 E 15 9 E 16	3																=	
1 1 2 1 2 3 3 4 3 3 4 4 3 4 4 4 4 4 4 4 4 4 4 4				:														
9 8 20 9 8 21 9 8 22										E	1				L	H	_+	_
9 E 23 9 E 24 9 9 9 1											1 -		\vdash		Ė	H	=	
9 9 1 9 9 9 3														+			=	
1																	<u></u>	
9 9 7 9 9 8 9 9 9	46									H	+		F	$+ \equiv$	ΙĪ	Ħ	=F	+
9 9 10																		
9 9 11 9 9 9 12 9 9 13 9 9 13 9 9 13 9 9 14 9 9 16 9 9 16																	<u></u>	
9 9 25 9 9 16																	=	
9 9 19 9 9 19																		
9 9 20 9 9 21 9 9 22																		
9 9 23 9 9 24																	=	
9 9 233 9 9 344 9 100 1 9 100 1 9 100 3																		
9 10 4 9 10 5										H	$+ \equiv$		HE	ΗΞ	ŧΞ	Ħ	$=$ \mathbb{F}	
9 110 7 8 9 120 7 8 9 120 8 9 150 150 150 9 150 150 150 9 150 122 9 150 122										E								
9 10 12 9 10 13																		
9 10 14 9 10 15 9 10 15																	= [
9 10 12 17 10 18 19 10 12 19 10 12 19 10 12 19 10 12 19 10 12 19 10 12 10 12 10 12 11 10 12 1	46									H	+		F	$+ \equiv$	ΙĪ	Ħ	=F	+
9 10 20 9 10 20 9 10 21																		
9 10 23										E								
9 11 1 9 11 2 9 11 2																	=	
9 111 2 9 11 3 9 11 3 9 11 4 9 11 5 9 11 6 9 11 6																	<u></u>	
9 11 6 9 11 7 9 11 7											1 -				Ė	H	=	
9 11 9 9 11 10																		
9 11 11 9 11 12 9 11 12										E								
9 11 12 19 9 11 14 19 9 11 14 14 19 11 14 15 9 11 16 16 16 16 17 16 18 18 18 18 18 18 18 18 18 18 18 18 18				:			:											

9 11 17 9 11 18	1 1 1	: :	1 1	: :	1 1							
9 11 19 9 11 20		1 :		1 1								
9 11 22 9 11 23												
9 11 24 9 12 1		1 1		1 1								
9 12 2 9 12 3		1 1		1 1								
9 12 4 9 12 5 9 12 6		1 1		1 1								
9 12 7 9 12 8		1 :		1 1								
9 12 9 9 12 10		1 1		1 1								
9 12 11 9 12 22 9 12 13 9 12 14		1 1		1 1								
9 12 14 9 12 14 9 12 15		1 1		1 1								
9 12 16 9 12 17		1 1		1 1								
9 12 18 9 12 19		1 1		1 1								
9 12 20 9 12 21		1 1		1 1								
9 12 21 9 12 22 9 12 22 9 12 23 9 12 23 9 12 34		1 1										
9 13 1 9 13 2		1 1		1 1								
9 13 3 9 13 4		1 1		1 1								
9 13 5 9 13 6		1 1		1 1								
9 113 7 9 113 8 9 113 9 9 113 10 9 111 110		1 1										
9 11 10 9 13 11		1 :		1 1								
9 13 12 9 13 13		1 1		1 1								
9 13 14 9 13 15		1 1		1 1								
9 13 17 9 13 18		1 1										
9 13 18 9 13 19 9 13 20 9 13 20 19 13 20 9 13 22 1		1 1		1 1								
9 13 21 9 13 22		1 1		1 1								
9 13 24		1 1		1 1								
9 14 1 9 14 2 9 14 3						\vdash						
9 14 4 9 14 5				: :			=					
9 14 6 9 14 7		1 1		1 1								
9 14 E 9 14 9 9 14 10						\vdash						
9 14 11 9 14 11 9 14 12												
9 14 13 9 14 14		1 1		1 1						H	+	
9 14 15 9 14 16 9 14 27												
9 14 17 9 14 18 9 24 10						\vdash	_					
9 14 20 9 14 21		1 :		: :								
9 14 22 9 14 23		1 :		: :								
9 14 26 9 15 1 6 17 2												
9 15 3 9 15 4						\vdash						
9 15 5 9 15 6		: :		: :								
9 15 7 9 15 8												
9 15 10 9 15 11		1 1										
9 15 12 9 15 11		: :		1 1								
9 15 14 9 15 15		1 1		1 1								
9 15 16 9 15 17 9 15 28		1 1		1 1								
9 15 19 9 15 20		1 :		1 1								
9 15 21 9 15 22		1 1		1 1								
9 15 23 9 15 24		1 1		1 1								
9 16 1		1 1										
9 16 4 9 16 5		: :		1 1								
9 16 6 9 16 7		1 :		1 1								
9 16 E 9 16 9				1 1								
1												
9 16 11 9 16 14		: :		1 1								
9 16 15 9 16 16		1 :		1 1								
9 16 18 9 16 19		1 :		1 1								
9 16 20 9 16 21		1 1		1 1								
9 16 22 9 16 23		1 1		1 1								
9 17 1		1 1										
9 17 3 9 17 4		1 1		1 1								
9 17 5 9 17 6		1 1		1 1								
9 17 5		1 1		1 1								
9 17 10 9 17 11		1 :		1 1								
9 17 12 9 17 13		1 1		1 1								
9 17 14 9 17 15		1 1		1 1								
9 17 17 9 17 18						\vdash	=					
9 17 19 9 17 20		: :		: :			=					
9 17 21 9 17 22 9 17 23												
9 17 23 9 17 24 9 18 1												
9 18 2 9 18 3												
9 18 4 9 18 5		1 :		: :								
9 18 6 9 18 7 9 18 8												
9 18 9 9 18 9						\vdash	=					
9 18 11 9 18 12		1 :		: :								
9 18 13 9 18 14		1 1		1 1						H	+	
9 18 15 9 18 16 9 16 17						\vdash	=					
9 18 18 19 9 18 19 19				1								
1		1 :		1 1								
9 18 23 9 18 23 9 18 23							_					
9 19 1 9 19 2				: :			=					
9 19 3 9 19 4		:										
9 19 6 9 10 7						\vdash						
9 19 E 9				1 1								
9 19 10 9 19 11				1		\vdash		$\vdash \vdash \vdash$	\vdash	F		
9 19 13 9 19 14						\vdash						
T												
9 19 17 9 17 9 18 18 19 18 18 19 18 18 19 18 18 19 18 18 19 18 19 18 19 18 19 18 19 19 19 19 19 19 19 19 19 19 19 19 19		1 :		1 1								
9 19 20 9 10 77									-	\vdash	_	
9 19 22 9 19 23							_					
9 19 26 9 20 1		: :		: :								
9 20 2 9 20 3				1		\vdash		$\vdash \vdash \vdash$	\vdash	F		
9 20 4 9 20 5 9 20 6						\vdash	=					
9 20 8				1								
9 20 9 9 20 10		1 :		1 :								
9 20 11 9 20 12 9 20 13										\vdash	_	
8 20 11 8 20 11 8 20 11 8 20 15 8 20 15 9 20 15						\vdash						
9 20 15 9 20 17 9 20 17 9 20 17 9 20 18												
9 20 17 9 20 18 9 20 18 9 20 19				1		\vdash		$\vdash \vdash \vdash$	\vdash	F		
9 20 21 9 20 22							_					
9 20 23 9 20 24		: :		: :								
9 21 1 9 21 2		1 :		: :								
9 21 3		1 1		1 1				 			\perp	
9 21 4												

9 21 5 9 21 6 9 21 7	1 1	1 1	1 1	: :						
9 21 7 9 21 8	1 1	1 1	1 1	1 1						
9 21 10 9 21 11				1 1						
9 21 12 9 21 13	1 1	1 1	1 1	1 1						
9 21 14 9 21 15	1 1	1 1	1 1	1 1						
9 21 16 9 21 17 9 21 18		1 1		1 1						
9 21 19 9 21 20	1 1	1 1	1 1	1 1						
9 21 21 9 21 22	1 1	1 1	1 1	: :						
9 221 24 9 221 24 9 221 24 9 22 1 9 22 2 9 22 2 9 22 2	1 1	1 1	1 1	1 1						
9 22 2		1 1		1 1						
9 22 4	1 1	1 1	1 1	1 1						
9 22 6 9 22 7	1 1	1 1	1 1	1 1						
9 22 B 9 22 9	1 1	1 1	1 1	1 1						
9 22 9 9 22 10 9 22 11 9 22 12 9 22 12 9 22 21 9 22 21				1 1						
9 22 11 9 22 14	1 1	1 1	1 1	1 1						
9 22 15 9 22 16	1 1	1 1	1 1	1 1						
9 22 17 9 22 18 9 22 19	1 1	1 1	1 1	1 1						
9 22 39 9 72 20 9 72 20 9 22 21 9 22 22 9 22 22 9 22 23 9 22 23				1 1						
9 22 23 9 22 23	1 1	1 1	1 1	1 1						
9 22 24 9 23 1	1 1	1 1	1 1	: :						
9 23 2 9 23 3 9 23 4	1 1	1 1	1 1	1 1						
				1 1						
0 223 6 0 223 7 0 223 7 0 223 8 0 221 9 0 221 9	1 1	1 1	1 1	1 1						
9 23 9 9 23 10	1 1	1 1	1 1	1 1						
9 21 11	1 1	1 1	1 1	1 1						
9 23 13 9 23 14 9 23 15								\vdash		=
9 23 16 9 23 17										\blacksquare
9 23 18 9 23 19	1 1	1 1								$\pm \Box$
9 23 20 9 23 21 9 23 22							-		+	\pm
9 23 21 9 23 21 9 23 24										
9 24 1 9 24 2	1 1	1 1				+		$+$ \mp	$+$ \mp	$\pm \exists$
9 24 4 9 24 4							\rightarrow			+
9 24 6 9 24 7					-			\vdash		+
9 24 E 9 24 9	1 1	1 1								
9 24 10 9 24 11							+	\Box		1
9 24 12 9 24 13 9 34 14									+	+
9 24 15 9 24 15								\vdash		+
9 24 17 9 24 18										
9 24 19 9 24 20 9 14 21							+		+	# 7
9 24 22 9 24 23				1 1						
9 24 24 9 25 1	1 1	1 1	: :	1 1						
9 25 1 9 25 2 9 25 2 9 25 3 9 25 3 9 25 5	1 1	1 1	1 1	1 1						
9 25 4	1 1	1 1	1 1	1 1						
9 25 6 9 25 7 9 25 8	1 1	1 1	1 1	1 1						
9 25 9	1 1	1 1	: :	: :						
9 25 11 9 25 12 9 25 13 0 27 14	1 1	1 1	1 1	1 1						
9 25 14				1 1						
1	1 1	1 1	: :	: :						
9 25 18 9 25 19	1 1	1 1	1 1	1 1						
9 25 20 9 25 21		1 1	1 1	1 1						
9 25 23 9 25 24				1 1						
9 26 1 9 26 2	1 1	1 1	1 1	1 1						
9 26 1 9 26 4	1 1	1 1	1 1	1 1						
9 26 6 9 26 7	1 1	1 1	1 1	1 1						
9 26 B 9 26 9	1 1	1 1	1 1	: :						
9 26 10 9 26 11	1 1	1 1	1 1	1 1						
9 26 11 9 26 14				1 1						
9 26 15 9 26 16	1 1	1 1	1 1	1 1						
9 26 17 9 26 18	1 1	1 1	1 1	1 1						
9 26 20 9 26 21		1 1		1 1						
9 26 22 9 26 23	1 1	1 1	1 1	1 1						
9 26 24 9 27 1	1 1	1 1	1 1	1 1						
9 27 2 9 27 3	1 1	1 1	1 1	1 1						
9 27 5 9 27 5					-			\vdash		+
9 27 7 9 27 E										\blacksquare
9 27 9 9 27 10 9 27 11										$\pm \Box$
9 27 12										\perp
9 27 14 9 27 15										
9 27 16 9 27 17							+	\Box		1
9 27 18 9 27 29 19 9 9 19 19 19 19 19 19 19 19 19 19 1									+	+
9 27 21 9 27 22					-			\vdash		+
9 27 23 9 27 24										
9 28 1 9 28 2	1 1	1 1				+		$+$ \mp	$+$ \mp	$\pm \exists$
1										\perp
9 28 6 9 28 7										
1							\bot	\Box		1
9 28 10 9 28 11									+	+
9 28 12 9 28 13 9 28 14								\vdash		+
9 28 15 9 28 16										
9 28 17 9 28 18	1 1	1 1				+		$+$ \mp	$+$ \mp	$\pm \exists$
9 28 20 9 28 20					-					+
9 28 22 9 28 23										
9 28 24 9 29 1 9 9 29 1							+		+	# 7
9 29 1 9 29 4					-			\vdash		+
9 29 5 9 29 6										\blacksquare
9 29 7 9 29 8					-			\vdash		$+ \exists$
9 29 9 9 29 10					-			\vdash		=
9 29 12 9 29 13										
9 29 14 9 29 15										
9 29 16 9 29 17		1					$+$ \top	$+$ \top	$+$ \top	$+ \exists$
9 29 20							\perp			
9 29 22										\blacksquare
9 29 23 9 29 24					\rightarrow		$+$ Γ	\vdash		$+ \exists$
9 30 1 9 30 2 9 30 3					-			\vdash		=
9 30 4										\pm
9 30 5 9 30 6 9 30 7							\Box			
9 30 E 9 30 9							+		+	# 7
9 30 11 9 30 12					-			\vdash		+
9 30 12 9 30 13					-			\vdash		+
9 30 15		1 1		1						
9 30 16										

9 30 17 9 30 18 9 30 29			1 1		1 1					
9 30 20 9 30 21 9 30 22		1 1	1 1		1 1					
9 30 23 9 30 24	1 1 1 1	1 1	: :	: :	: :					
10 1 1 10 1 2 10 1 3										
10 1 4 10 1 5 10 1 6										
10 1 7 10 1 8 10 1 9										
10 1 20 10 1 11 10 1 12		1 1	1 1		1 1					
10 1 13 10 1 14										
10 1 15 10 1 1 16 10 1 1 17										
10 1 18 10 1 19 10 1 20										
10 1 21 10 1 22 10 1 23		1 1	1 1	1 1	1 1					
10 1 24 10 2 1	1 1 1 1	1 1	: :	: :	: :					
10 2 2 10 2 3 10 2 4										
10 2 5 10 2 6 10 2 7										
10 2 8 10 2 9		1 1	1 1	: :	1 1					
10 2 11 10 2 12										
10 2 11 10 2 14 10 2 15										
10 2 16 10 2 17 10 2 18										
10 2 19 10 2 20 10 2 30		1 1	1 1	: :	1 1					
10 2 22 10 2 22										
10 2 24 10 3 1 10 3 2										
10 3 3 10 3 4 10 3 5										$+ \exists$
10 3 6 10 3 7		1 1	1							
10 2 8 10 3 9 10 3 20			1							
10 3 11 10 3 12 10 3 13			1							
10 3 14 10 10 3 15 10 10 3 15 15 10 10 10 10 10 10 10 10 10 10 10 10 10										
10 1 17 10 2 18										
10 1 19 10 3 20 10 3 21			1 1							
10 3 22 10 3 23 10 3 24										$+ \exists$
10 4 1 10 4 2			1 1	1 1						\blacksquare
10 4 4 1 10 4 5			1 1							
10 4 6 10 4 7 10 4 8										
10 4 9 10 4 10			1 1		1 1					
10 4 12 10 4 13	1 1 1 1	1 1	: :	: :	: :					
10 4 15 10 4 15 10 4 16										
10 4 17 10 4 18 10 4 19										
10 4 20 10 4 21 10 4 21			1 1		1 1					
10 4 23 10 4 24	1 1 1 1	1 1	: :	: :	: :					
10 5 1 10 5 2 10 5 3										
10 5 4 10 5 5 10 5 6										
10 5 7 10 5 8			1 1							
10 5 10 10 5 11		1 1	: :	: :	1 1					
10 5 12 10 5 13 10 5 14										
10 5 15 10 5 16 10 5 17										
10 5 1E 10 5 19			1 1							
10 5 21 10 5 22	1 1 1 1	1 1	: :	: :	: :					
10 5 24 10 5 34 10 6 1										
10 6 2 10 6 3 10 6 4										
10 6 5 10 6 6 10 6 7			1 1		1 1					
10 6 B	1 1 1 1	1 1	: :	: :	: :					
10 6 10 10 6 11 10 6 12										
10 6 13 10 6 14 10 6 15										
10 6 16 10 6 17			1 1							
10 6 19 10 6 20	1 1 1 1	1 1	: :	: :	: :					
10 6 21 10 6 22 10 6 23 10 6 23 10 6 24										
10 7 1										ΗĪ
10 7 3 10 7 4 10 7 4										
10 7 6 10 7 7			1 1							
1			1							
10 7 11 10 7 12 10 7 13										
10 7 14 10 7 15 10 7 **										
10 7 17 10 7 18 10 7 18		1								
10 7 19 10 7 20 10 7 21			1 1							
10 7 22 10 7 23 10 7 24										
10 B 1 10 B 2 10 B 2 10 B 3							$+ \top$		$+ \mp$	+ = 1
10 8 3 10 8 4 10 8 5 10 8 5 10 8 6										
10 E 7										
10 E 9 10 E 10 10 S 11										
10 E 12 10 E 13 10 E 14										
10 8 13 10 8 14 10 8 15 10 8 35 10 8 16		1 1	1							
10 E 18 19 10 E 19			1							+
10 E 20 10 E 21 10 E 21			1 1			$+$ \mp				$+ \equiv$
10 8 22 10 8 23 10 8 24										
10 E 24 10 9 1 10 9 2 10 9 2			1 1							
10 9 6										目
							$+ \top$		$+ \mp$	+ = 1
100 9 8 8 100 100 100 100 100 100 100 100 100		1 1								H
10 9 12 10 9 13 10 9 14										
10 9 17 10 9 18 10 9 19 10 9 20										
10 9 20 10 9 21 10 9 22 10 9 22		1 1	1							
10 9 24 10 10 10 1			1 1							
10 10 2 10 10 3										

10 10 5 10 10 6	:	: :	- :	:	: :	- 1								
10 10 E														
10 10 10 10 10 10 10 10 10 10 11 10 10 1			- 1											
10 10 13 10 10 14			- 1											
10 10 15 10 10 15 10 10 17														
10 10 1E 10 1E 10 19	1		- 1	1		: =								
10 10 20 10 10 21 10 10 22			- 1			- 1								
10 10 23 10 10 24			- 1	:		- 1								
10 11 1 10 11 2 10 11 3	1		- 1	1		1								
10 11 4 10 11 5 10 11 6			- 1											
10 11 6 10 11 7	1		- 1	1		1								
10 11 9 10 11 10														
10 11 11 10 11 12 10 11 13	1		- 1	1		- 1								
10 11 13 13 13 10 11 14 14 15 16 17 17 17 17 17 17 17 17 17 17 17 17 17			- 1											
10 11 16 10 11 17 10 11 18 11 18	1		- 1	1		- 1								
10 11 19 10 11 20														
10 11 21 10 11 22	:		- 1	:		- 1								
10 11 23 10 11 23 10 10 11 24			- 1			- 1								
10 12 2 10 12 3	:		- 1	1		- 1								
10 12 4 10 12 5 10 12 6			- 1			- 1								
10 12 7 10 12 8			- 1	- :		1								
10 12 9 10 12 10 10 12 11			- 1	-										
10 12 12 10 12 13			- 1	- :		1								
10 12 14 10 10 12 15 10 10 12 16												\vdash	_	=
10 12 17 10 12 17	1		:	:		:								
10 12 19 10 12 20 10 12 21														=
10 12 22 10 12 22 10 12 23	1													
10 12 24 10 13 1 10 13 7												H		
10 13 3 10 13 4	- 1													
10 13 5 10 13 6 10 13 7												H		
10 13 E 10 13 9	- :		- 1	- :										
10 13 20 10 13 11 10 13 17												H		
10 13 13 13 10 10 11 14	- 1													
10 13 15 10 13 16 10 13 17												H		
10 13 18 10 10 13 19	- 1													
10 13 20 10 13 21 10 13 27												H		
10 13 23 10 13 24	:		- 1	1		1								
10 24 1 10 14 2 10 14 3			- 1											
10 14 4 10 14 5 10 14 6	1		- 1	1		1								
10 14 7 10 14 8			- 1			- i -								
10 14 9 10 14 10			- 1			- 1								
10 14 12 10 14 13	:		- 1	:		: -								
10 14 15 10 14 15			- 1											
10 14 17 10 14 18	:		- 1	:		- 1								
10 14 19 10 14 20 10 14 21			- 1											
10 14 22 10 14 23	:		- 1	:		: =								
10 15 1 10 15 2			- 1											
10 15 3 10 15 4 10 15 5														
10 15 6 10 15 7	:		- 1	:		1								
10 15 8 10 15 9 10 15 10			- 1											
10 15 11 10 15 12	:		- 1	:		: =								
10 15 14 10 15 15 15			- 1			- i -								
10 15 16 10 15 17			- 1			- 1								
10 15 19 10 15 20			- 1	:		- 1								
10 15 21 10 15 22			- 1											
10 15 24 10 16 1	:		- :	1		1								
10 16 2 10 16 3 10 16 4			- 1											
10 16 5 10 16 6	:		- 1	:		- 1								
10 16 7 10 16 8 10 16 9											Ŀ		==	\pm
10 16 10												Ħ	=	=
10 16 10 10 10 10 10 10 10 10 11 10 11 10 11 16 12 11 10 16 11 11 10 16 11 11 10 16 14														
10 16 15 10 16 16 17 10 16 17							$+$ \mp			+ $=$	ŧ	Ħ	1	=
10 16 18 10 16 19														
12 13 11 12 13 13 13 13							+	ÞΤ	$=\downarrow$	$+$ \equiv	ŧΞ	H	- [Ħ
10 16 23 10 16 24	1													
10 17 2												₽₽		
10 17 4 10 17 5	- 1											Ħ	=	=
10 17 4 10 17 4 10 17 5 10 17 5 10 17 5 10 17 7 10 17 7 10 17 3 10 17											Ŀ		==	\pm
10 17 9 10 17 10	1													
10 17 11 10 17 12 10 17 13												H		
10 17 18 1 19 17 18 1 10 18 1 10 18 1 18 1			:	:		: -								
10 17 16 10 17 17 10 17 18														=
10 17 19 10 17 20	-		- 1	- :										
10 17 21 10 17 22 10 17 23														=
10 17 24 10 18 1	- :		- 1			1								
10 18 3 10 18 4							$\perp \perp \perp$							
1							$+$ \top	H		+ $=$	H	H	=E	Ħ
10 18 8 10 18 9	- :			:										
10 18 10 10 18 11 10 18 17														
10 18 13 14 14	- :			:										
10 18 15 10 18 16 10 18 17											Ħ			± 1
10 18 18	- :		- 1											
12 12 1 1 1 1 1 1 1														
10 18 23 10 18 24 10 10 1														
10 19 2 10 19 3	- :			:										
10 19 4 10 19 5 10 19 6											Ŀ		_	\pm
10 19 7 10 19 8														
10 19 9 10 10 10 10 10 10 10 10 11 10 11 11 11	- :			:										
10 19 12 10 19 11 10 19 14												H		
10 19 15 16 10 10 16											E			

10 19 17 10 19 1E 10 19 19	: :	:	1 1	: : :						
10 19 20 10 19 21										
10 19 22 10 19 23 10 19 24										
10 20 1 10 20 2										
10 20 3 10 20 4 10 20 5										
10 20 6 10 20 7	: :		1 1							
10 20 E 10 20 9 10 20 10										
10 20 11 10 20 12	: :		: :							
10 20 13 10 20 14 10 20 15										
10 20 16 10 20 17										
10 20 18 10 20 19 10 20 20	1 :		1 1							
10 20 21 10 20 22										
10 20 23	1 :		1 1							
30 20 26 24 1 1 1 1 1 2 2 2 2 4 2 2 2 2 2 2 2 2										
10 21 4 10 21 5	1 :		1 1							
10 21 7 10 21 8										
10 21 9	: :		: :							
10 21 11 10 21 12 10 21 13 10 21 13 10 21 14 10 21 15										
10 21 14 10 21 15	: :		1 1							
10 21 16 10 21 17 10 21 18										
10 21 19 10 21 20	: :		1 1							
10 21 21 10 21 22 10 21 22										
10 21 24 10 22 1	: :		: :							
10 22 2 10 22 3						+	\rightarrow			+
10 22 4 10 22 5 10 22 6										
10 22 7 10 22 B 10 22 9										+
10 22 10 10 10 22 11			1				=			
10 22 12 10 22 13 10 22 14						+				$\pm \pm 1$
10 22 15 10 22 16			1 1				=			
10 22 17 10 22 18 10 22 16						+				$\pm \pm 1$
10 22 20 10 22 21			1 1				=			
10 22 22 10 22 23 10 22 34										+
10 23 1 10 23 2			1 1							
10 23 3 10 23 4 10 71 7					$++\mp$	+	$=$ $+$ \mp	=	= $ $ =	ฮ
10 23 6 10 23 7			1							
10 23 E 10 23 9 10 71 10					$++\mp$	+	$=$ $+$ \mp	=	= $ $ =	ฮ
10 23 11 10 23 11										
10 23 13 10 23 14	1 :		1 1							
10 23 16 10 23 17										
10 23 18 10 23 19 10 23 20 10 23 20										
10 23 21 10 23 22	: :		1 1							
10 23 23 10 23 24 10 24 1										
10 24 2 10 24 3	: :		: :							
10 24 5 10 24 5										
10 24 7 10 24 8	1 :		1 1							
10 24 10 10 24 11	: :		1 1							
10 24 12 10 24 13 10 24 14										
10 24 15 10 24 16	1 :		: :							
10 24 18 10 24 19										
10 24 20 10 24 21 10 24 21										
10 24 23 10 24 26	: :		1 1							
10 25 2 10 25 3										
10 25 4 10 25 5	1 :		1 1							
10 25 7 10 25 8										
10 25 9 10 25 10	1 :		1 1							
10 25 12 10 25 13										
10 25 14 10 25 15 10 25 16										
10 25 17 10 25 18			1							
10 25 19 10 25 20 10 25 21					$++\mp$	+	$=$ $+$ \mp	=	==	ฮ
			1							
10 26 1					$++\mp$	+	$=$ $+$ \mp	=	==	ฮ
10 26 4			1 1				=			
10 26 5 10 26 6 10 26 7										+
10 26 6 1 10 10 26 10 10 10 10 10 10 10 10 10 10 10 10 10			1							H
10 26 10 10 26 11 10 26 11			: :							\pm
10 26 14 10 26 15			1 1		\vdash	$+ \mp =$				丰
10 26 15 10 26 16 10 26 17										
10 25 18 10 26 19			1			+	\rightarrow			+
10 26 21 10 26 22										
10 26 23 10 26 24 10 27 1			1		++=	+	$\dashv \exists$	=		$+ \exists$
10 27 1 10 27 2 10 27 3										
10 27 4 10 27 5 10 27 5					$++\mp$	+	$+$ \mp	=	-1-	丰
10 27 7 10 27 8										
10 27 9 10 27 10 10 77 11					$++\mp$	+	$=$ $+$ \mp	=	= $ $ =	ฮ
10 27 12 10 27 13			1 1				=			
10 27 14 10 27 15 10 27 16										+
1			1 1				=			
10 27 19 10 27 20 10 10 27 21			: :							\pm
10 27 22 10 27 23			1							H
10 27 26 10 28 1 10 28 7										+
10 28 3 10 28 4			1							
10 28 5 10 28 6 10 28 7										H
10 28 7 10 28 8 10 28 9 10 28 9 10 28 20 10 28 20 10 28 11 10 28 11 10 28 12 10 28 11 10 28 12			1		\vdash	$+ \mp =$				丰
12 2 2 1 1 1 1 1 1 1			1				=			
10 28 13 10 28 14 10 28 15										+
10 28 15 10 28 16 10 28 17			1				=			
10 28 18 10 28 19 10 28 20										+
10 28 20 10 28 21 10 28 22 10 28 22			1 1		\vdash	$+ \mp =$				ฮ
10 28 24 10 10 29 1			1							
10 29 2 10 29 3						+ $=$ $=$				$+ \equiv$

10	29 5 29 6 29 7		:	: :	 :	: :	:								
10 10	29 E 29 9														
10 10	29 10 29 11 29 12														
10	29 13 29 14		:		:		: =								
10 10	29 15 29 16 29 17				1										
10 10	29 18 29 19		:		:		: =								
10 10	29 20 29 21 29 22														
10 10	29 23 29 24 30 1 30 2	i i i i	:		:		- 1								
10 10	30 1 30 2 30 3		1		1										
10 10	30 4 30 5	i i i i	:		:		- 1								
10 10	30 6 30 7 30 8		1		1										
10 10 10	30 9 30 10														H
10 10	30 9 30 10 30 11 30 11		:		1		1								
10 10 10	30 13 30 14 30 15														
10 10	30 16 30 17		:		1										
10 10 10	30 18 30 19 30 20														
10 10	30 20 30 21 30 22 30 22 30 23		:		1										
10 10	30 23 30 24		1		1		- 1								
10 10	31 2 31 3		1		1		- :								
10 10	31 4 31 5 31 6		1		1		- 1								
10 10	31 7 31 8														H
10 10	31 9 31 10		:		1		1								
10 10	31 12 31 13														
10 10	31 14 31 15	1 1 1 1			- :									1	Ħ
10 10 10	31 16 31 17 31 18											\vdash			Ħ
10 10	31 19 31 20														
10 10	31 21 31 22 31 23											HĪ	= -		H
10 11	31 24 1 1				:								==		
11 11	1 2 1 3 1 4											=	= -		H
11 11	1 5 1 6												Œ		
11	1 7 1 E											$+ \exists$	_	=	$+ \exists$
11 11	1 10 11 11		-		-								_+		Ħ
11	1 12 1 13												=		Ħ
11 11 11	1 14 15 15 1 16														H
11 11	1 17 18 1				1										
11 11	1 19 1 20		1		1										
11 11	1 22 1 23		:		:		: =								
11 11	1 24 2 1		1		1		- 1								
11 11	2 3 2														
11 11	2 5		- :		- :		- 1								
11	2 B														
11 11	2 10		:		1		: =								
11 11 11	2 12 2 13 2 14				1										
11 11	2 15 2 16		:		1		1								
11 11	2 17 2 18 2 19				1										
11 11	2 20 2 21				:		: =								
11 11	2 22 2 23 2 34				1										
11 11	3 1 3 2				:		: =								
11 11	3 3 3 4				1										
11 11	3 6 3 7				:		: =								
11 11	3 E		1		1		- 1								
11 11	3 11 3 12														H
11 11	3 11 1 14		1		1		- 1								
11 11	3 15 3 16 3 17														H
11 11	3 18 3 19		1		1		1 -								
11 11	3 21 3 22														
11 11	1 21 1 24		1		1		1 -								
11 11	4 1 4 2 4 3														
11	4 4											$+ \exists$	_	=	H
11 11	4 7 4 E		-		-								_+		Ħ
11	4 9 4 10 4 11											$+ \exists$	_	=	H
11 11	4 11 4 12 4 13		-		-								_+		Ħ
11	4 14 4 15 4 16											$+ \exists$	_	=	H
11 11	4 16 4 17 4 18		-		-								_+		Ħ
11 11	4 19 4 20 4 21		- :		-			$+$ \top			$+ \top$	Ħ	$=$ \mathbb{F}	#=	Ħ
ii ii	4 22 4 23														Ħ
11	4 24 5 1 5 2													1	Ħ
11 11	5 2 5 3 5 4		-		-										Ħ
11 11	5 5 5 6 5 7		- :		-							=	= -		H
11 11	5 7 5 8 5 9		-		-										Ħ
11	5 10 5 11 5 12						1	$+$ \top			$+ \top$	Ħ	$=$ \mathbb{F}	#=	Ħ
11 11	5 11 5 12 5 13 5 14		-		-										Ħ
11 11	5 15 5 16 5 17							$+$ \top			$+ \top$	Ħ	$=$ \mathbb{F}	#=	Ħ
11 11	5 17 5 18 5 19														
11	5 20 5 21											H	===		Ħ
11 11	1														
11	6 1 6 2												=		Ħ
11 11 11	6 1 6 4 6 5											H	=+		H
11 11	6 5 6 6 7 7 6 8 6 9 6 10 6 11	1 1 1 1			- :										
11 11 11	6 9 6 10											\vdash			Ħ
11 11	6 11 6 12				1										
11 11	6 13 6 14 6 15											=	= -		H
11 11	6 16 6 17												==		H
11 11	6 18 6 19 6 ~~		- :		-							=	= -		H
11 11	6 21												==		
11	6 23 6 24 7 1 7 2 7 2 7 3								$=$ \mp	 \vdash	\vdash	H	-F	\pm	Ħ
11 11	7 2 7 3		-		-										Ħ
11 11	7 4 7 5													1	Ħ
11 11 11	7 5 7 8											H	=+		H
11	7 9 7 10													1	Ħ
11 11	7 12 7 13		-		-								_+		Ħ
11	7 14 7 15				:								==		

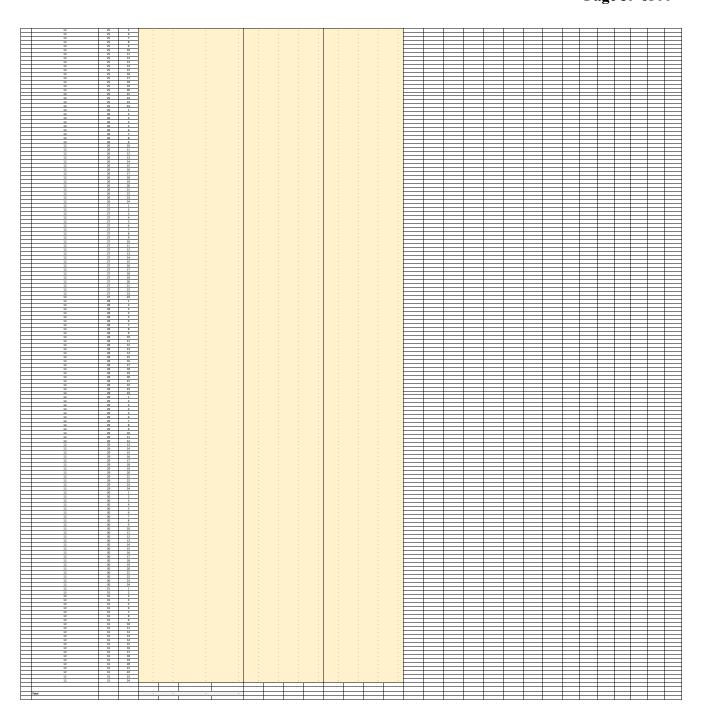
11 7 17 11 7 18		1 1	: :	1 1	: :					
11 / 19 11 7 20 11 7 21										
11 7 22 11 7 23		E E								
11 S 1 11 S 2		1 1	1 1	1 1	: :					
11 B 2 11 B 4 11 B 5		1 1			- i i i					
11 8 6 11 8 7		1 1	1 1	1 1	i i					
11 8 9 11 8 10										
11 8 11 11 8 12		E E			- i i					
11 S 14 11 S 15		1 1	1 1	1 1	: :					
11 B 16 11 B 17 11 B 18		1 1			- i - i =					
11 8 19 11 8 20		1 1	: :	1 1	: :					
11 8 22 11 8 22 11 8 23										
11 B 24 11 9 1 11 9 2		E E	1 1							
11 9 1 11 9 4	1 1 1 1	1 1	1 1	1 1	1 1					
11 9 5 11 9 6										
11 9 E		1 1	1 1	1 1	i i					
11 9 11 11 9 12										
11 9 13 11 9 14		E E								
11 9 16 11 9 17		1 1	: :	1 1	- : :					
11 9 18 11 9 19 11 9 20										
11 9 21 11 9 22		1 1	1 1	1 1	1 1					
11 9 24 11 10 1										
11 10 2 11 10 3		1 1	1 1	1 1	1 1					
11 10 5 11 10 5			1 1							
11 10 7 11 10 8 11 10 0										\pm
11 10 10 10 11 11 10 11 11 10 11 11 10 11 11			1		- E					\equiv
11 10 13 11 11 10 14			1 1							
11 10 15 11 10 16 11 10 17							+	=		$\pm \overline{}$
11 10 18 11 10 19		1 1	1 1		1					
11 10 20 11 10 21 11 10 22										
11 10 23 11 10 24 11 11 11 1			1 1							\pm
11 11 2 11 11 3			1 1	1	: i i					
11 11 4 11 11 5 11 11 6			1 1							
11 11 7 11 11 11 8		1								
11 11 10 11 11 10										
11 11 12 11 11 13 11 11 14		E E								
11 11 15 11 11 15										
11 11 17 17 18 11 18 11 11 11 19 11 19		1 1			- i - i =					
11 11 20 11 11 21		1 1	1 1	1 1	1 1					
11 11 22 11 11 23 11 11 26										
11 12 1 11 12 2 11 12 3		1 1			- i i i					
11 12 4 11 12 5	1 1 1 1	1 1	1 1	1 1	1 1					
11 12 6 11 12 7 11 12 8										
11 12 9 11 12 10 11 12 11		E E								
11 12 12 11 12 13	1 1 1 1	1 1	1 1	1 1	1 1					
11 12 14 11 12 15 11 12 16										
11 12 17 11 12 18		1 1	1 1	1 1	i i					
11 12 19 11 12 20 11 12 21										
11 12 22 11 12 23 11 12 24										
11 13 1 11 13 2		: :	1 1	: :	: :					
11 13 3 11 13 4 11 13 5			1 1							
11 13 6 11 13 7		1 1	1 1	1 1	1 1					
11 13 9 11 13 10		1 1	1 1	1 1	: :					
11 13 11 11 13 12										
11 13 14 11 13 15 11 13 16		1 1	1 1	1 1	: :					
11 13 17 11 13 18			1 1							
11 13 19 11 13 20 11 13 21										\vdash
111 123 221 121 121 121 121 121 121 121		1 1	1 1		1					
11 14 2			1 1							
11 14 4 11 14 5										\vdash
11 14 5 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1		1 1	1 1							
11 14 9 11 12 14 10			1 1							
11 14 11 11 14 12 11 14 13			1 1							
11 14 14 14 15 11 12 14 15 15 16 16 16 16 16 16 16 16 16 16 16 16 16		1 1	1 1			\Box				\equiv
10										
11 14 19 11 11 14 20 11 14 21			1 1							
11 14 22 22 11 11 14 23 11 11 11 14 23 11 11 14 23 11 11 11 14 11 11 11 11 11 11 11 11 11		1 1	1 1				$+ \top$		+T	=
11 15 1 11 15 2			1 1							
11 15 3 11 15 4 11 15 5		i i	1 1							
11 15 6 11 15 7		1 1	1		- i -					\equiv
11 15 E 11 15 9 11 15 10										
11 15 11 15 11 15 11 15 11 15 11 15 11 15 12 15 15 15 15 15 15 15 15 15 15 15 15 15							+	=		$\pm \overline{}$
11 15 14 11 15 15 15		1 1	1 1	1 :	: :					
11 15 16 11 15 17 11 15 18										
11 15 19 11 15 20 11 11 15 20 11 11 15 21			1 1							\pm
11 15 22 11 15 22										
111 15 22 23 111 15 24 24 111 15 25 24 11 11 11 11 11 11 11 11 11 11 11 11 11							$+ \top$		+T	=
11 16 3 11 16 4										\pm
11 16 5 11 16 6 11 16 7										
11 16 E		1								
11 15 5 8 11 15 9 11 15 9 11 15 15 10 11 15 15 11 11 15 15 11 11 15 15 12 11 15 15 12 11 15 15 14 11 15 15 14										
11 16 13 11 16 14 11 16 15			1 1				+	=		$\pm \overline{}$
11 16 15 15 11 16 16 11 11 11 16 11 11 11 16 11 11			1 1							
11 16 18 11 16 19			1 1							
11 16 20 11 16 21 11 16 22 11 16 22		1 1	1		- i -					\equiv
11 15 23 11 16 24 11 17 1										
11 17 2 11 17 3 11 17 4			1 1							\pm

11 17 5 11 17 6 11 17 6		- :	: :	÷	: :	: :									
11 17 B 11 17 9															
11 17 10 11 17 11 11 17 11 11 17 12		1		- 1		1 1									
11 17 13 11 17 14				1											
11 17 15 11 17 16 11 17 17				-											
11 17 18 11 17 19	1 1 1	:		1		: :									
11 17 20 11 17 21 11 17 21		1		-											
11 17 23 11 17 24		:		1		: :									
11 18 1 11 18 2		1		1		: :									
11 18 2 11 18 3 11 18 3 11 18 4 11 18 5 11 18 5 11 18 6															
11 18 6 11 18 7 11 18 8		1		1		: :									
11 18 8 11 18 9 11 18 10															
11 18 11 11 18 12		1		1		: :									
11 18 18 11 11 11 11 11 11 11 11 11 11 1															
11 18 16 11 18 17				1		: :									
11 18 19 11 18 20															
11 18 21		1		1		: :									
11 18 23 11 18 24 11 19 24 11 19 24 11 19 2 2 11 19 2 2 11 19 2 4				-											
11 19 2 11 19 3		1		1		: :									
11 19 4 11 19 5 11 19 6				-											
11 19 7 11 19 8		1		1		: :									
11 19 9 11 19 10 11 19 11				-											
11 19 12 11 19 13		1		1		: :									
11 19 14 11 19 15 11 19 16				-											
11 19 17 11 19 18		:				: :									
11 19 19 11 19 20 11 19 21						1 1								_	+
11 19 22 11 19 23		1													=
11 19 24 11 20 1 11 20 2						1									+
11 20 3 11 20 4		1				1 1									=
11 20 5 11 20 6 11 20 7						1									+
11 20 E															
11 20 10 11 20 11 11 20 12						1									+
11 20 13 11 20 14		1				1 1									=
11 20 15 11 20 16 11 20 17						1									+
11 20 18 11 11 20 19		1				1 1									=
11 20 20 11 20 21 11 20 22				-											
11 20 23 11 20 24		1		1		: :									
11 21 2 11 21 2 11 21 3															
11 21 4		1		1		1 1									
11 21 5 11 21 6 11 21 7 11 21 8				1											
11 21 9 11 21 10		1		-		: :									
11 21 12 11 21 13		1		1		: :									
11 21 15 11 21 15 11 21 16															
11 21 17 11 21 18		1		1		: :									
11 21 20 11 21 20 11 21 21															
11 21 22 11 21 23				1		: : E									
11 22 1 11 22 2				1											
11 22 3 11 22 4 11 22 5				-											
11 22 6 11 22 7		1		1		1 1									
11 22 8 11 22 9 11 22 10															
11 22 11 11 22 12		1		1		: :									
11 22 14 11 22 15		:		1		: :									
11 22 16 11 22 17 11 22 18				-											
11 22 19 11 22 20		1		1		: :									
11 22 21 11 22 23				-											
11 22 26 11 23 1		1		1		: :									
11 23 2 11 23 3															
11 23 5 11 23 6				1		: :									
11 23 7 11 23 8 11 23 9												Ŀ	H		
11 23 10		1				1								==	
11 23 13 11 23 14												Ŀ	H		
11 23 15 11 23 16 11 23 17						1					$+$ \top	1	H	==	=
23 1/ 11 23 18 11 23 19															
11 22 13 13 13 13 13 13 13 13 13 13 13 13 13						1					$+$ \top	1	H	==	=
11 23 23 11 11 23 24 26		1													\blacksquare
11 24 2 11 24 3						1	$=$ \exists	$=$ \mp	$=\downarrow$	HE	+	ŧΞ	H		$+ \exists$
11 24 4 11 24 5		1													=
21 24 6 11 24 7 21 24 8						1		_				Ŀ	H		
11 24 9 11 24 10		1													=
11 26 11 11 24 12 11 28 13						1 1								_	
11 24 14 15 11 24 15		:				: :									
11 24 16 11 24 17 11 24 18														_	
11 24 19 11 24 20		- :				1 1									
11 28 21 11 24 22 11 24 23														_	
11 24 24 11 11 25 1 1						E									
11 2 1 11 2 4															
11						: :E								==	Ŧ
11 2 7 11 2 9															
11 25 10 11 25 11 11 × 17						:	=7	=			$+ \mathbb{T}$	ŧΞ	Ħ	$=$ \mathbb{F}	$+ \exists$
11 25 11 11 25 14		1													\blacksquare
11 25 15 11 25 16 11 25 17						1		_					ЕÐ		
11 25 16 11 25 19		1				1 1								==	
111															
11 25 21 21 11 25 22 22 11 11 25 22 22 11 11 25 23 23 11 11 25 24 11 11 26 11 11 26 11 11 26 11 11 26 12 24 11 11 26 12 26 2						1	=7	=			$+ \mathbb{T}$	ŧΞ	Ħ	$=$ \mathbb{F}	$+ \exists$
11 25 3															\blacksquare
11 26 4 11 26 5 11 26 6						1									+
11 26 7 11 26 8						E									
11 25 9 11 26 10 11 26 11															
11 26 12 11 26 13 11 7% 14						1	$=$ \exists	$=$ \mp	$=\downarrow$	HE	+	ŧΞ	H		$+ \exists$
11 26 15 11 11 26 15												Ŀ	H		

11 26 17 11 26 18	1 1	: :		- :	1								
11 26 19 11 26 20 11 26 21													
11 26 22 11 26 23	1 1		1		:								
11 27 1 11 27 2													
11 27 3 11 27 4	1 1		1		- :	- 1							
11 27 6 11 27 7	1 1		1		:								
11 27 8 11 27 9 11 27 10													
11 27 11 11 27 12	1 1		1		:								
11 27 18 11 27 14 11 27 15													
11 27 16 11 27 17	1 1		:		:	- : =							
11 27 18 11 27 29 11 27 20													
11 27 21 11 27 22	1 1				1	: =							
11 27 28 11 27 24 11 28 1													
11 28 2 11 28 3 11 28 4					1								
11 28 5 11 28 6 11 28 7	1 1		:		:								
11 28 7 11 28 8					-								
11 28 10 11 28 11	1 1		:		:								
11 28 12 11 28 13 11 28 13 11 28 14 11 28 15													
11 28 15 11 28 16	1 1		:		:								
11 28 17 11 28 18 11 28 19													
11 28 20 20 21 21 21 28 21 21 21 28 22 22													
11 28 23 11 28 24	1 1				:								
11 29 1 11 29 2 11 29 3					-								
11 29 4 11 29 5	1 1		1		:								
11 29 6 11 29 7 11 29 8													
11 29 9 11 29 10 11 29 11			1				ŧΞ	=	H	= =	+	F	+
11 29 11 11 29 12													=
11 29 14 11 29 15 11 29 16												H	+
11 29 17 11 29 18	1												\blacksquare
11 29 19 11 29 20 11 29 21													
11 29 22 11 29 23 11 29 23			-								+ $=$		$+ \mp$
11 30 1 11 30 2					1								
11 30 3 11 30 4 11 50 ¢							$+ \equiv$		ΗŦ			F	+
11 30 6 11 30 7	1 1		:		:								
11 30 8 11 30 9 11 30 10													
11 30 11 11 30 12	1 1				1								
11 30 14 11 30 15													
11 30 16 11 30 17 11 30 17													
11 30 19 11 30 20	1 1		1		:								
11 30 21 11 30 22 11 30 23													
11 30 24 12 1 1 12 1 2					1								
12 1 3 12 1 4													
12 1 5 12 1 6 12 1 7													
12 1 B 12 1 9	1 1		1		:								
12 1 10 12 1 11 12 1 12													
12 1 13 12 1 14 12 1 15					1								
12 1 16 12 1 17	1 1		1		:								
12 1 18 12 1 19 12 1 20													
12 1 21 12 1 22 13 2 1 22	1 1		:		:								
12 1 28 12 1 24 12 2 1													
12 2 2 12 2 3 17 2 4					1								
12 2 5 12 2 6	1 1		1		:	:							
12 2 7 12 2 8 12 2 9													
12 2 20 12 2 11	1 1		1		- :								
12 2 13 12 2 14													
12 2 15 12 2 16 12 2 17													
12 2 18			1										\blacksquare
122 2 20 122 2 21 122 2 2 21 122 2 2 22 122 2 2 22 122 2 2 22 122 2 2 23 122 2 2 24													
12 2 23 12 2 24 12 3 1												H	+
12 3 2 12 3 3 12 3 4			1										\blacksquare
12 3 3 112 3 4 112 3 5 12 3 5 12 3 6 112 3 6					:								=
12							ŧΞ		H	= =	+	F	+
12 3 13 12 3 14					:								\pm
122 3 117 122 3 18 122 3 18 122 3 20 122 3 20 122 3 20 122 3 20 122 3 20 122 3 20 123 3 20												H	+
12 3 22 12 3 22 12 3 22 12 3 23					:								\blacksquare
12 1 3 3 3 3 3 3													
12 3 4 31 12 12 14 13 14 14 15 14 15 15 15 16 16 16 16 16 16 16 16 16 16 16 16 16							ŧΞ		H	= =	+	F	+
12 4 5 12 4 6					1								
122 4 7 122 4 8 8 122 4 9 8 122 4 9 9 123 4 10 123 4 11 127 4 11 127 4 11 127 4 11												H	+
12 4 10 12 4 11 17 4 11	1 1												\blacksquare
12 4 12 12 4 13 12 4 13													
12 4 15 12 4 16 12 4 17 12 4 17 12 4 18 12 4 18							ŧΞ		H	= =	+	F	+
12					1								
12 4 20 12 4 21 12 4 21 12 4 22							ŧΞ		H	= =	+	F	+
12 4 22 12 4 23 12 4 24 12 2 4 24 12 5 1 12 5 2					1								
12 5 1 12 5 2 12 5 3												H	+
12 5 4													\pm
1£ 5 6 12 5 7 12 5 8													
12 5 5 5 1 1 1 1 1 1 1							$+ \equiv$		ΗŦ			F	+
12 5 11 12 5 12 12 5 13					1								\pm
12 5 14 12 5 15 12 5 16													
12 5 17 12 5 18 12 5 18			1										+
12 5 20 12 5 21													
12 5 22 12 5 23 12 5 34							ŧΞ		H	= =	+	F	+
12					:								\pm
12 6 3 12 6 4		1 1					1						+

12 6 5 12 6 6 12 6 7							
12 6 E 12 6 9		1 1 1	1				
12 6 10 12 6 11							
12 6 13 12 6 14							
12 6 15 12 6 16			1				
12 6 17 12 6 18							
12 6 20 12 6 21			1				
12 6 22 12 6 23			1				
12 5 26 12 7 1 12 7 2							
12 7 3 12 7 4		1 1 1	1				
12 7 5 12 7 6			- 1				
12 7 8							
12 7 10 12 7 11		1 1 1	1				
12 7 12 12 7 13			1				
12 7 14 12 7 15 12 7 15							
12 7 17 12 7 18			1				
12 7 19 12 7 20 12 7 21							
12 7 22 12 7 23							
12 7 26 12 8 1			1				
12 B 2 12 B 3							
12 B 5		1 1 1					
12 B 7 12 B B			1				
12 B 10							
12 S 12 12 S 13			1				
12 B 14 12 B 15 12 B 15						+	+++
12 E 17 12 E 17							
12 E 19 12 E 20						++	
12 B 22 12 B 22							
12 B 24 12 12 12 12 12 12 12 12 12 12 12 12 12						+	
12 9 2 12 9 1 12 9 4						+	
12 9 5 12 9 6							
12 9 7 12 9 B						++	
12 9 10 12 9 11							
12 9 12 12 9 13	1 1 1	1 1 1				+	
12 9 14 12 9 15 12 0 17						+	++
12 9 17 12 9 18							
12 9 19 12 9 20						++	
12 9 21 12 9 23							
12 9 26 12 10 1		1 1 1	1				
12 10 2 12 10 3			1				
12 10 4 12 10 5 12 10 6							
12 10 7 12 10 8			1				
12 10 9 12 10 10 12 10 11							
12 10 12 12 10 13		1 1 1	1				
12 10 14 12 10 15			1				
12 10 17 12 10 18							
12 10 19 12 10 20			1				
12 10 21 12 10 22 12 10 23							
12 10 24 12 11 1		1 1 1	1				
12 11 2 12 11 3			- 1				
12 11 5 12 11 6							
12 11 7 12 11 E			1				
12 11 9 12 11 10 12 11 11							
12 11 12 12 11 13		1 1 1	1				
12 11 14 12 11 15			- 1				
12 11 17 12 11 18		1 1 1	1				
12 11 19 12 11 20		1 1 1	- 1				
12 11 22 12 11 22 12 11 23							
12 11 26 12 12 1			1				
12 12 2 12 12 3 12 12 4							
12 12 5 12 12 6		1 1 1	1				
12 12 7 12 12 8 12 12 9						++	
12 12 10					\vdash	+	====================================
12	1 1 1	1 1 1				+	
12 12 14 12 12 15 12 12 15						+	+++
12 12 17 12 12 18 12 12 18	1 1 1	1 1 1				+	
12 12 15 12 12 20 12 12 20 12 12 12 21 12 12 12 12 12 12 12 12 12 12 12 13 12 12 13 1 12 13 1 1						+	+++
12 12 22 12 12 23		1 1 1					
12 12 26 12 13 1 12 15 7						+	++
12 13 3						+	
12 13 5 12 13 6 12 13 7						+	++
12 13 E 12 13 0							
12 13 10 12 15 11						++	
12 13 12 12 13 13 12 13 14							
12 13 15 12 13 16						+	
12 13 17 12 13 18 12 13 16						+	+++
12 13 20 12 13 21							
12 13 22 12 13 23 17 17 18 23						++	
12 14 1 12 14 1 12 14 2							
12 14 3 12 14 4						+	
11 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1							
12 14 B	1 1 1	1 1 1				+	
12 14 10 12 16 11 12 14 17						+	++
12 14 13 12 16 16							
12 14 15 12 14 16							
12 14 17 12 14 18 12 14 19						+	
12 14 19 19 12 14 20 12 14 21 14 21							
12 14 21 24 21 22 24 22 24 22 24 22 24 22 24 24 22 24 24						+	++
12 15 1 12 15 2							
12 15 3 12 15 4						+	
12 15 5 12 15 6 12 15 7						+	++
12 15 8 12 15 9 12 15 10							
12 15 10 12 15 11 12 15 11						+	++
12 15 13 12 15 14							
12 15 15 12 15 16		1 1 1					

12 15 17 12 15 18	: :	1 1	- :	- :	- :	: :								
12 15 19 12 15 20 12 15 21														
12 15 22 12 15 23			1		1									
12 15 24 12 16 1 12 16 2														
12 16 3 12 16 4			1		1									
12 16 6 12 16 7			1		:		: =							
12 16 E 12 16 9 12 16 9														
12 16 11 12 16 12			1		1									
12 16 18 12 16 14 12 16 15														
12 16 16 16 17 12 16 17 17 18 17 18 18 18 18 18 18 18 18 18 18 18 18 18			- :		:		: =							
12 16 18 12 16 19 12 16 20														
12 16 21 12 16 22 12 16 23			1		1		: =							
12 16 24 12 17 1			1											
12 17 2 12 17 3 12 17 4			1		-									
12 17 5 12 17 6			1		:		: =							
12 17 7 12 17 8 12 17 9			1											
12 17 10 12 17 11			1		:		: =							
12 17 12 12 17 13 12 17 13			1											
12 17 15 12 17 16			1		:		1							
12 17 18 12 17 18 12 17 19														
12 17 20 12 17 21 12 17 21			1		1									
12 17 23 12 17 24			1		:		: =							
12 18 1 12 18 2 12 18 3			1		-									
12 18 4 12 18 5			1		1									
12 18 6 12 18 7 12 18 8														
12 18 9 12 18 20 12 18 11										$\vdash \top$		$=$ \parallel $=$	Ħ	一月
12 18 11 12 15 12 12 16 13														
12 18 14 12 18 15 12 18 15											+			= $=$ $=$ $=$ $=$ $=$ $=$ $=$ $=$ $=$ $=$ $=$ $=$
12 18 17 12 18 18 12 18 18											\Box			
12 18 19 12 18 20 12 12 18 21														
12 18 22 12 18 23 12 18 23													H	=
12 19 1 12 19 2					1									
12 19 3 12 19 4 12 19 5										F			H	=
12 19 6 12 19 7			1		:		: =							
12 19 8 12 19 9 12 19 10														
12 19 11 12 19 12			1		1		- 1							
12 19 14 12 19 15			1											
12 19 16 12 19 17 12 19 18														
12 19 19 12 19 20			1		1									
12 19 21 12 19 22 12 19 23														
12 19 24 12 20 1 12 20 2			1		1									
12 20 3 12 20 4			1											
12 20 5 12 20 6 12 20 7														
12 20 B 12 20 9			1		1									
12 20 11 12 20 12														
12 20 13 12 20 14 12 20 15			1		1									
12 20 16 12 20 17			1		:		: =							
12 20 18 12 20 19 12 20 20			1											
12 20 21 12 20 22 13 20 22			- :		1									
12 20 24 12 20 24 12 21 1														
12 21 2 12 21 3 12 21 3			1		1									
12 21 5 12 21 6			1		:									
12 21 7 12 21 E 12 21 9			1											
12 21 10 12 21 11			1		1		- 1							
12 21 11 12 21 14			1		:		- : -							
12 21 15 12 21 17														
12 21 18 12 21 19 12 21 20														\blacksquare
12 21 21														
12 21 22 12 21 23 12 21 24 12 22 1											=		H	
12 22 2			- 1		- :									
12 22 3 12 22 4 112 22 5 12 22 6 112 22 6 112 22 7														
12 22 II											=		H	
12 22 10 12 22 11 12 22 11 12 22 11 12 22 12 12 22 31 12 22 31 12 22 34														#
12 22 13 14 12 12 12 13 14 14 15 14 15 16 16 16 16 16 16 16 16 16 16 16 16 16														
								ŁΞ				_=	₽Ŧ	
12 22 18 12 22 19			- :		- 1									#
12 22 20 12 22 21 12 22 22														
12 22 23 12 22 24 12 23 1			1		1									
12 2 3 3 3 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4														
12 23 5 12 23 5														
12 23 7 12 23 8			1		1									
10 25 5 5 5 5 5 5 5 5					1									
12 23 12 12 23 13 12 23 14										F			H	一日
121 223 144 121 223 144 121 223 151 121 223 151 121 223 151 121 223 17 121 223 17 121 223 17 121 223 17 121 221 221 23			- :		- 1									
12 23 17 12 23 18 12 23 19														
12 23 20 12 23 21 12 23 21 12 23 22														#
12 23 22 12 23 23 12 23 24														
12 2 23 22 23 24 25 25 25 25 25 25 25 25 25 25 25 25 25								Ħ			+		H	
12 24 4					1									
12 24 6 12 24 7 12 24 7														
12 24 5 12 24 5 12 25 25 25 12 25 25 25 12 25 25 25 12 25 25 25 25 12 25 25 12 25 25 12 25			- :		- 1									#
12 24 11 12 24 12 12 24 13														
12 24 14 14 12 24 15 17 17 17 17 17 17 17 17 17 17 17 17 17								Ħ			+		H	
12 24 16 12 24 17 12 24 18 12 24 18														
12 24 19 12 24 30 12 24 30 12 24 21														
12 24 22 12 24 22 12 24 23			- :		- 1									
12 24 26 11 12 25 1 1 12 25 2					-									
12 25 3 12 25 4	1 1													

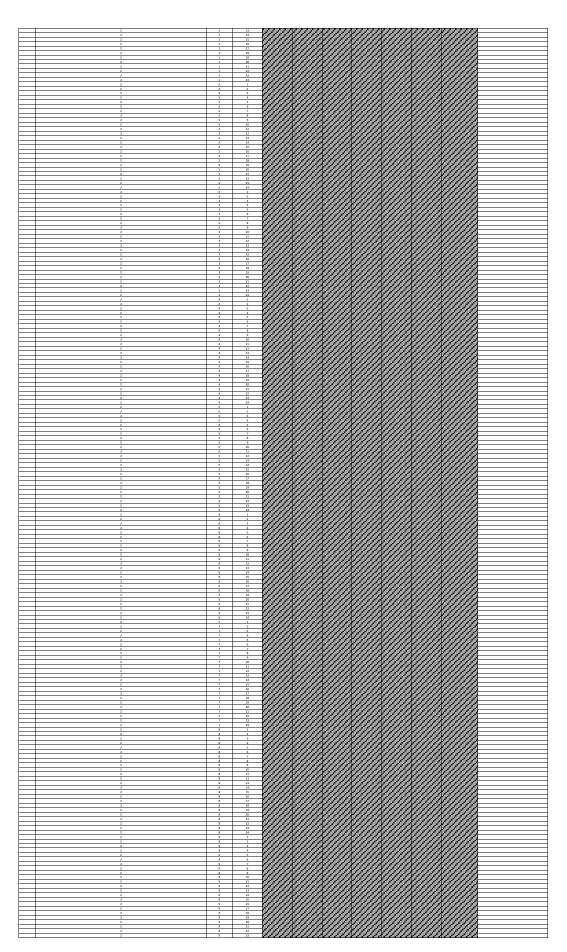


25 MMT	ef in 2035 and Inputs										
	out injunction of additional control of the control		Units	2024 5,759 901	2026 5,759	2030 5,955	2035 6,029	Must be entered regar	dess of demand modifi	ers selected. Includes impact	of BTM PV, Energy Efficiency, etc.
Behind-Th Retail Sale Behind Th	ales without BTM PV reduction		GWh	901 6,660 973 3N	1,023 6,782 1,104	1,323 7,279 1,428	1,636 7,734 1,764 3%	Measured at custome. Used to allocate demo	r, not grossed up for T&1 nd modifien	Nosses	
Calculated	The-Meter Photovoltains (BTM PV) groused up for T&D losses ted share of CAESO system demand (% of Retail Sales)		*			3%					
Commerci Default	rcial & Industrial Fraction of Baseline Demand if C&F Prenetage of Total in C&F Prenetage of Total (OPTIONAL)	Use Custom? No	Units	2024 49%	2024 49%			Notes Default, do not change	Does not include demo	and from Light Duty EVs.	
	n_cal_vectomage of 1 cost (UV1 (UVNs)) ted Demand, based on sales-weighted share of total from IEPR		Units		2026	2030	2035	Notes	deposit y Ose Custom.	- 761	
Electric V	ne net enegy for load ic Vehicle Load		GWh	7,011 244 28 (96) (97)	7,088 346 50) (164)	2030 7,497 550 101 (295) (1,438)	7,765 841 168 (431) (1,764)	Notes Grossed up for T&D los	ues; demand met by 81 ues	M CHP excluded	
Energy E Behind-1	g Electrication y Efficiency 4-The-Moter Photovoltaics (ETM PV)		GWh	(96) (973)) (164)) (1,104)	(295) (1,428)	(431) (1,764)	Grossed up for T&D in Grossed up for T&D in Grossed up for T&D in	uer uer		
	d-The-Meter Storage Losses (BTM Storage) d-The-Meter Storage Capacity (BTM Storage)		GWh GWh Nameplate MW					Grossed up for T&D los	uer .		
Custom D Baseline	Demand Inputs (OPTIONAK; overwrites sales-weighted IEPR values from Calculated Demand section) se net energy for load spitchists and	Use Custom?	GWh GWh GWh	00000		WWW.		Notes To overwrite, set "Use	Custom" to "Yes" and in	put forecost. For use in Alten	sative Plans only.
Building Energy E	r gractification y Efficiency	No No No No	GWh					Custom demond value Uner-specified demans	s should be grossed up f I profiles should be inpu	put forecast. For use in Alben for T&D losses. It in the "Custom Profiles" tab imand and therefore should i	
Behind-1 Behind-1	d-The-Meter Photovoltaics (BTM PV) d-The-Meter Storage Capacity (BTM Storage)	No No	GWh Nameplate MW	HHH	HHH	****	###	Custom BTM storage s	hould be entered in terr	ns of Nomeplate MW	e ensered di negotive volues.
Active De	d-The-Moles-Storage Losses (BTM Storage) Demand Inputs no not energy for load	Source IEPR	GWh Units GWh			7.497	2035 7,705	Notes Grossed up for T&D los	ues; demand met by BT	M CNP excluded	
Non-c Comr	n-commercial/Industrial portion of baseline (included in baseline total) mmercial/industrial portion of baseline (included in baseline total)	IEPR IEPR IEPR IEPR IEPR	GWh GWh	3,607 3,405 244 28 (96) (973)	3,634 3,455 346	3,805 3,692 550	7,765 3,861 3,904 841	Grossed up for T&D los Grossed up for T&D los	ues; demand met by 81 ues; demand met by 81	M CHP excluded M CHP excluded	
Building	ic Vehicle Load g Electrication - Whiterup	IEPR IEPR	GWh GWh	244 28 (ox)	345 50) (164)) (1,104)	550 101 (295) (1,428)	168 (431) (1,764)	Grossed up for T&D los Grossed up for T&D los Grossed up for T&D los Grossed up for T&D los	uer uer		
Behind-1 Behind-1	y Efficiency -f-The-Meter Photovoltaics (BTM PV) -f-The-Meter Storage Losses (BTM Storage)	IEPR	GWA	(973)	(1,104)	(1,428)	(1,764) E	Grossed up for T&D los Grossed up for T&D los	uer uer		
	ted demand at utility-scale generator bus-bur		GWh	6,217	6,218	6,431	6,587	Total of "Active Demar	nd Anputs *		
IFM CIP	P Calculation wide In front of the meter (IFM) Combined Heat and Power (CIP) generation		GWh	2024 11,129	2026	2030 10,660	2035 6,470	(neut data - do not cha	nor. Values are from \$1	WVM disperch	
	re of ITM OFF		GWh	313	304	297	178	Calculation - do not che	onge		
Checks Correct sig	sign (positive/negative) on demand inputs on C&I percentage is used, positive percentage is used			TRUE TRUE	TRUE TRUE	TRUE TRUE	TRUE TRUE				
	Demand Shapes (OPTIONAL; overwrites default demand shapes)						Custom Hourly Demand I	rolles			
			Use Custom Shape?	No	No SET US hope should be normalin lies except BTM Storage,	No consort shape ragge	No no res to overnos cep	No sur snope mor current	No integer cercial	No	
			Notes:	For all prof	iles except BTM Storage,	normalize by dividing e	very hour of the original	year should equal 1 with non-normalized shape (in MW) by the annual to	stolage. stal (in MWh/yr).	
Total	Check	Sums to 1 if cu	tom shape is defined?	TRUE	TRUE	TRUE	TRUE	TRUE	TRUE	TRUE	BTM Storage Check: Between -1 and 1
Month		Day	Hour	Baseline: Non C&I	Baseline: C&I	Electric Vehicle Load	Building Electrification	Energy Efficiency	Behind-The-Meter Photovoltaics (BTM PV)	Behind-The-Meter Storage (BTM Storage)	
, none	1	1 1	1 2			/////					
	1	1	3 4								
	1	1	5								
	1	1	7 8								
	1 1	1 1	10 11		(////						
	1	1	12 13								
	1	1	14 15		<i>}/////</i>						
	1	1	16 17								
	1 1 1 1	1	18 19 20								
	1 1	1 1	21 21 22								
	1	1 1	23 24								
	1	2 2	1 2								
	1	2	3 4		<i>}/////</i>						
	1	2	5		<i>7777</i> 7						
	1	2	7 8	9000	9000		9000	9999)			
	1	2	10								
	1	2 2	12								
	1	2 2	14 15	WWW							
	1	2	16 17		<i>11111</i>						
	1	2 2	18 19	97777	<i>11111</i>		<i>1000</i>	111111			
	1	2	20 21	0000	<i>9999</i>		(1111)			(11111)	
	1	2	22 23	(1111)	<i>9000</i>		<i>9999</i>	9999,			
	1	3	1 1	VIII	V/////						
	1	3	3 4	<i>77777</i>	<i>/////</i>			/////			
	1	3	5	MA S							
	1	3	7 8								
	1	3	9		<i>Y/////</i>						
	1	3	11								
	<u>i</u> 1	3	14 15		<i>V/////</i>						
	1	3	16 17		(////						
	1	3	18 19								
	1	3	20 21								
	1 1 1 1	3	22 23 34								
	1 1	4	1 2								
	1	4	3		<i>\/////</i>						
	1	4	5								
	1	4	7 8		<i>Y////</i> /						
	1 1	4	9 10								
	2 2	4	12								
	1	4	14 15								
	1	4	16 17								
	1 1 1	4	18 19 20								
	1 1	_ 1	21 22								
	1	4	25 24								
	1	5	1 2								
	1	5	3		\$/////						
	1		5								
	1	5	7 8								
	1 1	5 5	10 11		1////						
	2 2	5	12								
	1	5	14 15		<i>\/////</i>						
	1	5	16 17								
	1 1	5	18 19		<i>[[]][]</i>						
	1 1 1	5	20 21 27								
	2 2	5	23 24		<i>Y////</i> //						
	2 2	6	1 2								
	1	6	3 4								
	1	6	5 6								
	1	6	7 8		<i>\/////</i>						
	1	6	10								
	1 1	6	12 12								
	2 2	6	14 15								
	1 1	6	16 17								
	1	6	18 19								
	1	6	20 21								
	1 1	6	22 23		(////						
	1	7	1 2								
		-	1 - 1			2000	W 2 2 2 2 2		20000		

	1	7	4	V////	17777	07777	/////	X/////	V////	177777	
		7	6 7								
		7 7 7	9					80000			
	1	7	11 12								
	1	7 7	13 14					80000			
		7	16 17					<i>8000</i>			
		7 7 7	18 19 20					X////			
	1	7	21 22					80000			
	1	7	23 24					<i>1000</i>			
	1	- 1	2 3					8000			
	1	8	5					80000			
		-	7 8					80000			
	1		9 10					80000			
		-	11 12 13					<i>1000</i>			
	1	8 8	14 15					<i>80000</i>			
		8	16 17 18					<i>1000</i>			
	1	8	19 20		VIII			X////	999	<i>10000</i>	
	1	-	21 22 23					WWW.			
	1	2	24 1				(1111)	WWW.			
		9	3 4	<i>1000</i>	<i>1000</i>			X////		X//////	
	1	9	5		VIII			X////	999	<i>10000</i>	
		9	7 8 9			<i>[[]]</i>					-
	1	2	10 11								
		9	12 13			<i>[[]][]</i>					-
	1	2 2	14 15 16			<i>[[]][]</i>					
	1	9	17 18			<i>{/////</i>					-
	1	2 2	20 21								
		9	22 23			<i>[[]][]</i>					
	1	9 10 10	24 1 2			<i>[[]]</i>					
	1	10	3 4								
		10 10 10	5 6 7			<i>[[]]</i>					
	1	10	ž 9			<i>[[]]</i>					
	1	10	10 11	<i>7000</i>	<i>1000</i>			X////	999	X//////	
	1	10	13 14								
	1	10 10	15 16					<i>1000</i>			
	1	10 10	17 18 19					<i>1000</i>			
	1	10 10	20 21					<i>8000</i>			
	1	10	23 24		<i>1000</i>			X////		<i>10000</i>	
	1	11 11	1 2					<i>80000</i>			
		11 11	3 4 5	<i>9000</i>	<i>1000</i>			X////		<i>10000</i>	
	1	11 11	6 7		VIII		9000	X////	999	<i>10000</i>	
		11 11	9			<i>Y/////</i>					
	1	11 11	11 12			9////		<i>VIII</i>			
	1	11 11	13 14 15	<i>(////</i>		9////		W			
	1	11 11	16 17			<i>Y/////</i>					
		11 11	18 19 20	<i>(////</i>		9////		W			
		11 11	21 22			9////		<i>VIII</i>			
		11 11	23 24			9////		W			
	1	12 12	2 3			9////		<i>VIII</i>			
	1	12	3			9////		<i>VIII</i>			
	1	12	7 8			9////		WW			
	1	12	9			9////		<i>VIII</i>			
	1	12 12 12	11 12 13			9////		WW			
	1	12 12	14 15					<i>}////</i>			
	1	12 12 12	16 17 18					<i>}/////</i>			
	1	12 12	19 20					<i>}////</i>			
		12 12 12	21 22 23					<i>}////</i>			
	1	12 13	24 1								
		13 13 13	3 4								
	1	13	5 6								
		13 13	7 8 0								
	1	13	10 11								
		13 13	12 13								
	1	13 13 13	15 16								
		13 13	17 18								-
	1 1	13 13 13	19 20 21								
		13 13	22 23								
	1	13 14 14	24 1 2								
		14	3 4								
		14 14 14	5 6 7								
	1	14 14	3 9								
		14 14 14	10 11								
	1	14 14	13 14								
		14 14 14	15 16								
1	1	14 14	18 19								
		14 14	20 21								
		- 17					100				
		14 14 14	22 23 24			11/1/10		V/////			
		14 14	22 23 24 1 2								
		14 14	22 23 24 1 2 3 4								
		14 14	22 23 24 1 2 3 4 5								
		14 14	22 23 24 1 2 2 3 4 5 6 7 7								
		14 14	22 23 24 1 2 3 4 5 6 7 8 9 20 11								

	1	15	15 16	97777	/////	07777	/////	X/////	V////	177777	
	1	15 15	17 18					<i>8000</i>			
	1	15 15	20 21					<i>\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\</i>			
	1	15 15	22 23 24				9 <i>999</i>				
	1	16 16	2								
		16 16	4 5								
	1	16 16 16	7 8					<i>8000</i>			
	1	16 16	9 10								
	1	16 16	12					<i>VIII</i>			
	1	16 16 16	14 15 16								
	1	16 16	17 18								
	1	16 16	20 21								
	1	16 16 16	22 23 24					<i>1000</i>			
	1	17	2								
	1 1 1	17 17 17	4 5					WW.			
	1	17 17 17	7 8		<i>W.</i>			<i>W.</i>			
	1	17	9 10								
	1	17	12 13								
		17 17	14 15								
		17	17 18					<i>8000</i>			
	1	17 17 17	20 21					W///			
	 1 1	17 17 17	22 23 24								
		18 18	1 2								
	1 1	18 18	3 4 5								
E	1	18 18 18	6 7 8								
		18	9								
	1	18 18	11 12 13								
		18 18 18	14 15 16								
	1	18	17 18								
	1	18 18	20 21								
		18 18	22 23 34					<i>1000</i>			
	1	19	1 2					<i>8000</i>			
	1	19 19 19	3 4 5					W///			
	1	19 19	6 7 8								
		19	9								
	1	19 19 19	11 12 13								
	1	19 19	14 15								
		19	17 18								
	1	19 19 19	20 21					<i>\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\</i>			
	1	19 19	22 23				9 <i>999</i>				
	1	20	1 2								
	1	20 20 20	3 4 5								
	1	20 20	7					<i>1000</i>			
	1	20 20 20	9					<i>8000</i>			
	1	20 20 20	11 12 13					<i>VIII</i>			
	1	20 20	14 15								
	1	20 20	17 18								
	1	20 20 20	20 21								
		20 20 20	22 23 34					<i>8000</i>			
	1	21 21	1 2								
	 1 1 1	21 21 21	3 4 5								
Ė	<u> </u>	21 21 21	6 7 8								
		21 21	9								
E	i i	21 21 21	11 12 13								
E		21 21 21	14 15 16								
		21 21	17 18								
	 1 1	21 21 21	19 20 21								
	1	21 21 21	22 23 74								
E	1	21 22 22	1 2								
	1	22 22 22	3 4 5								
	<u> </u>	22 22 22	6 7 8								
	1	22 22 22	9								
	 1 1	22 22 22	11 12 13								
	· · · · · · · · · · · · · · · · · · ·	22 22 22	14 15 16								
		22 22	17 18								
	i i	22 22 22	19 20 21								
	 1 1	22 22 27	22 23 24					<i>\\\\\\</i>			
	1	23	1 2								
	 i i	23 23 23	3 4 5								
		23 23 23	6 7								
	1 1	23 23 23	9 10								
		23 23 23	11 12 13								
		23 23	14 15								
	i i	23 23 23	10 17 18								
	 1 1	23 23 23	19 20 21								
	1	23 23	22 23								
		23 24	24 1	UUU	V/////	V////				<i>///////</i>	

	1	24 24	2 3	97777	/////	///////////////////////////////////////			
	1	24 24	4 5						
	1	24 24 24	6 7 8						
	1	24 24	9						
	1	24 24	12						
	1	24 24	14 15						
	1	24 24	16 17						
	1	24 24	19 20						
	1	24 24	21 22						
	1	24 24 25	24 1						
	1	25 25	3						
		25 25 25	5 6						
	1	25 25	7 8						
		25 25 25	9 10 11						
	1	25 25	12 13				<i>000</i>		
	1	25 25 25	14 15						
	1	25 25	17 18				<i>000</i>		
	1	25 25 25	20 21						
	1	25 25	22 23	9777			<i>000.</i>		
		25 26 26	24 1 2	9000					
	1	26 26	3 4				<i>000.</i>		
Ė		26 26 26	5 6 7						
	1	26 26	8 9						
E		26 26	10 11						-
	1	26 26	12 13 14						
E	1	26 26	15 16						-
E	 1	26 26 26	17 18 19						
	1	26 26	20 21				<i>999</i>		
		26 26 26	22 23 24						
	1	27 27	1 2						
E		27 27 27	3 4 5						
		27	6 7						
	1	27 27	9	9777			<i>000</i>		
	1	27 27 27	11 12						
	1	27	13 14	9777			<i>000</i>		
	1	27 27 27	15 16						
	1	27 27	18 19						
	1	27 27 27	20 21 22	9777					
	1	27 27	23 24						
		28 28 28	2 3						
	1	28 28	4 5	9777			<i>000.</i>		
		28 28 78	7 8	9000					
		28 28	9						
		28 28 78	11 12						
		28 28	14 15						
		28 28	16 17						
		28 28	19 20						
		28 28 78	21 22 25						
	1	28 29	24 1						
	1	29 29	3						
	1	29 29	5 6						
	1	29 29	7 8						
	1	29 29 29	9 10 11						
	1	29 29	12 13						
	1	29 29 29	14 15 16						
	1	29 29	17 18						
		29 29 29	19 20 21						
	1	29	22 23						
		29 30 31	24 1						
E	1	30 30	3 4						
E		30 30	5						
E	1	30 30	8 9						
		30 30	10 11						
	1	30 30 30	12 13 14						
	1	30 30	15 16						
		30 30 30	17 18 19						
	1	30 30	20 21						
E		30 30 30	22 23 24						
	1	31 31	1 2						
E		31 31	4						
E	1	31 31 31	5 6 7						
		31 31	9						
	1	31 31 31	10 11 12						
	1	31 31	13 14						
		31 31 31	15 16 17						
	1	31 31	18 19						
		31 31 31	20 21 22						
	1	31 31 31	22 23 24						
E	2	1 1	2 1						
	1	1	4 5						
	1	1	6	11/1//	17/7/	(1111/11/11/11/11/11/11/11/11/11/11/11/1		<i>//////</i>	
	2	1			17777			1///////	
	2 2 2 2	1 1 1	8 9 10						



		2	9	24	(////			(////	<i>777777</i>	
		2 2 2	10	2 3	(1111)					
		2	10 10	4 5						
		2	10	7		////	////		<i>V/////</i> .	
		2 2 2	10	9	<i>{/////</i>				V/////	
		2	10 10	11 12						
		2	10	13 14	<i>9777</i> 7,			900	X/////	
		2	10	16 17	<i>7777</i> 77				<i>10000</i>	
		2	10 10	15 19	<i>(////)</i>					
		2	10	20 21 22						
		2	10	23 24						
		2	11 11	2	<i>/////</i>					
		2	11	4						
		2	11	5 7	<i>10000</i>					
		2	11 11	9						
		2	11	10 11	(1111)				<i>VIII</i>	
		2	11	13 14					VIII)	
		2	11	15 16	<i>{/////</i>			(1111)	<i>VIII</i>	
		2	11	18 19	V////				<i>V/////</i>	
		2	11 11	20 21	<i>(/////</i>			977	<i>17777</i>	
		2	11	22 23	<i>(/////</i>				WWW	
		2	12	1 2						
		2	12	3 4						
		2	12	5 6					<i>\$[[]][]</i>	
		2	12 12	9					<i>\$[[]][]</i>	
Ė	-	2	12	10 11						
		2	12 12 17	12 13					<i>}/////</i>	
E		2	12 12	15 16						
	-	2	12	17 18						
-		2 2	12 12 12	19 20 21						
		2	12	22 23						
E		2	12 13	24						
<u> </u>		2	13 13	3 4					8/////	
		2	13	5 6					8/////	
E		2	13	7 8						
		2 2	13	10 11						
	_	2	13	12 13					<i>{/////</i>	
		2	13 13 13	14 15						
		2 2 2	13	17 18						
		2	13	19 20			(111)		<i>VIII)</i>	
		2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2	13	21 22 23						
		2	13	24 1	WW.				VIII)	
		2	14	3					<i>7/////</i>	
		2 2 2	14 14	5 6	<i>1777</i>				<i>V/////</i>	
		2	14 14	7 8	<i>(/////</i>			977	<i>17777</i>	
		2	14	9 10	<i>(/////</i>				WWW	
		2 2 2	14	12 13						
		2	14 14	14 15						
		2	14 14	16 17	0000					
		2	14 14	19 20	<i>0000.</i>				<i>90000</i>	
		2	14 14	21	0000					
		2 2 2	14 14	23 24 1						
		2	15 15	3						
		2	15 15	5					<i>7/////</i>	
		2	15 15	7 8						
		2	15 15	9						
		2 2	15 15	11 12 13						
		2	15 15	14 15						
		2	15 15	16 17						
		2	15 15	19 20						
E		2	15 15	21 22						
<u> </u>		2	15 15	24 1					<i>}//////</i>	
		2	16 16	3						
		2	16 16	3					8/////	
<u> </u>		2	16 16 16	7 E					8/////	
		2	16 16	9 10						
		2	16 16	11 12						
		2	16 16 16	14 14 15					<i>{/////</i>	
	_	2	16 16	16 17						
		2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2	16 16 16	18 19 20						
		2	16 16	21 22						
		2	16 16	23 24						
		2	17 17 17	2 1						
		2	17	4 5						
Ė	_	2	17	6 7						
		* 2 2	17 17 17	9 10						
		2	17	11 12						
	_	2	17	13 14						
		2	17 17 17	15 16 17					<i>\$[[]]</i>	
		2	17 17	18 19						
	_	2	17	20 21						
		* 2 2	17 17 17	22 23 24						
		2	18	1 2						
E		2	18	3 4						
		2	18 18 18	6 7						
		2	18	9						
			18	20						

		1	18	11	V////	17777	07777	/////	177777	V////	177777	
		2	18	13 14								
		2	18 18	15 16								
		2	18 18	18 19								
		2	18 18	20 21								
		2	18 18	23 24								
		1	19 19	2								
		2	19 19	4 5								
		2	19	7								
		1	19 19	9								
		2	19 19	11								
		2	19 19	13 14 15								
		1	19 19	16 17								
		2	19 19	18 19 20								
		2	19 19	21 22		VIII			<i>VIII</i>	999	<i>10000</i>	
		2	19 19	23 24								
		2	20 20	3					VIII			
		1	20 20 20	5								
		1	20 20	7 8								
		2	20 20 20	9 10 11								
		1	20 20	12 13					<i>V/////</i>			
		1	20 20 20	14 15 16								
		1	20 20	17 18								
F		2	20 20 20	19 20 21								
		2	20 20	22 23								
		2	20 21 27	24 1								
		2	21 21	3 4								
		1	21 21 27	5 6 7								
E		1	21 21	8 9								
		1	21 21	10 11							<i>Y//////</i>	
E		1	21 21	12 13 14								
E		1	21 21	15 16							<i>Y//////</i>	
		2	21 21 21	17 18 19	<i>(////</i>							
		2	21 21	20 21					<i>VIII</i>			
		2	21 21	22 23								
		2	22 22	1 2								
		2	22 22	4								
		2	22 22	6 7								
		1	22	9								
		1	22 22 22	11 12								
		2	22 22	13 14					<i>VIII</i>			
		1	22 22 22	16 17								
		1	22 22	18 19			(1111)			(1111)		
		1 2	22 22 22	20 21 22			(1111)			(1111)		
		1	22	23 24			(1111)			(1111)		
		1 2 2	23 23 23	2 3			(1111)			(1111)		
		1	23 23	4 5			(1111)			(1111)		
		2	23 23 23	7 8			(1111)			(1111)		
		1	23 23	9 10			(1111)			(1111)		
		2	23 23 23	11 12 13			(1111)			(1111)		
		1	23 23	14						(1) [1]	Y TO TO TO	
		2	23 23	16 17						(1) [1]	<i>10000</i>	
		2	23 23	19							Y TO TO TO	
		1	23 23	21 22								
		1	23 24	24 1								
		1	24 24	3								
		1 1	24 24 24	5 6								
		1	24 24	7 8								
		1	24 24 24	9 20 11								
		1	24 24	12 13								
		1	24 24 24	14 15							<i>Y/////</i>	
		2	24 24	17 18								
		1	24 24 24	19 20 21								
		1	24 24 24	22 23								
		2	24 25	24								
		1	25 25 25	3 4								
		1	25 25	5								
		1	25 25 25	8 9								
		1	25 25	10 11								
		1	25 25 25	12 13 14								
		1	25 25	15 16								
		2	25 25 25	17 18 10								
		1	25 25	20 21							<i>Y/////</i>	
		1	25 25 24	22 23 24								
		1	25 26 26	1 2								
	1	1	26 26	3								
			26 26	6	V////							
		2	26									
		2		7 8 9								
		2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2	26 26	7 8 9 10 11								
		2 2 2 2 1	26 26	7 8 9 10 11 12 13 14								
		2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2	26 26	7 8 9 10 11 12 13 14 15 16								
			25 25 25 25 25 25 25 26 26 26 26 26 26 26 26	7 8 9 10 11 12 13 14 15 16 17 18								

		2	26	22	97777			(////	<i>777777</i>	
		2 2 2	26 26 27	23 24 1						
		2	27 27	2 3						
		2	27	5		////	////		<i>V/////</i> .	
		2 2 2	27	7 8	<i>{/////</i>				V/////	
		2 2	27 27	9 10						
		2	27	11 12	<i>9777</i> 7,			<i>000</i>	X/////	
		2	27	14 15	<i>7777</i> 77				<i>10000</i>	
		2	27	16 17					<i>10000</i>	
		2	27 27 27	18 19 20						
		2	27 27	21 22						
		2	27 27 28	23 24	<i>(1111)</i>					
		2 2 2	28 28 28	2 3	<i>1111</i> 1.					
		2	28 28	4 5						
		2	28 28 28	7						
		2	28 28	9						
		2	28 28	11 12						
		2 2 2	28 28 28	14 15	9 <i>999</i>					
		2	25 25	16 17			<i>11111</i>		<i>VIII)</i>	
		2	28 28	18	<i>{/////</i>			(1111)	<i>VIII</i>	
		2 2 2	28 28 28	20 21 22	<i>1777</i>				<i>V/////</i>	
		2	28 28	23 24						
		1	1	2						
		1	1 1	4 5						
		3	1	6 7						
		1	1	9						
		3	1 1	11 12						
	_	1	1 1	13 14						
	·	1	1 1	15 16 17					<i>}/////</i>	
		3	1	18 19						
	-	1	1	20 21						
		3 3	1	22 23 24						
		1	2	1 2						
		1	2	3 4						
		1	2 2 2	5 6 7					8/////	
		3	2 2	1 9						
		1	2 2	10 11	<i>(1111)</i>					
		3 1	2 2	12 13						
		3	2 2	15 16						
		3	2 2	17 18			<i>/////</i>		<i>77777.</i>	
		3	2 2	20 21						
		3	2 2	22 23	<i>1777</i>					
		1	3 1	24 1	(////				<i>VIII)</i>	
		3	3	3 4	(1111)				<i>VIII</i>	
		3	3	5					<i>7/////</i>	
		3	3	7 8	V////				<i>V/////</i>	
		3	3	10 11	<i>(/////</i>			977	<i>111111</i>	
		3	3	12	<i>97777</i> ,			977	<i>111111</i>	
		3	3 3	15 16	<i>(/////</i>					
		3	3	17 18						
		3	3	20 21						
		1	3	22 23						
		3	3 4	24 1	<i>(1111)</i>				<i>90000</i>	
		3	4	3 4						
		3	4	5 6						
E		1	4	7 8						
	_	3	4	10 11						
		3	4	12 13						
		3	4	14 15						
		3	4	15 17 18						
E		3	4	19 20						
<u> </u>		1	4 4	21 22 23						
		1	4 5	24 1						
	·	1	5	3 4						
		3	5 5	5 6					8/////	
		1	5	7 8						
		1	5	9 10						
		1	5 5	11 12 13					<i>{/////</i>	
	_	1	5 5	14 15						
		1	5	16 27						
		3	5	19 20						
		3	5	21 22						
		3 3	5	23 24						
		1	6	2						
	_	1	6	5						
		1	6 6	7 8						
		1	6	9						
Ė		1	6	11 12						
		1	6	13 14 1*					<i>\$[[]]</i>	
		3	6	16 17						
	_	1	6	18 19					<i>}/////</i>	
		1	6 6	20 21 22						
		3	6	23 24						
E		3	7	2						
		- 3 3	7 7	4 5						
		3	7	6 7						
			7							

1	
1	()////
1	<i>X/////</i>
	((////)
	<i>(((((((((((((((((((((((((((((((((((((</i>
1 1 2 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	(/////
1 2 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	<i>\\\\\\</i>
1 2 2 2 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	
1 19 22	(((((((((((((((((((((((((((((((((((((((
	(((((((((((((((((((((((((((((((((((((((
1 11 2	
	(((((((((((((((((((((((((((((((((((((((
1 11 5	
	<i>\\\\\\</i>
1 11 11 1 1 11	<i>\\\\\\</i>
	<i>X////</i>
1 11 15 1 15 15	<i>X////</i>
1 11 11	<i>X////</i>
1 1 2	<i>X////</i>
3 15 25 3 15 25	<i>X////</i>
1 1 1 1	<i>X////</i>
1 12 4 1 2 4	<i>X////</i>
1 12 7	<i>X////</i>
3 22 9 3 12 12	<i>X////</i>
1 1 1 1 1	<i>X////</i>
3 22 45 3 23 55	<i>X////</i>
	<i>X////</i>
3 22 29 3 22 29	(1/////
3 22 23 3 22 23	<i> }/////</i>
3 12 34 3 33 3	//////
1 13 2 3 13 3 3 1 4	//////
3 11 5 1 11 6	//////
1 1 1 7 3 13 5	//////
3 11 10 1 12 11 11	//////
3 11 12 13 13 13 13 13 13 13 13 13 13 14 14 15 15 15 15 15 15 15 15 15 15 15 15 15	//////
3 33 33 3 33 35	//////
3 13 17 3 13 14	(1/////
3 13 19 3 13 20 3 13 21	//////
1 11 22	(1/////
3 3 4 1 3 34 1 1 3 4 2	//////
3 H 3 3 H 3 3 H 4	//////
3 34 5 3 34 6	//////
3 H 8 3 H 9	//////
3 34 30 3 34 31 1 44 32	//////
3 34 32 3 34 33 3 34 34	//////
3 34 55 3 45 55	//////
3 34 12 3 34 33 3 34 39	//////
3 34 20 3 3 44 21	//////
3 34 22 3 34 23 5 34 24	//////
3 3 1 3 3 2	(/////
3 3 3 3 3 3 4 3 4 4 4 4 4 4 4 4 4 4 4 4	(/////
3 13 5 3 15 4 3 15 7	//////
3 25 2 3 25 9	((////)
3 5 5 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	(/////)=
3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3	(/////
<u> </u>	A 2 2 2 2 2 2 2 2
1 15 15 17 17 17 17 17 17 17 17 17 17 17 17 17	X/////

		1	15	20	V////				(////	<i>777777</i>	
		1	15 15	21 22 23							
		1	15 16	24 1							
		1	16 16	3		////		////		<i>V/////</i> .	
			16 16	5 6						V/////	
		1	16 16	7 8							
		1	16 16 16	9 10							
		1	16 16	12						<i>10000</i>	
		1	16 16	14 15						<i>10000</i>	
		1	16 16	16 17							
		1	16 16	19 20							
		1	16 16 16	21 22							
		1	16 17	23 24 1							
		1	17 17	3							
		1	17	3							
		1	17 17	7 8							
		1	17 17	9 10							
		1	17	12 13							
		1	17 17	14 15				<i>11111</i>		<i>VIII)</i>	
		1	17	16 17					(1111)	<i>VIII</i>	
		1	17	19 20						<i>V/////</i>	
		1	17 17	21 22					977	<i>17777</i>	
E		1	17 17	23 24							
 		1	18 18	2 3							
		1	18 18	4 5							
		1	18 18 18	5 7							
		1	18 18	9 10							
	_		18	11 12							
		1	18 18	13 14							
		1	18 18 18	16 17							
		1	18 18	18 19							
	·		18 18	20 21 27							
		1	18 18 18	23 24							
		1	19	1 2						8/////	
	·		19 19	3 4						8/////	
		1	19	6 7	<i>(1117)</i>						
		1	19 19	9							
		1	19 19 19	11							
		1	19	13 14							
		1	19 19	15 16				(111)		<i>VIII)</i>	
		1	19 19	17 18							
		1	19	20 21	<i>10000</i>					V/////	
		1	19	22 23						<i>7/////</i>	
		1	20 20	1 2						<i>V/////</i>	
		1	20 20	3 4					977	<i>17777</i> 7	
		1	20 20	5						WWW	
			20 20 20								
		1	20 20	10 11							
		1	20 20 20	12 13	<i>(1110)</i>						
		1	20	15 16	0000					<i>90000</i>	
		1	20 20	17 18	0000						
		1	20 20 20	20 21							
		1	20 20	22 23							
		1	20 21	24						<i>7/////</i>	
		1	21 21 21	3 4							
	-	1	21 21	5							
		1	21 21 21	7 8 9							
		1	21 21	10 11							
		1	21 21	12 13						<i>}//////</i>	
		1	21 21 21	14 15 16							
		1	21 21	17 18							
		1	21 21 21	19 20 21							
		1	21 21	22 23						8/////	
Ė	_	1	21 22	24 1						8/////	
		1	22 22 22	2 3 4							
		1	22 22	5							
Ė	_	1	22 22	7 8						<i>{/////</i>	
<u> </u>		1	22 22 22	9 10 11							
		1	22 22 22	12 13							
		1	22 22 27	14 15							
		1	22 22	17 18							
		1	22	19 20							
		1	22 22 23	21 22 28							
		1	22 23	24							
		1	23 23	2 3							
	·		23 23 23	4 5							
<u> </u>		1	23 23	7 8							
		1	23 23	9 10						<i>\$[[]]</i>	
		1	23 23 23	11 12 13							
		1	23 23 23	14 15							
	-	1	23 23	16 17							
		1	23 23 21	18 19 20							
		1	23 23 23	21 21 22							
	-	1	23 23	23 24							
			24 24 24	2 1							
		1	24 24	4 5							
		3	24	6			~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~				4

		1	24	7	V////	77777			V////	<i>977777</i>	
		3	24 24 24	9							
		1	24 24	11 12							
		1	24	13				////	9777	X/////	
		3	24 24	16 17					W///	X/////	
		3	24 24	18 19					977		
		1	24 24	20 21						80000	
		1	24 24	23 24					900	80000	
		3	25 25	2							
		3	25 25	4	<i>1000</i>						
		1	25 25	5 6 7							
		3	25 25	9							
		3	25 25	10 11	1000				V////		
		1	25 25	13 14					(1111)		
		3	25 25	15 16	<i>1999</i>				W.	X/////	
		3	25 25	17 18					<i>9777</i>		
		3	25 25	20 21						90000	
		3	25 25	22 23						90000	
		1	25 26	1 1							
		1	26 26	3 4	0000						
		3	26 26	5							
E		1	26 26	7 8							
		1	26 26 26	9 10 11							
		3	26 26	12 13							
		3	26 26	14 15						X//////	
		3	26 26 26	16 17 19							
		3	26 26 26	19 20						8//////	
Ė	_	1	26 26	21 22							
		1	26 26 27	23 24 1							
		3	27	2 3							
	-	3	27	4 5							
	·	1	27 27 77	5 7 8							
		3	27 27	9 10							
		3	27 27	11 12					<i>9777</i>		
E		1	27	13 14							
		1	27	15 16 17							
		3	27	18 19	0000						
		3	27 27	20 21							
		3	27	22 23					V////	<i>7//////</i>	
		1	28 28	1 2				////	9777	X/////	
		3	28 28	3 4					977		
		1	28 28	5						80000	
		3	28 28	8 9							
		3	28 28	10 11							
		1	28 28	13	<i>11110</i>						
		1	28 28 28	15 15							
		3	25 25	17 18							
		3	28 28 28	19 20					V////		
		3	28 28	22 23					8 <i>0000</i>		
		3	28 29	24 1				<i>9999</i> .	9777	X/////	
		1	29	3					<i>9777</i>		
		3	29	5 6					9777	90000	
		3	29 29	7 8					9000	90000	
		1	29	10							
		3	29	12	<i>(1117)</i>						
	-	3	29 29	14 15							
		3 3	29 29 31	16 17							
		3	29 29	19 20						<i>}/////</i> //	
	-	3	29 29	21 22						<i>X//////</i>	
) 1	29 29	23 24							
		3	30 30	2 3							
Ė		3	30 30	5						X//////	
		, 1	30 30 30	6 7 8							
		1	30	9							
Ė	_	3	30 30	11 12						8//////	
		1	30 30 30	13 14 15							
		3	30 30	16 17							
		1	30 30	18 19							
		1	30 30	20 21							
		3	30 30 30	22 23 24							
	_	1	31 31	1 2						X/////	-
E		3	31 31	4							
<u> </u>		1	31 31 31	5 7							
		1	31 31	3							
		1	31 31	10 11							
 		1	31 31 37	12 13 14							
		3	31 31	15 16						<i>}/////</i> /	
	-	3	31 31	17 18							
		1	31 31	19 20						X//////	
		3	31 31 31	21 22 23							
	_	3	31 1	24 1						8//////	
		4	1 1	2 3 4							
		4	1	3 6							
		4	1	7 8							
		4	1	10							
		4	1 1	12 13						<i>X//////</i>	
		4	1	14 15							
		4		16	111111	111111	マンファンファンブラング	11111	11/1/	Y//////	

		4	1	18 19	7///	20070	V/////////////////////////////////////	(////	V////	<i>//////</i>	
		4	1	20 21		9000					
		4	1	22 23 24	= 1///	9000					
		4	2 2	1 2	= ////				<i>/////</i>		
		4	2 2	3 4		9000			<i>VIII</i>		
		4	2 2	5 5 7		(8////)					
		4 4 4	2 2	9		9000					
		4	2 2	11	=////	9000			<i>11111.</i>		
		4	2	13 14		9000					
		4 4	2 2	15 16	=////				<i>VIII.</i>		
	4	4	2	18 19	=////	9000					
		4	2 2	20 21 22	= ////						
		4	2 2	23 24		9000			<i>VIII</i>		
		4 4	3	2 3	= ////	9000					
		4	3	4 3		9000			<i>VIII</i>		
		4	3	7		9000			<i>VIII</i>		
		4	3	9		9000			<i>VIII</i>		
		4	3	11		9000			<i>VIII</i>		
		4	3	14	=////	9000			<i>VIII</i>		
		4	3	16 17	 ////	9000			<i>VIII</i>		
		4 4	3	19	=////				<i>VIII.</i>		
		4	3	21	_////						
		4 4	3 3 4	23 24	=///						
		4	4	2 3	=///						
		4 4	4	5	=////						
		4	4	7 8							
E		4	4 4	9 10	=////						
E		4	4	12	=////						
		4	4	14 15		9000			<i>VIII</i>		
E		4	4	16 17 18							
		4	4 4 4	19 20	 ////	9000					
E		4	4	21 22 23							
		4	5	24							
		4	5	3	=////						
	4	4	5	3 6					<i>/////</i>		
		4 4	5	7 8	=////						
		4	5	10 11		9999		VIII	VIII.		
		4 4 4	5	12 13							
		4	1 5 5	15					<i>/////</i>		
		4	5	17 18		9000			<i>VIII</i>		
		4	5	20	=////	9000			<i>VIII</i>		
		4	5	22		9000					
		4	6	1 2		9000					
		4	6	3	=////	9999		VIII	9777		
		4		6 7	-9///	9000			977		
		4	6	2	=////	9999		VIII	9777		
		4	6	11 12	-////	9000			977		
		4	6	13	 ////	9999		VIII	9777		
		4 4	6	15 16	-////	9000			977		
	4	4	6	18 19	-////	9000		VIII	9777		
		4	6	20 21 22	=////	99777		VIII			
		4	6	23 24		9000		VIII	9777		
		4 4 4	7 7	2	=////	991111		VIII			
E		4	7	4 5	=(///						
Ē		4	7	7	-(///	0/////	<i>}////}/////</i>				-
		4	7	9	=(///						
E		4 4 4	7 7	11 12	-(///						
		4	7	13 14 15							
		4	7	16 17	=7///						-
E		4	7 7	18 19 20							
		4	7	21	-(///						
		4 4	7 7 8	23 24	-(///						
		4		2	=(///						
Ē		4 4	1	3			<i>}////}/////</i>				
		4	- 1	7							
F		4	8	9 10	=(///						
E		4	8 8	11 12 13	=(///						
E		4	8	14 15	=(///	//////	<i>}////}/////</i>				
E		4	8	16 17 18		9////	<i>}////}/////</i>				
		4	8	19 20	=///	//////	<i>}////}/////</i>				
		4	8	21 22 23	=(///	9////	<i>}////}/////</i>				
	4	4	3 9	24			<i>}////}/////</i>				
F		4	9	3	= (///		<i>}////}/////</i>				
E		4	2	5			<i>}////////////////////////////////////</i>				
		4	9	7 8			<i>}////}/////</i>				
	1	4	2	9 10 11			<i>}////}/////</i>				
			9	12		991111					
	4	4	9	.,							
		4 4 4	2 2	14 15 16	= ////	9000					
	1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	4 4 4 4 4 4	9 9	14 15 16 17 18							
		4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4	9 9 9 9 9 9 9 9 9 9 9 9 9 9 9 9 9 9 9 9	14 15 16 17 18 18 19 20 20							
		4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4	9 9 9 9 9 9 9 9 9 9 9 9 9 9 9 9 9 9 9 9	22 34 15 16 17 18 20 20 21 22 22 23							
			9 9 9 9 9 9 9 9 9 9 9	22 24 35 36 37 28 39 20 21 22 22 23 24 3							

		4	10	5 6	V////	(/////		/////	V////	//////	
		4	10 10	7 8							
		4	10	10 11		<i>1000</i>					
		4 4	10 10	12 13		VIII			9000		
		4	10 10	14 15 16		<i>1000</i>					
		1	10 10	17 18		VIII			9000		
		4	10 10	20 21						<i>111111</i>	
		4	10 10	22 23							
		4	11 11	1 2	<i>11111</i>						
		4	11 11	4					(1) [1]		
		4	11	6 7				W.	(1111)		
		4	11 11	9							
		4 4	11	11 12							
		4	11 11	13 14							
		4	11 11	16 17							
		4	11 11 11	18 19 20	<i>/////</i>				V////		
		4	11 11	21 22							
		4	11 11 12	23 24 1							
		4	12 12	3							
		4	12 12 12	5 6							
		•	12	7 8							
		· ·	12 12 12	9 10 11						<i>{/////</i>	
			12 12	12 13							
		· ·	12 12 12	14 15 16							
E		4	12 12	17 18							
		4	12 12 12	20 21							
E		4 4	12 12 17	22 23 34							
		4	13	1 2							
		4	13 13	4							
		4	13	6 7							
F	· · · · · · · · · · · · · · · · · · ·	• •	13 13 13	9 10							
		6	13 13	11							
		4 4	13 13	13 14 15							
		4	13 13	16 17							
		4 4	13 13	18 19 20							
		4	13 13	21 22							
		4	13	24 1						VIII)	
		4	14	3						<i>111111</i>	
		4	14 14	5 6						<i>111111</i>	
		4	14	7 8							
		4	14	10 11							
		4	14 14	12 13							
		4	14	15 16							
		4	14 14	17 18 19							
		4	14 14	20 21							
		4 4	14 14 14	22 23 24							
		4	15 15	1 2							
		4	15 15	4 5							
		4	15 15	7							
		4 4	15 15	9						<i>111111</i>	
		4	15 15	11 12							
		4	15 15	14 15							
		4	15 15 15	16 17 18							
		1	15 15	19 20							
E		1 1	15 15 15	21 22 23							<u> </u>
		· · · · · · · · · · · · · · · · · · ·	15 16 16	24 1							
		4 4	16 16 16	3 4							
F		4 4	16 16 16	5 6 7							
<u> </u>		4	16 16	ž 9							
F		4 4	16 16 16	10 11							
		4 4	16 16 16	12 13 14							
F		•	16 16 16	15 16 17							
		4	16 16	18 19							
		4 4	16 16 16	20 21 22							
		1	16 16	23 24							
	· · · · · · · · · · · · · · · · · · ·	• •	17 17 17	1 2 3						<i>}//////</i>	
		6	17	5							
E		6 6	17 17 17	7 8							<u> </u>
			17	9 10							
		· ·	17 17 17	11 12 13							
	-	4	17 17	14 15							
		· ·	17 17 17	16 17 18							
		4	17	19 20							
E		• •	17 17 17	21 22 23							
	-	4	17 18 18	24 1							
E		· ·	18 18 18	2 3 4							
	-	4	15 15 15	5 6							
		4 4	15 15	9							
F		4 4	18 18 18	10 11							
		4	18 18	13 14							
			18	15			~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~				

-			18 18	16 17	97777	/////		<i>97777</i>	//////	
			18 18	18 19						
			18 18	20 21 22					<i>{/////</i> }	
			18 18	23 24				<i>VIII</i>		
			19	2				<i>VIII</i>	<i>{/////</i> }=	
			19	4 5				<i>VIII</i>		
			19 19	7				<i>VIII</i>	<i>(((((</i> (((((((((((((((((((((((((((((((
			19	9				<i>11111.</i>		
			19 19	11 12					<i>{/////</i> }=	
			19	14 15						
	4		19 19	16 17						
			19 19 19	18 19 20					<i>//////</i> -	
			19 19	21 22				<i>VIII</i>		
			19 19 20	23 24 1					<i>{/////</i> }	
			20	2				<i>VIII</i>		
			20	5				<i>VIII</i>	<i>{/////</i> }=	
			20 20	7 8				<i>VIII</i>		
			20 20	9 10				<i>VIII</i>	<i>(((((</i> (((((((((((((((((((((((((((((((
			20	12				<i>VIII</i>		
			20	14 15	<i>(1111)</i>			<i>VIII</i>		
			20 20 20	16 17 18				<i>VIII.</i>	<i>{/////</i> -	
			20 20	19 20	<i>000.</i>			<i>000.</i>		
			20 20 20	21 22 23					<i>{/////</i> }=	
E			20 21	24						
E			21 21 71	2 3 4						
E			21 21	5					(/////	
F			21 21 21	7 8 9						
			21 21	10 11						
			21 21	12 13				<i>/////</i>		
			21 21 21	15 16						
			21 21	17 18						
E		 	21 21 21	20 21					(/////	
			21 21	22 23					(/////	
			21 22 22	24 1 2					<i>//////</i> -	
			22 22	3 4	<i>000</i>			VIII.		
			22 22	5	<i>000</i>			<i>000.</i>	<i>//////</i> =	
			22 22	9	<i>000.</i>			VIII.		
			22 22 22	10 11						
			22 22	13 14				<i>/////</i>		
			22 22	15 16				<i>VIII</i>	<i>(((((</i> (((((((((((((((((((((((((((((((
			22 22	18 19				<i>11111.</i>		
			22 22	20 21					<i>{/////</i> }=	
	4		22	23 24				977	<i>//////</i> E	
			23 23	2	9777			9777	<i>{/////</i> //=	
			23 23	4 5				977	<i>//////</i> E	
			23 23	7	9777			9777	<i>{/////</i> //=	
			23 23 23	9 10	977			977	<i>{//////</i> =	
			23	11 12				9777	<i>{/////</i> }	
			23 23 23	14 15	977			977	<i>{//////</i> =	
	4		23 23	16 17				9777	<i>{/////</i> }	
			23 23 23	18 19 20					<i>{/////</i> //=	
			23 23	21 22	9777			9777	<i>{/////</i> _	
			23 23 24	23 24	9000				<i>{/////</i> //=	
E			24 24	2 3						
E			24 24 24	4 5						
E			24 24 24	7 8					<i>{/////</i> }	
E			24 24 24	9 10 11					<i>{/////</i> }	
			24 24 24	12 13					<i>{/////</i> }	
			24 24 24	14 15					<i>{/////</i> }	
E			24 24	16 17 18					<i>{/////</i> }	
			24 24	19 20					<i>{/////</i> }	
			24 24 24	21 22 23					<i>{/////</i> }=	
E			24 25	24					<i>{/////</i> }	
Ē			25 25 25	2 3 4					(/////	
			25 25	5 6						
Ē			25 25 25	7 8					(/////	
E			25 25 25	9 10 11					<i>{/////</i> }	
Ė			25 25 25	12 13					(/////	
E		 	25 25	15 15					(/////	
			25 25	17 18						
			25 25 25	19 20 21					<i>{/////</i> }	
	4		25 25	22 23						
F			25 26 26	24 1 2					(/////	
			26 26	3 4					<i>{/////</i> }	
-			26 26 25	5 6 7					(/////	
			26 26 26	9					<i>{/////</i> }	
					11111	111111	1////	11/1//		
	4		26 26	11	1////	10000		11/1//		
			26 26 26 26 26 26	10 11 12 13 14						
	1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1		26 26 26 26 26 26 26 26 26 27 28	13						
			25 25 25 25 25 25 25 25 25 25 25 25 25 2	13						
			26 25 25 25 25 25 25 25 25 25 25 25 25 25	13						
			26 26 26 26 26 26 26 26 26 26	13						

	4		27	3	77777	11/1/	<i>01111111111</i>	(1/1/2	(////	(1)11111	
	4		27	5 6	<i>*/////</i>						
	4		27 27	7 8							
	4 4		27 27 27	9 10 11							
	4		27 27	12 13							
	4		27	14 15	<i>*/////</i>						
	4		27 27	17 18							
	4		27 27 27	19 20 21	<i>*************************************</i>						
	4		27	22 23		<i>Y/////</i>					
	4		27 28 28	24 1		<i>Y/////</i>					
	4		28 28	3 4		<i>Y/////</i>					
	4		28 28	5		<i>Y/////</i>					
	4		28 28 28	8 9		<i>Y/////</i>					
	4		28 28	10 11							
	4		28 28	13 14							
	4 4		28 28	15 16		<i>Y/////</i>					
	4 4		28 28 28	17 18 19							
	4		28 28	20 21							
	4		28 28 28	22 23 24	<i>*************************************</i>						
	4		29 29	1 2							
	4		29 29 29	4							
E	4 4		29 29	6 7							
E	4		29 29	9							
	4 4		29 29	11 12							
Ē	4		29 29 29	13 14							-
E	4		29 29 29	15 16 17							
Ė	4		29 29 29	18 19							-
E	4		29	20 21 22							
	4		29 29	23 24	1////						
E	4		30 30	2 3							
	4		30 30	4 5							
	4		30 30 30	5 7 8							
	4		30 30	9 10		V////					
E	4		30 30 31	11 12 11							-
	4 4		30 30	14 15							
F	4		30 30 30	16 17							
	4		30 30	19 20		V////					
	4		30	21 22	<i>1000</i>	<i>9000</i>					
	4		30	24 1		VIII.					
	5		1	3		<i>9000</i>					
	5		1	5 6							
	5		1	7 8							
	5		1 1	9 10 11							
	5		1	12 13							
	5		-	14 15 16							
	5		1 1	17 18							
	5 5 5		1	20 21							
	5		1	22 23							
	5		2 2	24 1 2	<i>*/////</i>						
	5		2 2	3 4							
	3		2 2 2	5 6	<i>111111</i>						
	3		2 2	8 9							
	3		2	10 11							
E	3 3 3		2 2	13 14							
	5		2 2	15 16							
E	5		2 2	17 18 19							
Ė	5		2 2	20 21	(////						-
	5 5 5		2 2 2	22 23 24							
	5		3	1 2	(////						
	5		3	3 4 5	(////						
	3		3	6 7							
	5		3	9 10	1////						
	3		3	11 12							
	3		3	13 14							
	3		3	16 17							
	5		3	18 19	(////						-
	5 5 5		3	20 21 22							
E	5		3	23 24	(////						-
E	5 5 5		4	2 3							
	5		4	4 5	(////						
	5		4 4	5 7 8	(////						
	5		4	9 10							
	5		4 4	11 12 13	1////						
	3		4	14 15							
	3		4	16 17 18							
	5		4	19 20							
	5		4	21 22 71							
	3		4	24 1							
	3		5	3							-
	3 3 3		5	5							
	5	-	5	7 8	1////						-
	3 3 3 3		5 5	10 11							

1	5		5	1	14	V////	/////	07777	/////	(/////	/////	<i>777777</i>	
	5		5	=	16 17					<i>(1111)</i>			
	5		5		18 19					W			
	5		5	=	20 21	<i>97777</i>				<i>97777</i>			
	5		5	=	23 24	<i>{/////</i>				W		V/////	
	5		6		1 2	<i>7777</i> 7					7777		
	5		6	1	3	<i>/////</i> :					9777)	8/////	
	3		6		6 7	(////		VIII.					
	5		6		9	<i>(////</i> :		<i>9999</i>		<i>10000</i>			
	5		6		10 11								
	5		6	=	13	97777		<i>97777</i>		<i>97777</i>			
	3		6	#	15 15	<i>{/////</i>				W	999)	V/////	
	5		6		17 18	<i>77777</i>						<i>777777</i>	
	5		6		19 20				WW.		9999)		
	3		6	=	21 22	0000		VIII	9999.	<i>10000</i>	9999)	<i>90000</i>	
	3		6 7	#	24 1								
	5		7		2 3	<i>1777)</i>		<i>111111</i>	/////	<i>111111</i>		<i>//////</i>	
	5		7		4 5	<i>9999</i>						<i>VIII</i>	
	3		7	=	7	9777			7777		7777		
1	5		7	#	9								
1	5		7		11 12	<i>(////</i> :		<i>9999</i>		<i>10000</i>			
1	5		7		13 14	<i>1999</i>		<i>97777</i>	9999	MAN	9999		
	3		7		15 16	80000		<i>97777</i>	9999	<i>\$7777</i> 7	9999		
1	3		7 7	#	18 19								
	5	1	7 7	#	20 21								
	5		7	7	22 23								
	5		7 8 -	#	24 1								
1	3		5 5 8	#	3 4								
1	5			#	5								
1	5		8	3	7 8								
	5		-	#	9 10								
	3		8	#	12 13							<i>{/////</i>	
	5			Ⅎ	14 15								
1	5		8	₹	16 17								
	3		8		18	80000		<i>97777</i>	9999	<i>\$7777</i> 7	9999		
	3		8	=	20 21 22	WW.							
	5		8	=	23 24	<i>(/////</i>			VIII.				
	5		9		1 2	(////			<i>7777</i>	<i>(/////</i>	9999		
	5		9		3 4					V/////			
			9	=	6 7	9999			9999				
	5		9		9	<i>1777</i>		<i>111111</i>	/////	<i>\\\\\\</i>		<i>//////</i>	
	5		9		10 11								
	3		9		12	<i>77777</i> ,			<i>7777.</i>			80000	
	3		2	#	15 15								
	5		9		17 18	<i>(////</i> :		<i>9999</i>		<i>10000</i>			
	5		9		19 20						9999		
	5		9	=	21 22	97777		<i>97777</i>		<i>97777</i>			
	5		9	#	24 1	<i>77773</i>		97777					
	5		10 10		2 3							<i>VIII)</i>	
	5		10		4 5	<i>/////</i>			VIII.				
	3		10 10	#	7 8								
	5		10	1	20	<i>0000.</i>		VIII)	<i>9999</i> .	<i>VIII</i>	9999	<i>90000</i>	
	5		10 10		11 12							<i>VIII</i>	
	5		10	1	13	9////		9////				<i>//////</i>	
1	3		10	=	15 16	9000							
1	5		10	=	18 19	<i>(/////:</i>			<i>11111.</i>			80000	
1	5		10 10		20 21	<i>(////</i> /		V////	/////				
1	5		10	Ŧ	22 23								
1	3		10 11	#	24 1 2								
1	5	·	11 11	#	3								
1	5		11 11		5 6							<i>VIII)</i>	
1	5		11 11	#	7 8								
1	3		11 11	#	10 11								
1	5	i .	11	╛	12 13								
1	5		11	Ŧ	14 15								
1	3		11 11	#	16 17								
1	5	1	11	#	19								
1	5		11 11	1	21 22							<i>Y/////</i>	
1	5		11	3	23 24							8//////	
1	5		12	#	1 2 3								
1	5		12	#	4 5								
1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	5			1	6 7								
1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	5		12 12	Ŧ	2								
1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	3		12 12	#	10 11								
1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	5	1	12	#	13								
1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	5		12 12	1	15 16								
1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	5		12	Ŧ	17 18								
1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	3		12 12 17	#	19 20 21								
1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	5	1	12	#	22 23								
1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	5		12 13	1	24 1								
1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	5		13 13	3	3							8//////	
1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	3		13 13	#	5								
1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	5		13	#	7 8								
1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	5		13	1	9								
1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	5		13	4	11 12								
1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	3		13 13	#	14 15							<i>{//////</i>	
3 3 4 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5	5	1		#	16								
3 1 2 2 3 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4	5	i	13	#	18 19								
5 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2	5		13 13	Ŧ	20 21								
	3		13	#	22 23								

		5	14	1	(////				(////	<i>777777</i>	
		5	14 14 14	3 4							
		5	14 14	5 6							
		5	14	7 8		////		////		<i>V/////</i> .	
		5	14	10 11	<i>{/////</i>					V/////	
		5	14	12	9777					<i>10000</i>	
		5	14	14 15	<i>/////</i> :						
		5	14	26 27 28							
		5	14	19 20	<i>77777</i>						
		5	14 14	21 22						<i>7/////</i>	
		5	14	23 24	97777						
		5	15 15	2 3	(<i>()))))</i>			<i>(111)</i>		VIII)	
		5	15 15	4 5						V/////	
		5	15 15	7	<i>97777</i> ,				977	<i>111111</i>	
		5	15 15	9							
		5	15 15	11 12	(////						
		5	15 15	13 14	0000					<i>90000</i>	
		5	15 15	15 16							
		5	15 15	18 19							
		5	15 15	20 21	<i>(////)</i>			////		<i>7/////</i>	
		5	15 15	22 23							
		5	16 16	1 2	<i>77772</i> ,						
		5	16 16	3 4							
	-	5	16 16	5						<i>{/////</i>	
		5	16 16	7 8 9							
		5	16 16	10 11							
	_	5	16 16	12 13							
		5	16 16	14 15							
<u> </u>		5	16 16	16 17 18							
		5	16 16	19 20							
Ė		5	16 16	21 22						\$/////	
		5	16 16	23 24							
<u> </u>		5	17	2 3							
		5	17 17	4 5							
Ė		5	17	6 7							
		5	17	9	<i>97777</i> ,						
		5	17	11 12	<i>(////)</i>						
		5	17 17	13 14							
		5	17	15 16				<i>/////</i>		<i>77777.</i>	
		5	17	17 18	<i>9777</i>					<i>77777</i> 2	
		5	17 17	20 21						<i>}//////</i>	
	-	5	17	22 25							
		5	17 18 18	24 1							
		5	18 18 18	3 4							
		5	18	5 6						<i>\$[[][][]</i>	
E		5	18	7 8							
		, 5	18 18 18	9 20 21							
		5	18 18	12 13							
E		5	18 18	14 15						<i>{//////</i>	
		5	18 18	16 17						8/////	
		5	18 18 18	19 20							
		5	18 18	21 22						<i>{/////</i>	
E		5	18 18	23 24							
		, 5	19 19 10	2 1							
		5	19 19	4 5							
		5	19 19	6 7							
E		5	19	9							
 		5	19 19 19	10 11 12							
E		5	19	13 14							
E		5	19 19	15 16						<i>\$/////</i> /	
		5	19 19	17 18							
		5	19	20 21							
Ė		5	19 19	22 23						<i>{//////</i>	
		, 5	19 20 20	24 1							
		5	20	3 4						8/////	
	_	3	20 20	5							
		5	20	7 8						<i>{/////</i>	
 		5	20 20	9 10 11							
		5	20	12							
		5	20 20	14 15							
E		5	20	16 17							
 		5	20 20 20	18 19 20							
		5	20	21 22						<i>{/////</i>	
	-	5	20 20	23 24							
		5	21 21 21	2							
		5	21 21	4 5						<i>\/////</i>	
		5	21	6 7						8//////	
	-	5	21 21	3 9							
		5	21 21	10 11						<i>{/////</i>	
		, 5	21 21 21	12 13							
		5	21 21	15 16							
		5	21 21	17 18						<i>\/////</i>	
		5	21 21	19 20							
		5	21 21 21	21 22 23							
		5	21 22	24						<i>\$[[]][]</i>	
	-	5	22 22	3							
		5	22 22 22	5							
		5	22 22	7 8						<i>\/////</i>	
		5	22 22 22	9						8/////	
. —		5	22	11	villi.	1000	~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~	10000	111111		

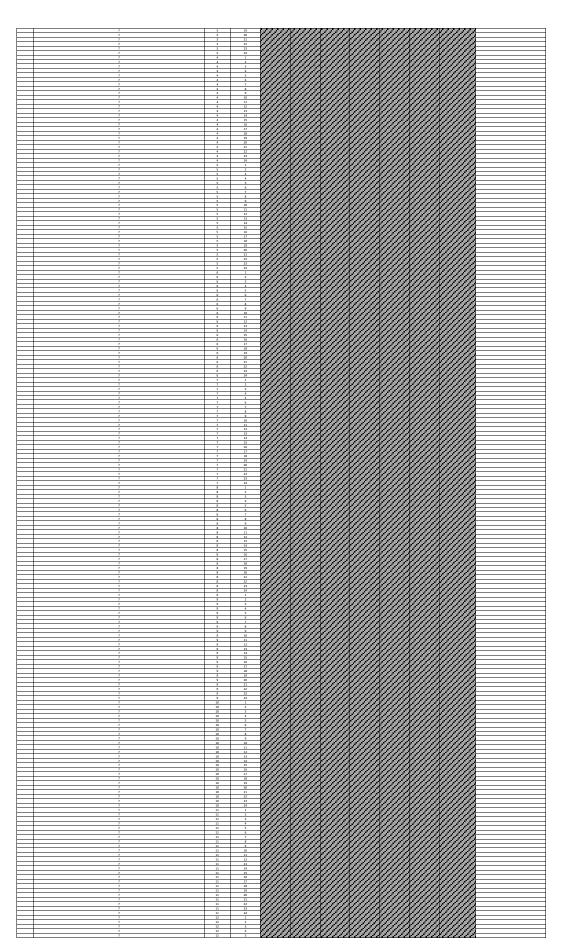
1		3	22 22	12 13	/////		/////	//////	
1		5	22	14 15					
1		3	22 22 22	16 17 18					
1		5	22 22	19 20					
1		5	22 22	21 22					
1		5	22 23	24 1					
1		3 5	23 23	3					
1		3	23 23	5 6					
1		3 5	23 23	7 8					
1		5 5	23 23 23	10 11					
1		5 5	23 23	12 13					
1		3	23 23 23	14 15 16					
1		5	23 23	17 18					
1		5	23 23 23	19 20 21					
1		5	23 23	22 23					
1		5	23 24	24 1					
1		5	24 24	3 4					
1		3 5	24 24	5 6					
1		3	24 24	1 2					
1		5	24 24	10 11					
1		5	24 24 24	12 13 14					
1	Ξ	5	24 24	15 16					
1		5	24 24 24	17 18 19					
1		5	24 24	20 21					
1	+	5	24 24 24	22 23 24					
1		3 5 5	25 25	1 2					
1		3	25 25 25	3 4 5					
1		5	 25 25	6 7					
1		3 5	25 25	9					
1	_	3 3	 25 25	11 12					
1		5	25	13					
1		5 5 	25 25 25	15 16 17					
1		5 5	25 25	18 19					
1		5 5	25 25 25	20 21 22					
1		5	25 25	23 24					
1		5	26 26 26	2 1					
1		5	26 26	4 5			<i>000.</i>		
1		5	26 26 26	6 7 8					
1		5	26 26	9					
1		5	25	11 12					
1		3	26 25	14 15					
1		3 5	26 26	16 17					
1		3	26 25	19 20					
1		3 5	26 26	21 22			<i>000.</i>		
1		5	26 27	24 1			999),		
1		5	27	3			<i>000.</i>	<i>111111</i> 11	
1		5 5	27 27 27	5 6			<i>000.</i>		
1		5	27	7 8			<i>000.</i>		
1		5	27 27 27	9 10 11					
1		5 5	27 27	12 13			<i>000</i>		
1		3	27 27 27	14 15 16					
1		5	27 27	17 18			<i>999</i>		
1		5	27 27 27	20 21				(/////)	
1		3 5	27	22 23					
1	==	3	27 28 78	24 1					
1		3 3 3		3 4					
1		5	28 28 78	5 6 7					
1	_	3 3		8 9					
1	7	5		10 11					·
1		5 5	28 28	12 13 14					
1		5	28						
1		5	28 28	17 18 19					
\$ 1.		5		20 21					
1	=	3	28 28 78						
1		5 5	29 29	1 2					
1	=	5	29 29	4					
1		3 3 3	29 29	6 7					
1 22 14 1 22 15 1 22 15 2 2 15 2 2 15 2 2 15 2 2 15 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 3 2 2 3 3 2 2 4 3 2 2 4 4 2 2 4 5 2 2 4 6 2 2 5 7 2 2 6 7 2 2 7 8 2 2 8 9 2 2 9 9 9 9 9 9 9 9 9 9 9 9 9 9 9 9 9 9 9		3	29	9 10					
1 22 14 1 22 15 1 22 15 2 2 15 2 2 15 2 2 15 2 2 15 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 3 2 2 3 3 2 2 4 3 2 2 4 4 2 2 4 5 2 2 4 6 2 2 5 7 2 2 6 7 2 2 7 8 2 2 8 9 2 2 9 9 9 9 9 9 9 9 9 9 9 9 9 9 9 9 9 9 9		5 5 5	29 29	11 12					
1 2 2 12 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1		5	29 29	13 14					-
1 1 22 14 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	_	5 5 5		17					
		5	29 29						
		3	29 29 29	20 21 22					
	+	3 5		23 24					
1 22 1 1 22 1 1 2 2 1 1 2 2 1	\pm	5		1 2					
1 20 5 1 20 7 1 30 8	_		 30 30	4 5					
· · · · · · · · · · · · · · · · · · ·	\pm	5	30 30	7					-
5 20 21 22 12 14 14 14 14 14 14 14 14 14 14 14 14 14			30 30	9 10					
3 2 2		5	30 30	11 12					
		3	30 30 30	13 14 15					
		5							
1 2 1		5	30 30 30	18 19 20					
		3	30 30	21 22					

H	5		30	-	23 24		(////	7////	7////		
	5		31 31		2	<i>000</i>		80000	V////		
	5		31		4	<i>0000</i> .		80000	V/////		
	5		31 31 31		5 6 7			<i>8000</i>			
	5		31 31		3 9				<i>1777)</i>		
	5		31 31		10 11			<i>VIII</i>	9777		
	5		31 31 31		12 13			<i>WW.</i>	V////		
	5		31 31		15 16						
	5		31 31		17 18	9777.		XIII	<i>7777</i> 77		
	5		31 31		20 21				<i>//////</i>		
	5		31 31		22 23	/////		<i>8000</i>	<i>(1111)</i>		
	5		31		24	/////		X/////	VIII).		
	6		1		3 4	<i>////</i> /		<i>9000</i>	V////		
	6		1		5						
	6		- 1		7			<i>Y////</i> /			
	6		- 1		10 11			<i>\$11111</i>	10000		
	6		1		12 13			WWW.	VIII.		
	6		1		14 15	VIII.		V////	<i>77777</i> ,		
	6		1		16 17 18			XIIII			
	6		1 1		19 20						
	6		1		21 22	VIII.		XIII (VIII.	<i>90000</i>	
	6		1		23 24			<i>\$////</i> /	<i>10009</i>		
	6		2 2		2						
Ħ			2 2	∄	4 5						
H	6		2 2	7	7					<i>///////</i>	
H	6		2 7	#	9 10						
Ħ	6		2 2	=	11 12			X/////			
Ħ	6		2	Ŧ	13 14						
Ħ	6		2 2	#	15 16 17			<i>(() () (</i>			
EŦ	6 6		2 2	=	18 19						
	6		2 2	⇉	20 21						
Ħ	6		2 2	#	22 23 34			<i>\$[[]]</i>			
E	6 6		3	#	1 2			<i>}////</i>			
	6		3	=	3 4			<i>W////</i>			
	6		3		5	9777		VIII	<i>77777</i> ,		
	6		3		1 2						
	6		3		10 11	<i>0000.</i>		<i>9000</i>	<i>(1111)</i>		
	6		3		12 13			<i>\////</i>	<i>17779</i>		
	6 6		3		14 15				<i>1777)</i>		
	6		3		17 18			<i>WW.</i>	VIII.		
	6		3		19 20	VIII.		X////	<i>7777</i> 7,		
	6		3		21 22	<i>11111</i>		<i>8000</i>	<i>(1111)</i>		
	6		3		23 24	/////		X/////	VIII).		
	6		4		2			<i>\$11111</i>	<i>V////</i>		
	6		4		4 5			<i>Y////</i> /	V////		
	6		4		7	(1111)		<i>\$11111</i>	10000		
	6		4		9			<i>87777</i> 2			
	6		4		11 12			<i>VIII</i>			
	6		4		13	/////		X////	<i>77777</i>		
	6		4	=	16 17	/////		V////	<i>/////?</i> ;		
	6		4		15 19						
	6		4		20 21 23	<i>0000</i> .		80000	<i>17779</i> .		
	6		4		23 24	<i>(1117)</i>		<i>9000</i>	<i>(1111)</i>		
	6		5		2			<i>\$////</i> //	<i>17779</i>		
	6		- 5		3			<i>Y////</i> /	<i>1999</i>		
	6		5		5 6 7			<i>VIII</i> .	97777		
	6		5	1	9						
H	6		5	#	10 11						
Ħ	6		5	#	12 13 14						
Ħ	6		5	=	15 16						
Ħ	6		5	Ŧ	17 18						
Ħ	6 6		5 5	#	20 21			8////			
Ħ	6		5	1	22 23			8////			
H	6		5	Ŧ	24						
Ħ	6		6 6	#	3 4			<i>\$[[]]</i>			
Ħ			6	∄	5			<i>\$[[]]</i>			
	6	•	6	7	7 8						
H	6		6	#	9 10 11						
Ħ	6 6		6	#	12 13			X////			
	6 6	-	6	⇉	14 15			801110			-
H	6		6	Ŧ	16 17						
Ħ	6		6	#	18 19 20			\$////			
	6 6		- 6	_	21 22						
	6	•	6	7	23 24						
	6		7 7	#	2 1			X////		8//////	
\vdash	6 6		7	#	4 5						
Ħ	6		7	=	6 7			8////			
H	6		7	7	9						
Ħ	6		7 7	#	10 11 12						
	6		7 7	#	13			<i>\$[[][]</i>			
H	6		7	\equiv	15 16			3////		<i>Y//////</i>	
	6		7 7	#	17 18						
\vdash	5 5		7 7	#	20 21			X////			
Ħ	6		7	=	22 23			801110			
H	6		7 8	7	24 1			\$/////			
	6		- 1	#	3 4			\$////			
	6 6		- 1	_	5						
H	6		8	7	7 8						

		6	8	10 11	V////	7////		V////	/////	
		6	1	12 13						
		6	-	14 15 16					/////	
		5 6	-	17 18				<i>/////</i>	/////	
		6	-	19 20				<i>VIII</i>	/////	
		6	-	22 23				<i>11111.</i>	/////	
		6	9	24 1				<i>VIII</i>	/////	
		6	9	3 4				<i>11111.</i>	/////	
		6	9	5					/////	
		6	9						/////	
		6	9	10 11						
		6	9	12 13 14					/////	
		6	9	15 16				<i>VIII</i>		
		6	9	17 18 19					/////	
		6	9	20 21						
		6	9	22 23 24		VIII			/////	
		6	10 10	2		VIII		9777		
		6 6	10 10	4 5					/////	
		6	10 10	6 7		VIII		9777		
		6 6	10 10	9	7 7777	VIII			/////	
		6	10	11 12	9777	VIII		977	/////	
E		6 6	10 10	13 14					/////	
		6	10 10	15 16 17					/////	
E		6 6	10	18 19					/////	
		6	10 10	20 21 22					/////	
E		6	10	25 24					/////	
E		5 6	11 11 11	2 3					/////	
		6	11 11	5		VIII		9777		
		6 6	11 11	5 7 8					/////	
		6	11 11	9 10		VIII		9777		
F		6	11 11 11	11 12 13					/////	
		6	11	14 15						
		6	11	16 17	<i>9000</i>	M		9777	/////	
		6 6	11	19 20		<i>9000</i>				
		6	11	21 22		<i>9000</i>			/////	
		6	11 11 12	23 24 1					/////	
		6 6	12 12	2 3						
		6 6	12	5 6		VIII		977	/////	
		6	12 12	7 8						
		6	12 12	9 10 11		VIII			/////	
		6	12 12	12 13		VIII		9777		
		6 6	12 12	14 15	7 7777	VIII			/////	
		6	12 12	17 18						
		6 6	12 12	19 20 21					/////	
		5 6	12 12	22 23						
		5 6	12 13	24 1 2	<i>7777</i>				/////	
		5 6	13 13	3 4					/////	
		6 6	13 13	6 7	<i>7777</i>				/////	
		6 6	13	8 9					/////	
		6	13	10 11					/////	
		6	13	13 14					/////	
		6	13	15 16					/////	
		6 6	13 13	17 18 19					/////	
		6	13 13	20 21					/////	
		5 5	13 13 13	22 23 24	(////				/////	
		5 5	14 14	1 2					/////	
		6 6	14 14 14	3 4 5	(////				/////	
		6	14	6 7					/////	
		6	14 14 14	9 10					/////	
		6	14 14	11 12					/////	
		6	14 14 14	13 14 15					/////	
		6	14 14	16 17					/////	
E		6 6	14 14 14	18 19 20					/////	
		6 6	14 14 14	20 21 22					/////	
Ē		6 6	14 14	23 24					/////	
E		5 5	15 15 15	2 3					/////	
E		6 6	15 15 15	3					/////	
E		6 6	15 15	7 8					/////	
E		6	15 15	9					/////	
		5 5	15 15 15	11 12 13					/////	
		6	15 15	14 15					/////	
E		6	15 15	16 17					/////	
		6	15 15	19 20					/////	
_		6 6	15 15 15	21 22 23					/////	
	+	6 6	15 15	24 1					/////	
			16 16	2 3					/////	
		6	1.0							
		5 5 5 5	16 16 16	5					////// 	
		5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5	16 16	5 6 7						
		5 6 6 6 6 6 6 6 6 6 6 6 6 6 6 6 6 6 6 6	16 16 16	4 5 6 7 8 9 10						
		5 5 6 8 0 0 1 1 1 1 1 1 1 1	16 16 16	4 5 6 7 8 9 20 11 12 12						
		6 6 8 9 9 9 9 9 9 9	16 16 16	4 5 6 7 8 9 10 11 22 23 14 25 16						
			16 16 16 16 16 16 16 16 16 16 16 16 16	4 5 6 7 7 8 9 20 20 21 12 22 23 24 26 27 28 28 29 20 20 21 22 23 24 25 26 27 27 28 28 28 28 28 28 28 28 28 28 28 28 28						

		6	16	21	(////	/////	077777777	(7777)	07777	<i>7777777</i>	
		6 6	16 16	22 23 24							
		6	17 17	2							
		6	17	4		////		////		<i>77777</i> 77	
		6	17	5 6 7	<i>{/////</i>						
		6	17 17	3 9							
		6 6	17 17	10 11	977						
		6	17	13	<i>7777</i> 77					80000	
		6	17	15 16						80000	
		6 6	17	17 18							
		6	17	20 21							
		6	17 17	22 23	<i>000.</i>						
		6 6	18	1 2							
		6 6	15 15	3 4							
		6	18 18 18	6							
		6	18 18	. s 9							
		6	18 18	10 11							
		6 6	18 18 18	12 13 14	9 <i>999</i>						
		6	18 18	15 16				<i>11111</i>		<i>77777</i> 77	
		6	18	17 18	<i>{/////</i>				WM	<i>VIIII</i>	
		6 6	18 18	20 21	<i>1777</i>						
		6	18 18	22 23							
E		6 6	18 19	24 1							
<u> </u>		5 6	19 19	3 4							
		6 6	19 19	5 6							
		6 6	19 19 19	7 8 9							
E		6	19 19	10 11							
		6	19 19	12 13							
		5 5	19 19 19	14 15 16							
E		6	19 19	17 18							
E		6 6	19 19	19 20							
		6	19 19 19	21 22 23							
		6	19 20	24 1							
E		6 6	20 20 20	3						<i>\/////</i>	
		6 6	20	3	9777					80000	
		6	20 20	7 8							
		6	20 20	9 10							
		6 6	20 20 20	11 12							
		6 6	20 20	14 15							
		6	20	16 17				<i>/////</i>			
		6 6	20	19 20							
		6 6	20 20	21 22	<i>7777</i>						
		6 6	20 20 21	23 24	(////						
		6	21 21	2	(1111)					<i>10000</i>	
		6	21 21	5							
		6 6	21 21 21	7 8	V////						
		6	21 21	9	<i>(/////</i>				977		
		6	21 21	11 12	<i>97777</i> ,				977		
		5 6	21 21 21	14 15	<i>(/////</i>					<i>9000</i>	
		6 6	21 21	16 17							
		6 6	21 21 21	18 19 20							
		6	21 21	21 22	(////					90000	
		6	21 21	23 24	<i>(1111)</i>					<i>90000</i>	
		6 6	22 22 22	2 1							
E		6	22 22	4 5							
E		6 6	22 22	7							
		6	22 22	9 30							
		6 6	22 22	11 12							
		6 6	22 22 23	13 14							
		6	22 22	16 17							
E		6	22 22 22	18 19							
		6	22 22 22	21 22							
		6	22 22	23 24							
		6	23 23 21	1 2 1							
E		6	23 23 23	4 5							
		6	23 23	6 7							
E		6 6	23 23	9							
E		6	23 23 23	10 11 12							
		6	23 23	13 14							
E		5 6 6	23 23 23	15 16							
		6	23 23	18 19							
	-	6	23 23	20 21							
		6 6	23 23 23	22 23 74						<i>{//////</i>	
		6	24 24 24	1 2						<i>}//////</i>	
E		6	24 24	3						<i>V//////</i>	
		5 5	24 24 24	5 6 7							
		6	24 24	9							
E		6	24 24	10 11							
		5 6	24 24 24	12 13 14							
		6	24 24	15 16							
		6 6	24 24	17 18							
		5 6	24 24 24	20 21							
		6	24 24	22 23							
		6 6	24 25 25	24 1							
		6	25 25	3 4							
		6 6	25 25	5 6							

	5	25 25	8 9	97777	/////	07777	/////	(/////	/////	177777	
	5	25 25 25	10 11					9000			
		25 25	12					(1111)			
	5	25 25 25	15 15					(1)11)			
		25 25	17 18								
	5	25 25 25	20 21								
		25 25	22 23	/////			////	V////	9999.	<i>90000</i>	
	5	25 26 26	1 2	<i>01111.</i>			/////	V////	9999.	<i>90000</i>	
	5	26 26	3 4	<i>/////</i>			////	VIII	9999.	<i>90000</i>	
		26 26 26	5 6 7	<i>/////</i>			/////	V////	9999.	<i>90000</i>	
		26 26	ž 9								
	5	26 26	10 11					(1)11)			
		26 25	13 14					(1111)			
		26 26	15 16	<i>0000.</i>			////	V////	9999.	<i>90000</i>	
	5	26 26 26	18 19					(1)11)			
	5	25 25	20 21					(1111)			
		26 26 26	22 23 24					(1)11)			
		27	2	/////			////	V////	9999.	<i>90000</i>	
		27 27 27	4 5	W//				(1)11)			
	5	27 27	6 7					(1)11)			
	5	27 27 27	9					(1)11)			
	5	27	11					(1)11)			
		27 27 27	13 14								-
E	5	27 27	15 16 17								
Ē	5	27	18 19								-
E	5	27 27 27	20 21 22								
	5	27 27	23 24								
		28 28 28	1 2 1								
	5	28 28	4 5								
Ξ	-	28 28 2*	7								
E	5	28 28	9								
		28 28	11 12								
		28 28 28	13 14 15								
	5	28 28	16 17								
		28 28 28	18 19 20								
		25 25	21 22								
	5	28 28	23 24								
		29 29	2 3								
	5	29 29	5								
		29 29 29	7 8								
	5	29 29	9 10								
	5	29 29 29	11 12								
	5	29 29	14 15								
	5	29 29	16 17								
		29 29	19 20								
	5	29 29	21 22						999)		
		29 29 30	23 24 1						999)		
	5	30 30	3						999)		
		30 30 30	5 6								
	5	30 30	7 8								
		30 30	9 10								
	5	30 30	12 13								
		30 30	14 15								
	 5	30 30	17 18								
	5	30 30	19 20								
	5	30 30	22 23								
	7	30 1	24 1								
	7 7	1 1	2 3 4								
	j j	1	5 6								
	,	1 1	7 8 9								
	,	1	10 11								
	7	1 1	12 13								
	,	1	15 16								
	7	1	17 18								
	7	1 1	20 21								
	7	1	22 23								
	 7	2 2	1 2								
	,	2 2	3 4								
	7	2 2 7	5 6 7	1////							
	,	2 2	9								
	7	2 2	10 11								
	7	2 2	13 14								
	,	2 2	15 16								
	, ,	2 2 2	17 18 19								
	7	2 2	20 21								
	,	2 2	22 23								
	7	3 3	24 1 2								
	7	3	4								
	, ,	3 3	5 6 7								
	7	3	S 9								
	7	3	10 11								-
			**	100000	111111		11/1//	レノノノノ		1777777	
	7	3	14			11/11/1		11/1/11		11111111	
	7	3 3	14 14 15 16								



		7		12	6	())))))	/////	(7777)	77777	<i>777777</i>	
		7 7 7		12 12 12	7 8 9						
		7		12 12	10 11						
		7		12	12		////	////		<i>V/////</i> .	
		7		12	15 16		/////			V/////	
		7		12 12	27 28				9999,	<i>10000</i>	
		7		12 12	19 20				9999)		
		7		12	21 22 23						
		7			24 1						
		7		13 13	3				/////	<i>7/////</i>	
		7		13	5				9999)		
		7		13	7 8		/////	/////		VIII)	
		7		13 13	9		<i>0000</i>	WW.	9999)	<i>VIIII</i>	
		7		13	12		<i>(////</i> /			<i>V/////</i>	
		7 7		13	14 15						
		7 7			16 17						
		7		13 13	18 19		111111		0000	<i>90000</i>	
		7			20 21 22						
		7 7		13 13	23 24						
		7			2					<i>7/////</i>	
		7		14	4		/////			<i>7/////</i>	
		7		14	6 7						
		7 7			9					8/////	
		7		14 14	10 11						
	<u> </u>	7		14 14	13 14					<i>{/////</i>	
	E	7 7		14	15 16						
	E	7 7			17 18						
	<u> </u>	7		14 14 14	19 20 21						
		7		14	22 23					<i>}//////</i>	
		7		14 15	24 1						
		7		15 15	2 3 4						
		7 7 7		15 15	5 6						
		7	-	15 15	7 8						
	E	7		15 15	9 10						
		7 7		15 15 15	11 12 13						
		7		15 15	14 15						
		7 7		15 15	16 17					WWW	
		7 7		15 15	18 19						
		7 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7		15 15	20 21 22						
		7		15 15	23 24		/////		9999		
		7		16 16	2		/////	III)		<i>VIII)</i>	
		7		16 16	3		<i>(////</i> /			<i>V/////</i>	
		7		16 16	5 6 7					VIIII	
		7		16 16	3 9		9999		9999	<i>90000</i>	
		7		16 16	10 11				9999		
		7		16 16	12						
		7		16 16	15 16		9999.				
		7		16 16	17 18		9999.			<i>VIII</i>	
		7			19 20			WW.		<i>7/////</i>	
		7		16 16	21 22 23						
7		7		16 17	24 1				9999,	<i>10000</i>	
7		7		17	3				9999)		
7		7		17	5						
7		7		17	7 8						
7		7		17 17	9		9999;		9999		
1		7		17 17	11 12						
1		7 7		17	14 15						
1		7	-	17 17	16 17						
1	E	7 7		17 17	18 19						
1	<u> </u>	7		17 17 17	20 21 22						
1		7		17 17	23 24						
1	E	7		18	2						
1		7		15 15 15	4 5					<i>}/////</i>	
		7 7		18	6 7						
T	E	7			9						
1		7		18 18	10 11						
7		7 7 7		18						8//////	
1		7		18 18	15 16						
1	E	7		18	17 18					<i>{/////</i>	
1		7		18 18 18	19 20 21						
1 00 1 0 1 0 0 0 0 0 0 0 0 0 0 0 0 0 0		7 7		18							
7		7 7	-	18 19	24 1						
7	E	7		19 19	3						
7		7 7		19 19 10	4 5						
7		7 7		19	7 8					<i>\$[[]][]</i>	
7 32 33 7 92 35 7 92 35 7 92 35 7 93 35 7 93 35 7 93 35		7		19 19	9 10						
7 32 33 7 92 35 7 92 35 7 92 35 7 93 35 7 93 35 7 93 35		7		19 19	11 12						
7 13 15 15 15 15 15 15 15 15 15 15 15 15 15		7 7 7			14 15						
		7 7		19	16 17						
	E	7		19 19	18 19					8//////	
		7 7		19 19	20 21						
		7 7 7								<i>{/////</i>	
7		7 7		20 20	1 2						
7	E	7		20	4						
		7		20 20 20	5 6 7					<i>\/////</i>	
7 20 10 7 20 10 7 20 10 7 20 10 7 20 10		7 7		20	8 9						
7 20 11 7 20 12 7 20 14	E	7		20 20	10 11						
7 5 5 5 7//////////////////////////////		7		20 20 20	12 13						
7 20 20 26 V L L L L L L L L L L L L L L L L L L		7		20 20	15 16					<i>9/////</i>	

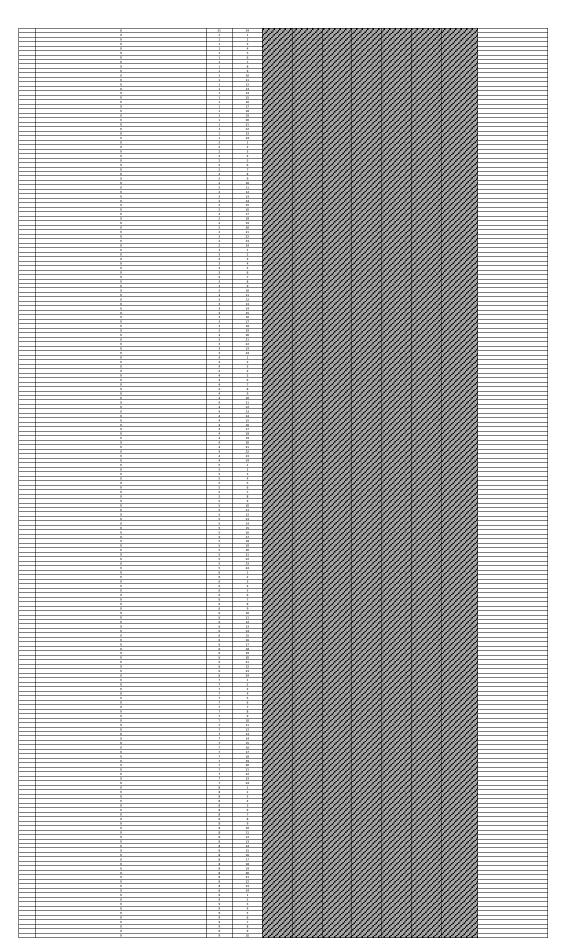
	7		20	17					11111	<i>777777</i>	
	7 7 7		20 20 20	18 19 20							
	7 7		20 20	21 22							
	7		20 20	23 24		////		////		<i>77777</i> 77	
	7		21 21 21	2 3	<i>97777</i>						
	7 7		21 21	4 5							
	7 7		21 21	6 7	9000				9999,	80000	
	7		21 21	9					9999,	80000	
	7 7		21 21	11 12							
	7 7		21 21 21	13 14							
	7		21 21	16 17							
	7 7		21 21	18 19							
	7		21	20 21	9 <i>000</i>				9999		
	7		21 21	23 24	<i>1000</i>				9999		
	7		22 22	2	<i>9999</i>				9999		
	7 7 7		22 22 22	4	(1111)						
	7		22 22	6 7	WW			WW.		<i>VIII</i> III	
	7		22 22	9	WW			WW.		<i>VIIII</i>	
	7		22 22	11 12	<i>77777</i>						
	7 7		22 22	13 14					9777		
	7		22	15 16							
	7		22 22	18 19	0000				9999	90000	
	7		22 22	20 21							
E	7		22 22	22 23							
	7 7 7		23	1 2							
	7		23 23	3 4							
E	7		23 23 23	5							
E	7 7 7 7		23 23 23								
	7		23 23	10 11						<i>//////</i>	
	7		23 23 23	12 13							
	7 7 7		23	15 16							
	7		23 23	17 18						<i>{//////</i>	
	7		23 23 23	19 20 31							
	7 7 7		23 23 23	22 23							
	7		23 24	24 1							
E	7		24 24	3							
	7		24 24 24	5 6	(1111)						
	7 7		24 24	7 8	WW			WW.		<i>VIIII</i>	
	7 7		24 24	9 10	<i>{/////</i>						
	7		24 24	12							
	7		24 24	14 15							
	7 7		24 24 24	16 17 28							
	7 7		24 24	19 20							
	7		24 24	21 22							
	7 7		24 24 25	23 24							
	7 7 7		25 25	2 3							
E	7 7		25 25	4 5							
	7 7 7 7		25 25 25	7 8							
	7		25 25	9							
	7		25 25 2*	11 12							
	7 7 7		25 25 25	14 15							
	7		25 25	16 17						<i>//////</i>	
	7		25 25 25	18 19 30							
	7 7 7		25 25	21 22							
	7		25 25	23 24						8/////	
	7 7		26 26 26	2 3						8//////	
E	7 7		26 26	4 5							
E	7		26 26	6 7							
	7 7		26 26 26	9							
	7 7		26 26	11 12							
E	7		26 26 26	13 14 15							
E	7 7		26 26	16 17							
	7 7	-	26 26	18 19							
	7 7		26 26 25	20 21 27							
E	7 7		26 26	23 24						<i>{//////</i>	
	7		27	2						<i>}//////</i>	
	7 7		27 27 27	3 4 5							
E	7 7		27	6 7							
Ė	7		27	9							
	7 7		27 27 27	10 11 17							
E	7 7		27 27	13 14							
	7 7		27 27	15 16							
	7 7		27 27 27	17 18 19							
E	7 7		27	20 21							
	7 7	-	27	22 23							
E	7		27 28 28	24 1							
E	7 7 7		28 28 28	3 4							
	7		28 28	5							
Ē	7		28 28	7 8							
	7 7 7 7		28 28 28	9 10 11							
	7		28 28	12 13							
	7		28 28 78	14 15							
E	7 7		28 28 28	15 17 18							
	7 7		28 28	19 20							
	7		28 28 28	21 22 21							
	7		28 29	24 1							
			29	2			***************************************		ACCUPATION OF THE PARTY OF THE		

			29 29	4 5	97777		V/////////////////////////////////////			(/////	
			29 29	6 7							
			29 29 29	9 10						//////=	
			29 29	11 12						//////	
			29 29	13 14							
			29 29	16 17						<i>/////</i> //	
			29 29 70	18 19						//////	
			29	21 22							
			29 29	23 24							
			30 30	2							
			30 30	5							
			30 30	7 8							
			30 30	9 10							
			30 30	11 12							
			30 30	14 15							
			30 30	16 17							
			30 30	19 20							
			30	21 22							
			30 31	24 1							
			31 31	3							
			31 31	5 6							
			31 31	7 8							
			31 31 31	9 10 11						(/////	
E			31 31	12							
			31 31 31	14 15						(/////	
E			31 31	17 18						<i>{/////</i> /=	
E			31 31 31	19 20 21							
E			31 31	22 23							
E			31	24							
			1 1	3 4							
			- 1	5							
E			1 1	8 9						(////)=	
	1		1	10 11							
			1 1	12 13 14						//////	
			i	15 16							
			1	17 18						//////	
	1		1 1	20 21							
			1	22 23 24						//////	
			2 2	1 2							
			2 2	4							
			2 2	6 7							
			2 2	9							
			2 2	11 12							
			2 2	13 14	9777					<i>{/////</i>	
			2 2	16 17							
			2	18 19	9777					<i>{/////</i>	
			2 2	20 21 22						<i>{/////</i> }	
			2	23 24						<i>{/////</i>	
			3	2	9777						
	1		3	4 5							
			3	7 8							
			3	9 10	9777						
			1	11 12	9000					<i>{/////</i>	
E			3	14 15						//////	
Ē			3	16 17							
			3	19 20						<i>//////</i> =	
E			3	21 22 23							
			3 4	24 1							
	1		4	3							
E			- 4	5 6						(/////	
			4	7 B							
			4 4	9 10 11						//////	
E			4	12 13						<i>{/////</i> /=	
Ē			4	14 15						(/////	
E		 	4	17 18						<i>{/////</i> }=	
Ē			4	19 20						(/////	
E			1	22 23						(/////	
Ė			5	24						<i>{/////</i> //	
E			5 5	3 4						<i>{/////</i> }=	
			5 5	6						(/////	
			5 5 5	7 8 9						(/////	
			5	10 11							
			5 5	12 13 14							
			5	15 16						<i>{/////</i> /=	
				17 18						<i>{//////</i> =	
	1		- 1		THE RESERVE OF THE PERSON NAMED IN	11/1//	V////X//////	111111	N N N N N N	(111111	
			5 5 5	19 20 21		11/1/12		111111		(//////	
			5 5 5 5 5	20 21 22 23							
			5 5 5 5 5 5	20 21 22 22 23 24 1							
			5 5 5 5 5 5 6 6	19 20 21 22 25 24 1 2 3 4							
			5 5 5 5 5 6 6 6 6 6 6 6 6 6	20 21 22 22 23 24 1 2 2 3 4 5 6							
			5 5 5 5 5 5 6 6 6 6 6 6	29 20 21 22 23 24 1 2 2 3 4 4 5 6 7 7							
			5 5 5 5 5 5 6 6 6 6 6 6 6 6 6 6	19 20 21 22 23 24 11 2 3 3 4 5 6 7 7 7 8 9 10 11 11							

	I I	6	-	15	/////	/////	0////	/////	177777	V////	177777	
	i i	6		17 18								
	I I	6	#	19 20 21								
	: !	6		22 23								
	! !	7	#	24 1								
	1	7 7		3 4								
	I I	7 7 7	=	5 6 7								
	i i	7	=									
	1	7	+	10								
	i I	7 7	#	13								
	i i	7		15 16								
	I I	7 7	=	17 18 19								
	I .	7		20 21								
	I I	7 7	#	22 23 24								
	I I	8		1 2								
	I I	8 8	=	4								
	i i			7					<i>VIII</i>	999	<i>10000</i>	
	1 1	8	#	9								
	i i			11 12					VIII			
	I I		#	13 14					VIII		X//////	
	i i	10 10		16 17					<i>VIII</i>	999	<i>10000</i>	
	1 1	8	£	18 19 20								
	i i	-	≢	21 22								
	I I	8	Ŧ	23 24								-
	I	9	#	2 3								
	I	9	Ŧ	5								-
	1 I	9	#	5 7 8								
		9	Ŧ	20								
	· •	9	#	11 12 13								
	i i	9	⇟	14 15								
	1	9	#	16 17 18								
	1	9	\pm	19 20								
	1	9	+	22					<i>VIII</i>	999	X//////	
	i I	9		24 1								
	I I	10	+	3						999	<i>10000</i>	
	I I	10 10	#	5 6								
	I .	10 10		7 8								
	i I	10	#	10 11								
	I .	10 10		12 13								
	I I	10	=	14 15 16							<i>10000</i>	
	I .	10 10		17 18					<i>VIII</i>	999	<i>10000</i>	
	I I	10	=	20 21								
	i i	10 10		22 23								
	5 5	10 11 11	+	24 1 2								
	1	11 11		3 4					<i>VIII</i>			
	1 1	11 11	+	5 6 7								
	1	11 11		1 9								
	I I	11 11	=	10 11								
	i I	11		13 14								
	I I	11	1	15 16								
	1 1	11	+	18 19								
	I I	11		20 21								
	1 1	11 11	#	22 23 24								
	I .	12 12	1	1 2								
	1 1	12 12 12	#	3 4 5								
	i i	12 12	1	6 7								
	! !	12 12 12	#	9 10								
	I .	12 12	1	11								
	1	12 12 12	#	13 14 15							<i>Y/////</i>	
	i i	12	1	16 17								
		12 12 12	Ŧ	18 19 20								
	1	12	Ŧ	21 22								
	1 1	12 12	Ŧ	23 24								
	- - -	13 13	#	2 3								
	I	13	Ŧ	5								
	! !	13 13 13	#	7 8								
	I .	13	7	20 10								
	i i	13 13	#	12 13								
		13	Ŧ	14 15								
	· •	13 13	#	15 17 18								
	i i	13	1	19 20								
		13 13	Ŧ	21 22 23								
	1	13	Ŧ	24								
	1 1	14 14 14	Ŧ	3 4								
	!	14 14	±	5 6								
	I	14	Ŧ	7 8								
	-	14	_	10								
	\$ \$	14							100000		THE RESERVE OF THE PERSON NAMED IN	
	\$ \$ \$	14 14 14	ŧ	12								
	\$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$	14 14 14 14 14		12 13 14 15 16								
		14 14 14 14		12 13 14 15 16 17 18								
		14 14 14 14 14 14 14 14		12 13 14 15 16 17 18 19 20 21								
		14 14 14 14 14 14 14 14 14		12 13 14 15 16 17 18 19 20 21 22 23								

			15	2	(////		(////	(////	<i>777777</i>	
		1 1	15 15	4 5						
		I .	15 15	6 7						
		I I	15 15	9		////			<i>V/////</i> .	
		3 5	15 15	11 12	<i>{/////</i>				V/////	
		I I	15 15	13 14						
		I I	15 15	15 16	<i>9777</i> 7,			<i>000</i>	X/////	
		I I	15 15	18 19	<i>7777</i> 77				<i>10000</i>	
		5 5	15 15	20 21	<i>(////)</i>					
		1	15	22	<i>(1)119</i>		VIII			
		1 1	15 16	1 2						
		1	16 16	3 4			9000.			
		1 1	16 16	5	9999		<i>9777</i> 7		<i>7/////</i>	
		1 1	16 16	, 1 9	(////)			(1111)	<i>VIII</i>	
		i i	16 16	10 11	<i>~~~</i>				<i>VIII</i>	
		I I	16 16	12 13	<i>97777</i>				<i>V/////</i>	
		3 5	16 16	15 15	<i>(1111)</i>				V/////	
		\$ \$	16 16	17 18			VIII			
		I I	16 16	19 20						
		1 1	16 16	21 22 23	(1117);		<i>(1111)</i>			
		1	16 17	24 1						
		1 1	17	3					<i>7/////</i>	
		· !	17 17 17	5 6						
		I	17	7 8						
	_		17 17	9 10						
		1 1	17 17	11 12					8/////	
		i .	17 17	14 15					8/////	
Ė	_	I I	17	16 17						
		· !	17 17 17	18 19 20						
		I	17	21 22						
	-		17	23 24						
			18 18	1 2 1						
		I .	18 18	4 5						
	_		18	6 7					<i>}//////</i>	
E		i i	18 18	9						
		· ·	18 18	10 11 12						
		1	18 18	13 14						
E			18	15 16						
		I I	18 18 18	17 18 19						
		I I	18	20 21	<i>77777</i>				<i>7/////</i>	
		I I	18 18	22 23	<i>(1111)</i>			WW.	<i>77777</i> 77	
		5 5	18 19	24 1 2						
		I I	19	3 4	<i>7777</i> 77				<i>10000</i>	
		I I	19 19	5	<i>/////</i> :					
		5 5	19 19	7 8 9						
		I I	19	10 11	<i>(////</i>					
		I I	19 19	12 13	<i>(/////</i>					
		1 1	19 19	14 15						
		i i	19	17 18						
		\$ \$	19 19	19 20	99999		<i>9777</i>			
		1 1	19	21 22 23	(////)			(1111)	<i>VIII</i>	
		I I	19 20	24 1						
E			20	3						
 		- - -	20 20 20	5 6						
		1	20 20	7 8						
		i i	20 20	9 10						
<u> </u>		I I	20 20	12 12						
		i i	20	14 15					<i>\$[[]][]</i>	
		I	20 20	16 17						
		!	20 20	18 19 20					<i>}/////</i>	
		1	20	21 22						
		1 1	20 20 21	23 24						
		I I	21 21	2 3						
	-	1	21 21	4 5					<i>{//////</i>	
			21 21 71	6 7						
		I .	21 21	9 10					8/////	
		1	21 21	11 12						
		I	21 21	13 14						
		!	21 21 21	15 16 17						
		1	21 21	18 19						
E			21 21	20 21						
 		- - -	21 21 21	23 24						
		1	22 22	1 2						
Ė			22 22	3 4						
		· !	22 22 22	5 6 7						
		1	22 22	9						
	_		22 22	10 11					<i>\$[[]]</i>	
		1 1	22 22 23	12 13					<i>}/////</i>	
 		· ·	22 22 22	14 15 16						
		I	22 22 22	10 17 18						
E			22 22	19 20						
		!	22 22 22	21 22 23					8//////	
		1	22 23	24						
	_		23 23	3					<i>{/////</i>	
		1 1	23 23 23	5 6						
		1	23 23	7 8						
		I	23 23	9						
_			23 23	11 12		111111	01111	11/11	<i>Y//////</i>	1

		23 23	13 14	7////	/////			V////	/////	
		23 23	15 16							
		23 23 23	17 18 19							
		23 23	20 21					<i>/////</i>		
		23 23	22 23					<i>VIII</i>		
		24 24	1 2							
		24 24 74	4							
		24	6 7					<i>11111.</i>	/////	
		24 24	9							
		24 24 24	11 12							
	1	24 24	13 14							
		24 24 24	15 16 17							
		24 24	18 19					<i>VIII</i>		
		24 24 24	20 21 22							
		24 24	23 24					<i>VIII</i>		
		25 25	2					<i>VIII</i>		
		25 25	4 5					<i>VIII</i>		
		25 25	7					<i>VIII</i>		
		25	9					<i>VIII</i>	/////	
		25 25	11 12					<i>VIII</i>		
		25	14 14					<i>VIII.</i>		
		25 25	16 17							
		25 25 25	18 19 20							
		25 25	21 22							
		25 25 26	23 24 1							
		26 26	2 3							
		26 26 26	4 5 6							
		26 26	7 8							
		26 26	9 10					<i>VIII</i>		
		26 26	12 13							
		26 26	14 15							
E		26 26	10 17 18							
	1	26 26	19 20					<i>VIII</i>		
		26 26 26	21 22 23							
		26 27	24					<i>/////</i>		
		27 27 27	3 4							
	1	27 27	5 6	<i>000</i>				VIII.		
		27 27 27	7 8							
		27	10 11					<i>/////</i>		
		27	12 13							
		27	15 16					<i>VIII</i>	/////	
		27	17 18							
		27	20 21							
		27	22 23	9000				9777	/////	
		28 28	1 2	9000				977		
		28 28	4	9000				9777		
		28 28	6 7					977	/////	
		28 28	9					9777	/////	
		28 28 28	10 11 12							
	1	28 28	13 14					9777		
		28 28 28	15 16 17							
		28 28	18 19	900				9777		
		28 28 78	20 21 22						/////	
		28 28	23 24							
E		29 29 24	2						/////	
		29 29	3 4 5							
		 29 29 29	6 7 8							
E		29 29 29	9 10							
	1	29 29	11 12							
E		29 29 29	13 14 15							
		29 29	16 17							
		29 29 29	18 19 20							
		29 29	21 22							
Ē		29 29 30	23 24 1							
		30 30	2							
E		30 30 30	4 5							
E		30 30 30	7 8							
E		 30 30	9 10							
E		30 30	12 12 13							
	1	30 30	14 15							
	1	30 30 30	16 17 18							
		30 30	19 20							
		30 30 30	21 22 23							
		30 31	24							
		 31 31	2 3 4							
				11/1//		Y////X/////		111111		
		31 31 31	5	111111		reereere	7777	111111	//////	
		31 31 31	5 6 7 8						/////	
		31 31 31 31 31 31 31 31	5 6 7 8 9 20							
		31 31 31 31	5 6 7 8 9 10 11 12							
		31 31 31 31	5 6 7 8 9 20 21 11 12 13 14 15							
		31 31 31 31 31 31 31 31 31 31 31 31 31	12 13 14 15 16 17 18							
		31 32 31 32 31 31 31 31 31 31 31 31 31	12 13 14 15 16 27							



		9	9	11	97777	/////	07777	/////	X/////	V////	177777	
		y 9 9	9	12 13 14								
		9	9	15 16								
		9	2	15 18								
		9	9	20 21								
		9 9 9	9	22 23 24								
		9	10	2		<i>1000</i>	VIII	<i>9999</i>	90000		<i>90000</i>	
		9	10	4 5								
		9	10	7					<i>8000</i>			
		9	10	9					<i>8000</i>			
		9	10	11					<i>8000</i>			
		9	10 10	13 14 15					<i>8000</i>			
		9	10 10	16 17					<i>8000</i>			
		9	10 10	18 19 20					<i>1000</i>			
		9	10 10	21 22		VIII			X////	9999	<i>10000</i>	
		9	10 10	23 24 1		VIII			X////		<i>10000</i>	
		9	11	3					WWW.			
		9	11	5 6			<i>Y/////</i>					
		9	11	7 8			9////		<i>VIII</i>			
		9	11 11	9 20 11			<i>Y/////</i>					
		9	11 11	12 13			<i>97777</i>					
		9	11 11 11	14 15 16								
		9	11 11	17 18								
		9	11 11 17	19 20 21							<i>Y//////</i>	
		9	11 11	22 23								
		9 9	11 12 17	24 1 2								
		9	12	3 4								
		y 9	12 12 12	5 6 7								
E		9	12	2								
		y 9	12 12 17	10 11 12								
E		9	12	13 14								
		9	12 12	15 16	<i>111111</i>	<i>11111.</i>	9////					
		9	12 12	18 19								
		9	12 12	20 21 22								
		9	12 12	23 24								
		9	13 13	2								
		9	13	4 5		<i>11111</i>	9////					
		9	13	7								
		9	13	9		<i>11111.</i>	9////					
		9	13	11								
		9	13	14 15								
		9	13 13	16 17								
		9	13	19 20								
		9	13 13	21 22								
		9	13 13 14	23 24 1								
		9	14 14	3								
		9	14 14 14	5 6								
		9	14 14	7 8								
		9	14 14	9 10 11			V////				<i>80000</i>	
		9	14 14	12 13					1000			
		9	14 14	14 15 16					10000			
		9	14 14	17 18					1000			
		9	14 14	20 21								
		9	14 14	22 23		<i>1000</i>					80000	
		9 9	14 15 15	24 1 2								
		9	15 15	3 4								
		9 9 9	15 15 15	5 6 7								
		9	15 15	9								
		9	15 15 15	10 11 12								
		9	15 15	13 14			(////					
		y 9	15 15 15	15 16 17								
		9	15 15	18 19								
		9	15 15	20 21								
		9	15 15	23 24								
		9	16 16 16	2								
		9	16 15	4 5								
		9 9 0	16 16 16	6 7								
		9	16 16	9 10								
	-	9	16 16	11 12			(////					
		9	16 16	13 14 15								
		9	16 16	16 17			(////					
		9	16 16 16	18 19 20								
		9	16 16	21 22								
		9	16 16	23 24								
		9	17 17	2								
		9	17	5								
		9 9	17 17 17	7 8								
		9 9 9	17	20								
		9	17 17 17	12 13								
	-	9	17	14 15			(////					
		9	17 17 17	16 17 18					<i>}////</i>			
E		9	17 17	19 20								
	l .			1 41								

		9	17	22	(////	/////	077777777	(7777)	07777	<i>7777777</i>	
		9	17 17 18	23 24 1							
		9	18 18	2 3							
		9	18	- 4		////		////		<i>77777</i> 77	
		9	18 18	7 8	<i>{/////</i>						
		9	18 18	9 10							
		9	18 18 18	11 12	<i>9777</i> 7,				900	80000	
		9	18	14 15	<i>7777</i> 77					80000	
		9	15 15	16 17	<i>(////)</i>						
		9	18 18	18 19 20							
		9	18	21 22							
		9	15 15	23 24							
		9	19 19	2				<i>/////</i>			
		9	19	4 5	<i>10000</i>						
		9	19 19	5 7							
		9	19 19	9	(1111)						
		9	19	11 12						<i>VIII</i> III II I	
		9	19 19	13 14	<i>(////)</i>				977		
		9	19	15 16 17	<i>97772</i> ,						
		9	19 19	18 19	<i>/////</i>					<i>90000</i>	
		9	19	20 21							
		9	19 19	22 23 24							
		9	20	1 2							
E		9	20 20	3							
		9	20 20 20	6 7							
		9	20								
E		9	20 20	10 11							
		9	20 20 20	12 13 14						<i>//////</i>	
		9	20	15 16							
Ė		9	20 20	17 18						8/////	
		9	20 20 20	19 20 21							
E		9	20	22 23							
Ė		9	20 21	24 1							
		9	21 21 21	2 3 4							
		9	21 21	5 6							
E	!	9	21 21	7 8							
		9	21 21	9 10	<i>(1111)</i>						
		9	21 21	12 13	<i>(1111)</i>				977		
		9	21 21	14 15	<i>/////</i>					<i>90000</i>	
		9	21 21 21	16 17							
		9	21 21	19 20	(////					90000	
		9	21 21	21 22	<i>(1111)</i>					<i>90000</i>	
		9	21 21 22	23 24 1	(1117);						
		9	22 22	3	<i>{/////</i>						
		9	22	4 5							
		9	22 22 22	7 8							
		9	22 22	9		////		////		<i>77777</i> 77	
		9	22 22	11 12	<i>(1111)</i>			////	WW.	<i>VIIII</i>	
		9	22 22	14 14							
		9	22 22	16 17	<i>77777</i> ,				<i>000</i>	80000	
		9	22 22	18 19	<i>[[]]]]</i> ;					80000	
		9	22 22	21 22						<i>{//////</i>	
		9	22 22	23 24	<i>/////</i>						
E		9	23 23 71	1 2 1							
E		9	23 23 23	4 5							
		9	23 23	6 7							
		9	23 23 23	9 10							
		9	23 23	11 12							
		9	23 23	13 14							
		9	23 23 23	15 16 17							
		9	23 23	18 19							
		9	23 23 23	20 21 27						<i>}//////</i>	
		9	23 23 23	23 24							
E		9	24 24	2							
		9	24 24 24	4 5							
		9	24 24 24	6 7							
E		9	24 24	9							
		9	24 24 24	10 11 12							
		9	24 24 24	12 13 14							
E		9	24 24	15 16							
		y 9	24 24 24	17 18 19							
		9	24 24	20 21							
		9	24 24 24	22 23							
		9	25 25	29 1 2							
		9	25 25	3 4							
E		9	25 25	5						8/////	
		9	25 25 25	7 8 9							
E		9	25 25	10							
		9	25 25	12 13							
		9	25 25	14 15							
		9	25 25 25	16 17 18							
	-	9	25 25	19 20							
E		9	25 25	21 22							
		9	25 26	24 1							
	-	9	26 26	2 3							
		9	26 26 36	4 5							
		9	26 26	7 8							

		9	26 26		9	1////	/////		0////	/////	
		9	26 26		11 12	<i>(1111)</i>				<i>0000.</i>	
		9	26 25		13	0000			VIII)	<i>0000.</i>	
		9	26 26 26	_	15 16						
		9	26 25		18 19				<i>VIII</i>		
		9	26 26		20 21	97777			<i>7777.</i>	7777	
		9	26 26 26	=	22 23 24	<i>17775</i>			<i>/////</i>		
		9	27	=	1 2	<i>7777</i> 77				9777.	
		9	27 27		4	<i>/////</i> :					
		9	27		6 7						
		9	27	=	9	<i>(////</i>				<i>7777</i> 2.	
		9	27 27		10 11	<i>/////</i>					
		9	27		12 13						
		9	27		15 16	<i>10000</i>					
		9	27 27		17 18				WW.	(1111)	
		9	27		19 20	<i>{/////</i>			<i>0000.</i>		
		9	27 27	=	22 23	V////			<i>11111</i>		
		9	27 28		24 1	<i>(////)</i>				9777.	
		9	28 28 28		3 4						
		9	28 28	=	5						
		9	28 28		7 8	<i>(1111)</i>			VIII	VIII.	
		9	28 28	=	10						
		9	25 25 28	= -	12 13						
		9	28 28	土	14 15						_
E		9	28 28	Ŧ	16 17						
		9	28 28 27	#	18 19 20			<i>\////\////</i>			
		9	28 28	土	21 22						_
E		9	28 28	Ŧ	23 24						
		9	29 29 29	#	2 3						
		9	29	#	5						
E		9	29 29	7	7						
		9	29 29 20	= -	9 10						
E		9	29	=	11 12						
E		9	29 29	7	13 14						
		9	29 29 29		15 16	V////				W///	
		9	29		18 19	<i>(/////</i>				<i>9992.</i>	
		9	29 29		20 21	<i>0000</i>				<i>0000.</i>	
		9	29 29		22 23						
		9	29 30 30	=	1 2						
		9	30 30		3						
		9	30 30		5	<i>(1111)</i>			<i>7777</i> 7.		
		9	30		7 8						
		9	30	=	10 11	<i>7777</i> 77				9777.	
		9	30 30		12 13	<i>/////</i> :					
		9	30	=	14 15	<i>(/////</i>				<i>7777</i> 2.	
		9	30		17 18						
		9	30 30		19 20						
		9	30		21 22				<i>9000.</i>		
		9	30	=	24 1	<i>10000</i>			<i>11111</i>		
	1	10 10	1		3				WW.	(1111)	
		10	1		5	<i>{/////</i>			<i>0000.</i>		
		10 10	1	=	7 8	V////			<i>11111</i>		
	1	10	1		9	<i>(////)</i>				9777.	
		10	1		12						
		10 10	1	=	14 15						
	1	10 10	1		16 17	<i>0000</i>			VIII)	<i>0000.</i>	
	1	10 10	1	#	18 19 20						
E		10	1	土	21 22						
E	1	10	1	Ŧ	23 24						
	1	10 10	2 2	#	2 1						
		10	2 2	#	4 5						
E		10	2	Ŧ	7						
		10	2 2	= -	9						
		10	2 2	1	11 12						
		10	2 2	#	13 14 35						
		10	2 2	= -	16 17						
		10	2 2	1	18 19						
E		10	2	Ŧ	20 21 23						
	1	10	2 2	= -	23 24						
		10	3	1	1 2						
E		10	3	Ŧ	3 4						
<u> </u>	1	10	3	#	6 7						
	1	10	3	#	9						
\vdash		10	3	Ŧ	10 11						
	1	10 10	3	#	12 13 14						
		10	3	=+	15 16						
	3	10	- 3	7	17 18						
	3 3 3 3	10 10	3						111111		
	1	10 10 10 10 10 10	3		19 20 21		11/11/	(1) (1) (1) (1) (1) (1) (1) (1)	1/////		
		10 10 10 10 10 10 10 10 10 10 10 10 10 1	3 3 3 3 3		20 21 22 23						
		10 10 10 10 10 10 10 10 10 10 10 10 10 1	3 3 3 3 3 3 3 4		19 20 21 22 23 24						
		39 30 30 30 30 30 30 30 30 30 30 30 30 30	3 3 3 3 3 3 3 4 4		19 20 21 22 23 24 1 2						
		39 30 30 30 30 30 30 30 30 30 30 30 30 30	3 3 3 3 3 3 4 4 4 4		19 20 21 22 23 24 1 2 2 3 4 5						
		20 20 20 20 20 20 20 20 20 20 20 20 20 2	3 3 3 3 3 3 3 4 4 4 4 4 4 4 4 4 4 4 4 4		19 20 21 22 23 24 1 2 2 3 4 5 6 7 2 8						
		20 20 20 20 20 20 20 20 20 20 20 20 20 2	3 3 3 3 3 3 4 4 4 4 4 4 4 4 4 4 4 4 4 4		19 20 21 22 22 23 24 1 2 2 3 4 5 6 7 8						
		20 20 20 20 20 20 20 20 20 20 20 20 20 2	3 3 3 3 3 3 3 4 4 4 4 4 4 4 4 4 4 4 4 4		19 20 21 22 22 23 24 1 2 2 3 4 5 6 7 8 9 10 21 11 12 13						
		20 20 20 20 20 20 20 20 20 20 20 20 20 2	3 3 3 3 3 3 3 4 4 4 4 4 4 4 4 4 4 4 4 4		19 20 21 21 22 23 24 1 2 3 4 5 6 7 8 9 20 11 11 12 13 14 15						
		20 20 20 20 20 20 20 20 20 20 20 20 20 2	3 3 3 3 3 3 3 3 4 4 4 4 4 4 4 4 4 4 4 4		19 20 21 21 22 22 23 24 2 2 2 2 2 2 2 2 2 2 2 2 2 2						

1			0	4 4	20 21	7////	/////		V////	
1			0	4	22 23					
1		1	0	5 5	1 2				977	
1		1	0	5	3 4					
1		1	0	5 5	5 6 7					
1		1	0	5	9					
1		1	0	5 5	11 12					
1		1	0	5	13					
1		1	0	5 5	16 17					
1		1	0	5	18 19			W.	(1111)	
1		1	0	5 5	21 22					
1		1	0	5	23 24					
1		1	0	6	2					
1		1	0	6	5 6					
1		1	0	6	7 8					
1			0	6	20 11					
1		1	0	5 5	12 13					
1		1	0	0 0 0	15 16					
1		1	0	5 5	17 18					
1		1	0	0 0 0	20 21					
1	E	1	0	6	22 23 24					
1		1	0	7	1 2					
1		-	0	7 7 7	3 4 5					
1		1	0	7 7	6 7					
1	E	1	0	7 7	9 10					
1		1	0	7 7	11 12					
1	E	1	0	7 7	14 14 15					
1			0	7 7 7	16 17					
1			0	7 7	19 20					
1			0	7 7 7	21 22 25					
1		1	0	7 8	24 1					
1		1	0	- 1	3 4	9///				
1			0		5 6					
1		1	0	8 8	7 8 9					
1		1	0		10 11					
1		3	0	8	12 13 14			W.	(1111)	
1		1	0	8 8	15 16			W.	(1111)	
1		1	0	- 1	17 18 19				(1111)	
1		1	0	8 8	20 21					
1		1	0		23 24					
1		1	0	9	2					
1		1	0	9	4 5					
1		1	0	9	7					
1		1	0	2	9					
1		1	0	9	11 12					
1			0	9	14 15					
1		3	0	9	16 17 18					
1		3	0	9	19 20					
1		1	0	9	22 23				9777	
1		1	0	10	24					
1		1	0	10	3					
1		-	0	10 10	5 6 7					
1		1	0	10	B 9					
1	E	1	0	10 10	10 11 12					
1		1	0	10	13 14					
1	E	1	0	10 10	15 16 17					
1			0	10 10	18 19					
1			0	10 10	21 22					
1	E	1	0	10 10	23 24 1					
1		1	0	11 11	3					
1			0	11 11 11	4 5 6					
1		1	0	11	7 8					
1		1	0	11 11 11	9 10 11					
1		1	0		12 13					
1	E	1	0	11 11 11	14 15 16					
1		3	0	11	17 18					
1	E	1	0	11 11	20 21					
1		1	0	11 11	22 23 24					
1	E		D	12 12	1 2					
1			0	12 12	3 4					
1	E		D	12 12	5 6 7					
1			0	12 12	9					
1		1	0		10 11 12					
10 12 17 17 17 17 17 17 17 17 17 17 17 17 17	Ė	1	0		13 14					
10 12 17 17 17 17 17 17 17 17 17 17 17 17 17		1	0	12 12 12	15 16 17					
	Ė	1	0	12 12 17	18 19 20					
		1	0	12	21 22					
		-	0	12 12 13	23 24 1					
		1	0	13	3					
		3	0	13 13	5 6					

	10	13	7	(////			(////	<i>977777</i>	
	10 10	13 13	9						
	10 10	13 13	11 12						
	10	13	13 14		////	////		X//////	
	10 10	13	15 16 17	<i>{/////</i>				X//////	
	10 10	13 13	18 19					80000	
	10 10	13 13	20 21 22	977				XIII X	
	10 10	13	23 24	<i>7777</i> 77				80000	
	10	14	2					90000	
	10	14 14	4						
	10 10	14	6 7	<i>(////</i>					
	10	14 14	9	<i>/////</i>					
	10 10	14 14 14	11 12						
	10 10	14 14	13 14						
	10	14	15 16			<i>/////</i>			
	10 10	14 14 14	18 19	<i>9999</i>					
	10 10	14 14	20 21			<i>11111</i>		<i>70000</i>	
	10	14	22 23	<i>{/////</i>			(1111)	X//////	
	10 10	15 15	1 2	WW.				X//////	
	10	15 15	3 4						
	10	15 15	6 7	<i>(1111)</i>				90000	
	10	15 15	5 9						
	 10	15 15	10 11						
E	10	15 15	12 13						
	10	15 15	15 16						
E	10	15 15	17 18						
<u> </u>	10	15 15 15	20 21						
	10	15 15	22 23					3//////	
E	10	15 16	24 1						
<u> </u>	10	16 16	3 4						
	10 10	16 16	5 6					X//////	
E	10	16 16	7 8						
<u> </u>	10	16 16	10 11						
	10	16 16	12 13					8//////	
E	10	16 16	14 15						
	10 10	16 16	17 18						
	10 10	16 15	19 20						
	10	16 16	21 22			<i>/////</i>			
	10 10	16 16 17	24 1						
	10 10	17	3			(111)			
	10	17	5					<i>80000</i>	
	10 10	17	7 8	WW.				X//////	
	10	17	9 20						
	10	17	11 12	<i>(1111)</i>				90000	
	10 10	17	14 15	<i>(/////</i>				90000	
	10	17	16 17						
	10	17	18 19 20	(////					
	10 10	17 17	21 22						
	10	17	23 24						
	10 10	18 18 18	2 3						
	10 10	15 15	4 5						
	10	18 18	7	97777					
	10	18	9						
	10	18 18	11 12	<i>(////)</i>		////			
	10	18 18 18	13 14 15						
	10	18 18	16 17						
F	10	18 18	18 19					X//////	
	10	18 18	21 22					X//////	
	10	18 18	23 24						
E	10 10	19 19 10	1 2 1					8//////	
	10	19	4 5					8//////	
E	10	19 19	7					8//////	
	10	19 19	9 10						
	10	19	11 12						
E	10	19 19	13 14						
	10 10	19 19 19	15 16 17					<i>}//////</i>	
	10	19	18 19						
E	10	19	20 21						
	10 10	19 19 19	22 23 24					<i>Y/////</i>	
	10	20	1 2					X//////	
E	10	20 20	3 4						
	10	20 20	5 7						
	10	20 20	9						
	10	20 20	10 11						
	10	20 20	13 14						
	10	20 20	15 16						
E	10	20 20	17 18					3//////	
	10 10	20 20	20 21						
	10 10	20 20	22 23						
	10	20 21	24 1						
	10 10	21 21 21	2 3 4						
	10	21 21	5 6					8//////	
E	10	21 21 21	7 8						
	10	21 21	10 11						
	10	21 21	12 13						
	10 10	21 21 21	14 15 16						
$\overline{}$	10	21	17	V11111	111111	111111	11111	*********	

	1	0	21	18	<i>77777</i>	(////	(7777)	/////	(/////	/////	<i>777777</i>	
	1	0	21 21	20 21								
	1	0	21 21	23 24								
	1 1	0	22 22 22	2 3				9///				
	1	0	22 22	5								
	1	0	22 22 22	7 8				////				
	1	0	22 22 22	9 10 11								
	1	0	22 22	12								
	1	0	22 22	15 16							<i>11111</i>	
	1	0	22 22 22	17 18 19							<i>WW.</i>	
	1	0	22 22	20 21								
	1	0	22 22	23 24								
	1	0	23 23 23	2 3								
	1	0	23 23	4 5								
	1	0	23 23 23	7 E					<i>VIII</i>			
	1	0	23 23 23	9 10 11								
	1	0	23 23	12 13								
	1	0	23 23 23	14 15 16								
	1	0	23 23 21	17 18								
	1	0	23 23	20 21								
	3	0	23 23 23	22 23 24							<i>{/////</i>	
	1	0	24 24 24	2 3								
	1	0	24 24	4 5								
	1 1	0	24 24 24	5 7 8								
	1 1	0	24 24 24	9 10 11								
	1	0	24 24	12								
E	3	0	24 24 24	14 15 16							<i>\/////</i>	
	1 1		24 24 24	17 18 19								
	1	D D	24 24	20 21								
	1	0	24 24 24	23 24								
	1	0	25 25 25	2 3								
	1	0	25 25	4 5								
	1 1	0	25 25 25	5 7 8					<i>VIII</i>			
	1	0	25 25 25	9 10								
	1	0	25 25	12 13								
	1	0	25 25 25	14 15 16								
	1	0	25 25	17 18								
	1	0	25 25	20 21								
	1	0	25 25 25	22 23 24								
	1	0	26 26	2				9 <i>999</i>			<i>VIII</i>	
	1	0	26 26	4 5								
	1 1	0	26 25 26	5 7 8								
	1	0	26 26	9 10								
	1	0	26 26	12 13								
	1	0	26 26 26	14 15 16								
	1	0	26 26	17 18								
	1	0	26 26	20 21								
	1 2 2	0	26 25 26	22 23 24								
	1	0	27 27 27	1 2 1								
	1	0	27 27	4 5								
E	1 1 1	0	27 27 27	5 7 8							<i>}/////</i>	
	1	0	27 27	9 10								
	1 1 1	0	27 27 27	12 13								
	1 1	0	27 27 27	14 15 16								
_	1	0	27 27 27	17 18 10								
	1	0	27 27 27	20 21								
	1 1	0	27 27 27	22 23 24							<i>{/////</i>	
	1	D D	28 28 28	2								
	1	0	28 28 28	4 5								
	1	0	28 28 28	6 7 8								
	1	0	28 28 28	9 10								
	1 1	0	28 28 28	11 12 13								
	1 1		28 28 28	14 15 16								
	1	D D	28 28 28	17 18								
	3	0	28 28	19 20 21								
	1 1	0	28 28 28	22 23 24								
	1	0	29 29	1 2								
	3	0	29 29 29	3 4 5								
	1	D D	29 29 29	7								
	1 1	0	29 29 29	9 10							<i>{/////</i>	
	1	0	29 29 29	11 12 13								
	1 1 2	D D	29 29 29	14 15 16								
	1	0	29 29	10 17 18								
	1 1	0	29 29 29	19 20 21								
	1	0	29 29 29	22 23								
	1	0	30 30	1 2								
			30	3	111111	111111	111111	11/11	V/////		VIIIIII	

1	0	30	3	97777	/////	07777	/////	177777	V////	177777	
1	0	30 30	7 8								
1	0	30 30	9								
1	0	30 30	12 13					<i>(1111)</i>			
1	0	30 30	14 15					MAN			
1	0	30 30	16 27 18					<i>(1111)</i>			
1	0	30 30	19 20								
1	0	30 30	22 22 23					V/////			
1	0	30 31	24 1		<i>1000.</i>		<i>9999</i>	V/////			
1	0	31 31 31	3 4								
1	0	31 31	5 6								
1	0	31 31	7 8								
1	0	31 31	10 11					<i>(1111)</i>			
1	0	31 31	12 13		<i>1000</i>	VIII		V/////			
1	0	31 31	15 16					<i>(1111)</i>			
1	0	31 31	17 18					MAN			
1	0	31 31 31	20 21					<i>(1111)</i>			
1	0	31 31	22 23					MAN			
1	1	1 1	24 1 2								
1	1	1	3 4					10000			
1	1	1	5 6					W			
1	1	1									
1	1	1	10 11								
1	1	1 1	12 13 14								
1	1	1	15 16								
1	1	1 1	17 18								
1	1	1	20 21								
1	1	1	22 23 24								-
1 1	1	2 2	24 1 2								
1	1	2	3 4								
1	1	2 2 2	5 6 7								
1	1	2 2	9								
1	1	2 2 2	10 11 12								
1	1	2 2	13 14								
1	1	2 2	15 16		(1111)			WWW.	000		
1	1	2 2 2	17 18		<i>1000</i>					X/////	
1	1	2 2	20 21								
1	1	2 2	22 23								
1	1	3	1 2								
1	1	3	3 4								
1	1	3	5 6 7								
1	1	3	3 9								
1	1	3	10 11		<i>11111.</i>	V////	<i>7777</i>	V/////			
1	1	3	13 14		<i>11111</i>	V////	<i>7772</i>	V////			
1	1	3	15 16		<i>11111.</i>	V////	<i>7777</i>	V////			
1	1	3	18 19		<i>11111.</i>		<i>7777</i>	V////			
1	1	3	20 21		<i>11111</i>	V////	<i>7777</i>	V/////			
1	1	3	22 23 24		<i>11111.</i>	V////	<i>7772</i>	V////			
1	1	4	2		<i>11111</i>	V////	<i>7777</i>	V/////			
1	1	4	4 5			V////		V////			
1	1	4	6 7		<i>11111</i>	V////	<i>7777</i>	V/////			
1	1	4	9			V////		V////			
1	1	4	11 12		<i>11111</i>	V////	<i>7777</i>				
1	1	4	13 14								
1	1	4	16 17								
1	1	4	18 19								
1 1	1	4	21 22								
1	1	4	23 24								-
1 1 1 1	1	5	2 3								
1	1	5	3		(////						-
1	1	5 5	7 E								
1	1	5	9 10								
1	1	5 5	11 12 13								
1	1	5	14 15								
1	1	5	16 17								-
1	1	5	15 19 20								
1	1	5 5	21 22								
1	1	5 5	23 24 1								
1	1	6	3								
1	1	6	5 6								
1	1	6	7 8								
1	1	6	10								
1	1	6	11 12 13								
	1	6	14 15								
1		6	16 17								
1 1 1 1	1			11/1///	V/////		ワノノノ	<i>777777</i>		VIIIIII	
1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	6	19 20		11111	111111		Y/////		V//////	
1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	6 6 6 6	19 20 21 22								
1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1		6 6 6 6 6 6	20 21 22 22 23 24								
	1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	6 6 6 6 7 7 7 7 7	20 20 21 22 23 24 1 2 2								
	1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	6 6 6 6 6 6 7 7 7 7	19 20 21 22 23 24 1 2 2 3 4 5								
		6 6 6 6 6 6 7 7 7 7 7 7	19 19 20 21 22 23 24 1 2 2 3 3 4 5 5 6 7 7 8								
		6 6 6 6 6 6 6 7 7 7 7 7 7 7 7 7 7	20 22 23 24 3 4 4 5 5 6 7 7 8 9 9 101 11								
		6 6 6 6 6 6 6 7 7 7 7 7 7 7 7 7 7 7 7 7	18 18 18 18 18 18 18 18 18 18 18 18 18 1								

11		7	16 17	V////	/////	0000	/////	(/////	/////	(/////	
11		7	18 19								
11 11		7 7 7	20 21 22								
11		7 7	23 24					<i>VIII</i>			
11 11			2 3								
11 11 11		-	5 6								
11		1	7 8								
11 11		8	9 10 11								
11			12								
11		-	15 16								
11		-	17 18								
11		-	20 21								
11 11		-	22 23								
11 11		9	1 2								
11 11		9	4								
11 11		9	6 7					WWW.			
11 11		9	9								
11		9	11								
11		9	14 15								
11		9	16 17								
11		9	19 20								
11 11		9	21 22								-
11 11		9	24 1								
11 11		10 10	2 3 4								
11 11		10 10	5 6								
11 11		10 10	7 8 9								_
11		10 10	10 11								
11 11 11		10 10	12 13 14								
11		10 10	15 16								
11 11 11		10 10	17 18 19								
11		10	20 21								
11		10	23 24			(1) (1)			999)		
11		11 11	2								
11 11		11 11	4 5								
11 11		11 11	7								
11 11		11 11	9								
11 11		11 11	11 12								
11		11 11	14 15								
11 11		11 11	16 17	<i>11111</i>				V////	/////		
11		11 11	19 20								
11 11		11 11	21 22 23								
11		11 12	24 1								
11 11		12 12	3 4								
11 11		12	5 6				/////				
11		12 12	. i.								
11 11		12 12 12	10 11 12								
11		12 12	13 14								
11 11		12 12 12	15 16 17					<i>1000</i>			
11		12	18 19	/////		9999		V/////	<i>999</i>		
11		12	20 21 22								
11		12	23 24								
11 11		13	2								
11 11		13 13 13	4 5 6								
11 11		13 13	7 8								
11 11 11		13 13 13	9 30 11								
11		13 13	12 13								
11 11 11		13 13 13	15 15								
11 11		13 13 13	17 18								-
11 11		13 13 13	20 21								
11 11	-	13 13	22 23 24								
11		14 14	1 2								
11 11		14 14 14	3 4								
11		14	6 7								
11 11		14 14 14	9 10								
11 11		14	11 12								
11 11 11		14 14 14	13 14 15								
11		14 14	16 17								
11 11 11		14 14 14	19 20								
11 11	-	14 14 14	21 22 21								-
11 11 11		14 15	24 24								
11		15 15	3								
11 11		15 15 15	5 6								
11 11		15 15 15	7 8								-
11 11 11		15 15	10 11								
	-	15 15	12 13								
11		15						200000		0000000	
11 11 11 11 11		15 15 15	15 15					1777			
11 11 11 11 11 11 11 11 11 11 11 11 11		15 15 15 15 15 15	15 16 17 18								
### ##################################		15 15 15 15 15 15 15 15 15	15 16 17 18 19 20 21								
H 11 11 11 11 11 11 11 11 11 11 11 11 11		15 15 15 15 15 15 15 15 15 15 15 15 15	24 15 16 17 18 19 20 21 22 22 23								

	1	11	16 16	3 4		/////			V////	<i>777771</i>	
	1	11	16 16	5							
		11	16 16	8 9							
	1	11	16 16	10 11					9777	VIII)	
		n n	16 16	12 13 14							
	1	11	16 16	15 16							
		1	16 16	18 19							
	1	11	16 16	20 21							
	1	11	16 16	23 24							
	1	11	17	2				W.	(1111)		
	1	11	17	4 5							
		11	17	7							
	1	11	17	9							
	1	11	17 17	11 12							
	1	11	17	14 15							
		11	17 17 17	15 17 18					V////		
	1	11	17 17	19 20							
	3	11	17 17 17	21 22 23							
	1	11	17 18	24 1							
		1	18 18 18	3 4							
	1	11	18 18	5							
	3	ii	15 15 15	7 8 9							
	1	11	15	10 11							
E		11	15 15 15	12 13 14							
E		11	15 15 15	15 16							
	1	11	18 18	18 19							
		1	15 15 15	20 21 27							
		11	15 15	23 24							
		11	19 19	2							
	1	11	19	4 5							
F	1	11	19 19 19	6 7 8							
	1	11	19	9							
	1	11	19 19 19	11 12 13							
	1	11	19 19	14 15					<i>/////</i>		
	1	11	19 19	15 17 18							
		11	19 19	19 20							
	1	11	19 19 19	21 22 23							
	1	11	19 20	24 1							
	3	11	20 20 20	3 4							
	1	11	20 20	5 6							
	3	11	20 20 20	7 8 9							
	1	11	20 20	10 11							
		11	20 20 20	12 13 14				W.	(1111)		
		11	20 20	15 16							
	1	11	20 20	18 19							
		1	20 20 20	20 21							
	1	11	20 20	23 24							
	1	1	21 21 21	2 3							
	3	11	21 21	4 5					<i>VIII</i> .		
	1	1	21 21 21	7 8							
	1	11	21 21	9							
	3	1	21 21 21	11 12 13							
E		11	21 21	14 15						<i>{/////</i> }	
	1	11	21 21 21	10 17 18							
E		11	21 21	19 20							
	1	11	21 21 21	21 22 23							
Ē	1	1	21 22 22	24 1 2							
	1	11	22	3							
E	1	11	22 22 22	5 6 7							
	1	11	22 22	9							
	3	1	22 22 22	10 11 12							
	1	11	22 22	13 14							
F	1	11	22 22 22	15 16 17							
	1	11	22 22	18 19							
E	1	11 11	22 22 22	20 21 22							
	1	11	22 22	23 24							
E	1	11	23 23 23	2 3							
		11	23 23	5							
E		11	23 23 23	7 8							
		11	23 23	20							
E		11	23 23 23	12 13						<i>}/////</i>	
		11	23 23 23	14 15						<i>}/////</i>	
E	1	11	23 23	10 17 18							
Ē	1	n n	23 23 21	19 20 21							
	1	n n	23 23 23	21 22 23							
Ē		1	23 24 24	24 1 2							
	1	11	24 24	3							
	1	11	24 24 24	5 6 7							
	1	11	24 24	8 9							
	3	ii	24 24 24	10 11 12							
			24	13	111111	111111	アントナイントナナナイ	111111	111111	11111111	-

		11	24	14	V////			11111	<i>777777</i>	
	3	11	24 24 24	15 16 17						
	3	11	24 24	18 19						
	1	11	24	20 21		////	////		<i>77777</i> 77	
		1	24 24 24	23 24						
	1	n n	25 25	1 2						
	1	11	25 25	4				9999,	80000	
		11	25 25	6 7				9999,	80000	
	1	1	25 25	9						
		1	25 25 25	10 11						
		11	25 25	13 14						
	1	1	25 25	15 16						
		1	25 25	17 18				9999		
		11	25 25	20 21						
	1	11	25 25	22 23				9999		
		11	25 26	1 1	<i>10000</i>		WW.		<i>VIIII</i>	
	1	11	26 26	3 4	<i>1000</i>		WW.		<i>VIII</i> III II I	
	1	11	26 26	5				9777)		
		1	26 26	8 9						
	1	11	26 26	10 11				9999	<i>90000</i>	
	1	11	26 26	12						
		1	26 26 26	14 15	0000			9999		
	1	11	26 26	17 18						
Ė	1	11	26 26	19 20						
	1	11	26 26 26	21 22 31						
		11	25 27	24						
E	1	11	27 27	3						
<u> </u>	1	11	27 27 27	5 6					<i>//////</i>	
	1	11	27	7 8						
Ė	1	11	27	9					8/////	
		ii	27 27 27	11 12 13						
E		11	27	14 15						
Ė	1	11	27	16 17						
	1	ii	27 27 27	18 19 20						
	1	11	27	21 22						
H	1	11	27	23 24						
		11	28 28 28	2	<i>8000</i>				<i>VIII</i> II	
	1	11	28 28	4 5						
	1	11	28 28	6 7				9777		
		1	28 28	9					<i>9000</i>	
	1	11	28 28	11 12						
	1	11	28 28	13	<i>11110</i> .			9999	90000	
		1	28 28	15 16	0000			0000		
		11	28 28	18 19						
	1	11	28 28	20 21						
		1	28 28 28	22 23 24						
	1	11	29 29	1 2			////			
	1	n n	29	4			/////		<i>VIIII</i>	
		1	29	6 7						
	1	11	29 29	9				9999,	80000	
	1	1	29	10 11				9999)	80000	
		11	29	13 14						
	1	11	29 29	15 16	/////			9999		
	1		29 29 29	17 18						
		11	29 29 29	20 21						
	1	11	29 29	22 23						
	1	11	29 30 30	24 1 2						
	1	11	30 30	3 4						
	1	11	30 30	5 6						
	1	11	30 30	7 8 9						
	-	11	30 30	10 11						-
	1	11	30 30 30	12 13					<i>{//////</i>	
		11	30	15 16						
E	1	11	30 30	17 18						
		ii	30 30 30	19 20 21						
E		n n	30	22 23						
		12	30 1	24 1						
F		12	1 1	2 3 4						
	1	12	1	5 6						
	1	12	1	7 8						
	1	12	1 1	9 10						
		12	1 1	12 13						
	-	12	1 1	14 15						-
E	1	12	1 1	16 17						
E		12	1	19 20					<i>{//////</i>	
		12	1	21 22						
E		12	1	23 24						
	1	12	2 2 2	2 3						
E		12	2 2	4 5						
E	1	12	2 2	6 7					<i>}//////</i>	
	1	12	2 2	9 10	(////					
		12	2 2	11 12						
E	1	12	2	13 14						
		12	2 2 2	15 16 17						
		12	2 2	18 19						
		12	2 2	20 21						
	1	12	2 2	23 24						

		12	3	1 2	7////	/////		V////	//////	
	1	12	3	3 4						
		12	3	6 7						
	1	12	3	9				9777		
		12 12 12	3	10 11 12						
	1	12	3	13 14						
		12	3	16 17						
	1	12	3	18 19						
		12	3	21 22						
	1	12	3	23 24			W.	(1111)		
	1	12	4	2						
	1	12	4	3						
	1	12	4	7 8						
	1	12	4	9 10						
	1	12	4	12 13						
		12	4	14 15 16	<i>/////</i>			V////		
	1	12	4	17 18						
		12	4	20 21						
	1	12	4	22 23						
		12	5	1 2						
	-	12	5	3 4						-
		12	5	6 7						
	-	12	5	8 9 10						-
	1	12	5	11 12						
		12	5 5	13 14 15						
	1	2	5 5	16 17						
	3	12	5 5	18 19 20						
E		12	5	21 22						
		12	5	24 1						
	-	12	6	2 3 4						-
		12	6	5						
		12	6	7 8						
	1	12	6	10 11						
		12	- 6	12 13						
	1	12	6	15 16						
	1	12	6	17 18 19						
	1	12	6	20 21						
		12	6	22 23 24						
	1	12	7	1 2			W.	(1111)		
	1	12	7 7	4 5						
	1	12	7	6 7						
	3	12	7 7	9						
	1	12	7	11 12						
	1	12 12 12	7 7 7	13 14 15						
	1	12	7	16 17						
		12	7 7	19 20						
		12	7 7 7	21 22 25						
	1	12	7 8	24 1						
	1	12	-	3 4						
	1	12	-	5 6				977		
	3	12	-	7 8 9				(1111)		
E		12	1	10 11						
		12	-	12 13 14						
E	1	12	-	15 16						
	1	12	8	18 19						
	1	12 12 12	-	20 21 22						
	1	12	-	23 24						
	1	12 12	9	2 3						
	3	2	9	4 5						
	1	12 12	9	7 E						
	3	2	9	9 10						
E	1	2	9	11 12 13						
		12	9	14 15						
	1	12	3	16 17 18						
		12	9	19 20 21						-
E		12	3	21 22 23						
		12	9 10	24 1						
		12	10 10	3 4						
		12	10 10	5 6 7						
E	1	12	10	5 9						
		12	10 10	10 11 12						
		12	10 10	13 14						
E		12	10 10 10	15 16						
	1	12	10 10	18 19						
	-	12 12 12	10 10	20 21 22						
	1	12	10 10	23 24						
	1	12 12	11 11 11	2 3						
	3	2	11 11	4 5						
E		12	11 11	7 8						
E	1	12	11 11	20						-
		-	41	1.1	ACCRECATION AND ADDRESS.		1000			

		2	11	12	97777	77777			V////	<i>977777</i>	
	3	12 12 12	11 11	13 14 15							
	3	12	11 11	16 17							
	1	12	11	18				////		X/////	
		12	11	21 21 22	<i>{/////</i>					X/////	
	1	12	11 11	23 24							
	1	12	12 12	2 1	977						
		12	12	4 5	<i>7777</i> 77				900	80000	
	1	12	12 12	6 7	<i>(////)</i>						
		12	12	9							
		12	12	11 12							
	1	12	12 12	13 14							
	1	12	12	15 16				<i>/////</i>			
		12	12	18 19	<i>9999</i>						
	1	12	12 12	20 21							
		12	12 12	22 23 24	(1111)				(1111)		
	1	12	13	1 2						X/////	
	1	12	13	3 4	<i>(////)</i>					90000	
		12	13	5 6 7	<i>97772</i> ,					90000	
	1	12	13 13	9	<i>/////</i>					90000	
	1	12	13	10 11							
		12	13	12 13							
		12	13	15 16							
	1	12	13	17 18							
	1	12	13 13	19 20 21							
E		12	13	22 23							
Ė	1	12	13	24 1						X/////	
		12 12	14 14 14	2 3 4						X//////	
		12	14 14	5							
	1	12	14	7 8							
	1	12	14 14	9 10 11							
		12	14 14	12 13							
		12	14 14	14 15							
	1	12	14 14	16 17 78							
		12	14	19 20							
	1	2	14 14	21 22							
		12	14 14 15	23	<i>(1111)</i>						
		12	15 15	2 3						90000	
	1	2	15 15	4 5							
		12	15 15	7	0000						
		12	15 15	9							
	1	12	15 15	11 12							
		12	15 15	13							
	1	12	15 15	16 17						<i>X/////</i>	
	1	2	15 15	18 19							
E		12	15 15	20 21						X/////	
	1	2	15 15	23 24						X//////	
	1	12	16 16	1 2							
		12	16 16	4						8//////	
		12	16 16 16	5 6 7							
		12	16 16	9							
	1	12	16 16	10 11							
	1	12	16 16	13 14							
		12	16 16	15 16							
	1	12	16 16	17 18							
		12	16 16	20 21							
	-	12	16 16	22 23						X/////	-
		12	16 17	24 1							
		12	17 17	3 4							
Ė	1	12	17	5							
		12	17 17 17	7 8 9							
		12	17 17	10 11							
Ė	1	2	17	12 13							
	1	12	17 17 17	14 15 26							
		12	17	17 18						<i>X/////</i>	
	1	12	17	19 20							
	1	12	17 17	21 22 21						X/////	
	1	2	17 18	24 1							
		12	18 18	2							
Ė	1	12	18	4 5							
 	1	12	18 18 18	7 E							
	1	12	18	9							
	1	12	18	11 12							
	1	12	18 18	13 14 15							
		12	18 18 18	16 17							
		12	18 18	18 19							
		12	18 18	20 21							
		12	18 18 18	22 23 24							
		12	19	1 2						<i>}/////</i>	
E	1	12	19 19	3 4						<i>X//////</i>	
 	1	12	19 19 19	5 6 7							
		12	19 19 19	9						X//////	
		12	19 19	10 11							
	1	12	19 19 19	12 13						8//////	
		12	19 19 19	15 16							
		12	19 19	17 18							
	1	12	19 19 19	19 20 21							
-		,	19	27	11111		ロンノンノンノンノン	111111	11111	Y//////	

	1	2	19 19	23 24	97777	/////		/////	
	1	2	20 20	2					
		2 2 2	20 20 20	4 5					
	1	2	20 20	6 7					
		2 2 2	20 20 20	9					
	1	2	20 20	11 12					
		2 2 2	20 20 20	14 15					
	1	2	20 20	16 17					
		2	20 20 20	19 20	(1111)				
	1	2	20 20 20	21 22				(1111)	
	1	2	20 21	24 1					
	1	2	21 21	3					
	1	2	21 21	5					
	1	2	21 21 21	7 8 9					
	1	2	21 21	10 11					
		2 2 2	21 21 21	12 13 14	<i>000.</i>			<i>11111.</i>	
	1	2	21 21	15 16					
		2 2 2	21 21 21	17 18 19					
	1	2	21 21	20 21					
		2 2 2	21 21 21	22 23 24					
	1	2	22 22	2					
	3	2 2	22 22 22	3 4 5					
	1	2	22 22	6 7					
		2	22 22 22	9					
E	1	2	22 22	11 12					
E	1	2 2	22 22 22	13 14 15					
		2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2	22 22 23	16 17 18					
E		2	22 22	19 20					
		2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2	22 22 23	21 22 21					
E		2	22 23	24 1					
E	1	2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2	23 23 23	3 4					
E	1	2	23 23	5 6					
		2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2	23 23 23	7 8					
	1	2 2	23 23	10 11					
	1	2	23 23 21	12 13					
	1	2	23 23	15 16					
		2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2	23 23 23	17 18					
	1	2	23 23	20 21					
		2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2	23 23 23	22 23					
	1	2	24 24	1 2					
		2 2 2	24 24 24	3 4 5	977				
	1	2	24 24	6 7					
		2 2 2	24 24 24	9					
	1	2	24 24	11 12				(1111)	
		2 2 2	24 24 24	13 14 15	(1111)			(1111)	
	1	2	24 24	16 17					
	1	2	24 24	19 20					
	1	2	24 24	21 22					
	1	2	24 25	24 1					
		2	25 25	3					
		2	25 25	5 6					
		2	25 25	7 8	<i>000</i>			<i>11111.</i>	
E	1	2	25 25	10 11					
	1	2 2 2	25 25 25	12 13 14					
		2	25 25	15 16					
		2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2	25 25 25	17 18 19					
	1	2	25 25	20 21					
E	1	2 2	25 25 25	22 23 24					
	1	2	26 26	2					
		2 2 2	26 26 26	3 4 5					
	1	2	26 26	7					
	3	2 2	26 25 26	9 10					
	1	2	26 26	11 12					
		2	26 26 25	14 15					
Ē	1	2	26 26	16 17					
E		2 2	26 26 26	18 19 20					
Ē	1	2	26 26 24	21 22 23					
		2	26 27	24 1					
	1	2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2	27 27 27	2 3 4					
		2	27 27	5					
	1	2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2	27 27 27	7 8 9					
		2	27 27	9 10 11					
	1	2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2	27 27	12 13					
E		2	27 27	15 16					
Ė	1	2 2 2	27 27 27	17 18 10					
	1	2	27 27	20 21					
		2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2	27 27 27	22 23 74					
E		2	28 28	1 2					
E		2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2	28 28 28	4					
_	1	2	28 28	6 7					
	'	1							

12	28	10	
22	28	11	V////X////////////////////////////////
12	28	12	<i>~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~</i>
12	28 28	13 14	**************************************
12	28	15	<u> </u>
12	28	16	**************************************
12	28	17	~//////////
12	28 28	18 19	**************************************
12	28	20	*////X////X///X///X///X////X////X////X
12	28	21	
12	28	22	***************************************
12	28 28	23 24	{////W////X////////////////////////////
12	29	1	*////////////
12	29	2	3////W///X//X//////////////////////////
12	29 29	3	-{////////////
22	29	5	1/////////////////////////////////////
12	29	6	1//////////////////////////////////////
12	29	7	\$\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\
12	29 29	9	
12	29	10	\$/////\/////\
12	29	11	\$////X////X///X///X////X////X////X////
12	29	12	\$\f\f\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\
12	29 29	13 14	-\$/_/
12	29	15	\$////X///// \
12	29	16	<i>\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\</i>
12	29	17	
12	29 29	18 19	\////X////X///X////X////X////X////X///
12	29	20	<i>\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\</i>
12	29	21	<i>\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\</i>
22	29	22 23	<i>\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\</i>
12	29 29	23 24	\////X/////\/////X////X////X////\///\//
12	30	1	V////X////////////////////////////////
12	30	2	<i>\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\</i>
12	30 30	3 4	\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\
12	30	3	\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\
12	30	6	V////X////////////////////////////////
12	30	7	200008000000000000000000000000000000000
12	30		**************************************
12	30	10	**************************************
12	30	11	***************************************
12	30	12	
12	30 30	13 14	**************************************
12	30	15	\$0000\$0000\$0000\$000\$0000\$0000\$0000\$
12	30	16	3//////////////////////////////////////
12	30	17	
12	30 30	18 19	*///////////*
12	30	20	
12	30	21	TEEEEAAEEEEEEEEEEEEEEEEEEEEEEEEEEEEEEE
12	30	22 23	
12	30	24	<i>\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\</i>
12	31	1	\$////X////X///X////X////X////X////X///
12 12	31 31	3	\$\f\f\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\
12	31	3 4	~////X////////////////////////////////
12	31	5	\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\
12	31	6	\$////X////X///X///X////X////X////X////
12	31 31	7 8	47.77.77.87.77.77.87.77.77.77.77.77.77.77
12	31 31	9	~/////X////// /
12	31	10	\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\
12	31	11	<i>\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\</i>
12	31	12	<i>\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\</i>
12	31 31	13 14	\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\
12	31	15	<i>\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\</i>
12	31	16	X////X////////////////////////////////
12	31 31	17 18	\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\
12	31	18 19	\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\
12	31	20	<i>\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\</i>
12	31	21	\$
12	31 31	22 23	~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~
12	31	23 24	~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~
			

25 MMT in 2035					
Emissions Summary					
Funitaria and Tabal	II-ia	2024	2026	2020	2025
Emissions Total CO ₂	Unit MMt/yr	0.265	0.390	2030 0.493	2035 0.492
PM2.5	tonnes/yr	38	34	33	28
SO ₂	tonnes/yr	18	15	12	7
NOx	tonnes/yr	137	114	95	64
	.,				
Emissions by resource type					
CO ₂	Unit	2024	2026	2030	2035
Coal	MMt/yr			-	-
CHP Biogas	MMt/yr MMt/yr	0.14	0.14	0.13	0.08
Biomass	MMt/yr				
System Power	MMt/yr	0.13	0.25	0.36	0.41
Asset Controlling Supplier	MMt/yr	-	-	-	-
Total	MMt/yr	0.26	0.39	0.49	0.49
Average emissions intensity	tCO2/MWh	0.046	0.068	0.083	0.081
Oversupply Emissions Credits	MMt/yr	0.27	0.23	0.04	0.04
PM2.5 Coal	Unit tonnes/vr	2024	2026	2030	2035
CHP	tonnes/yr	- 8	8	7	4
Biogas	tonnes/yr	13	13	13	5
Biomass	tonnes/yr	19	11	1	4
System Power	tonnes/yr	(2)	3	12	14
Total	tonnes/yr	38	34	33	28
Average emissions intensity	kg/MWh	0.0067	0.0059	0.0056	0.0046
SO ₂	Unit	2024	2026	2030	2035
CHP Coal	tonnes/yr	1	1	1	-
Biogas	tonnes/yr tonnes/vr	10	10	10	0
Biomass	tonnes/yr	7	4	0	2
System Power	tonnes/yr	(0)	0	1	1
Total	tonnes/yr	18	15	12	7
Average emissions intensity	kg/MWh	0.0031	0.0026	0.0020	0.0012
NOx	Unit	2024	2026	2030	2035
Coal CHP	tonnes/yr tonnes/yr	36	35	34	18
Biogas	tonnes/yr	44	44	44	17
Biomass	tonnes/yr	58	32	3	13
System Power	tonnes/yr	(1)	3	14	17
Total	tonnes/yr	137	114	95	64
Average emissions intensity	kg/MWh	0.0237	0.0199	0.0160	0.0105
Supply and Demand Balance					
2		2024	2026	2020	2035
Demand Summary	Unit GWh	2024 5,759	2026 5,759	2030 5,955	6,099
Managed Retail Sales Forecast (assigned to LSE) Baseline Demand, non-C&I	GWh	3,607	3,634	3,955	3.861
Baseline Demand, C&I	GWh	3,405	3,455	3,692	3,904
Electric Vehicle Load	GWh	244	346	550	841
Building Electrification	GWh	28	50	101	168
Energy Efficiency	GWh	(96)	(164)	(295)	(431)
BTM PV	GWh	(973)	(1,104)	(1,428)	(1,764)
Demand (at generator bus-bar)	GWh	6,217	6,218	6,431	6,587
		2024	2026	2020	2025
Supply Summary	Unit GWh	2024 845	2026	2030 525	2035 525
Large Hydro Imported Hydro	GWh	1,150	766	69	120
Asset Controlling Supplier	GWh	-,			
Nuclear	GWh	-	-	-	
Biogas	GWh	80	80	80	30
Biomass	GWh	65	38	4	16
Geothermal	GWh	332	454	1,753	1,785
Small Hydro	GWh	291	106	37	69
Wind CAISO	GWh	897	1,336	991	1,014
Wind Out Of State Wind Offshore	GWh GWh	_		250	250 400
Solar Utility Scale	GWh	1,815	1,649	1,451	1,137
Solar Distributed	GWh	32	1,649	32	31
Hybrid or Paired Solar and Battery	GWh	328	626	614	596
		0.0	0.0	0.0	-
 Shed DR	GWh				
 Pumped Storage	GWh GWh	-	-	-	
 Pumped Storage Battery Storage	GWh GWh	- (36)	- (48)	- (159)	- (153)
Pumped Storage Battery Storage Storage Resource Custom Profile	GWh GWh GWh	-		-	- (153) -
Pumped Storage Battery Storage	GWh GWh	-		-	- (153) - -

GHG-free non-RPS Resource Custom Profile	GWh	-			-
Coal	GWh	-	-	-	-
IFM CHP	GWh	313	304	297	178
Supply Demand Balance Summary	Unit	2024	2026	2030	2035
LSE Supply, before curtailment and exports	GWh	6,113	5,868	5,943	5,999
Net Purchases, before curtailment and exports	GWh	104	350	488	588
Curtailment	GWh	(156)	(210)	(239)	(270)
Exports	GWh	(45)	(60)	(142)	(145
Zero Emissions Power From System	GWh	-	-	18	33
Net System Power (incurs emissions)	GWh	306	620	851	970
Check: Supply equals demand		TRUE	TRUE	TRUE	TRUE
Renewable and GHG-Free %	Unit	2024	2026	2030	2035
Retail Sales	GWh	5,759	5,759	5,955	6,099
RPS-Eligible Delivered Renewable	GWh	3,684	4,111	4,973	5,058
GHG free	GWh	5,679	5,402	5,585	5,736
RPS-Eligible Delivered Renewable Percentage	% of retail sales	64%	71%	84%	83%
GHG-free Percentage	% of retail sales	99%	94%	94%	94%

	25 MMT in 2035					
	Emissions Summary					
	Emissions Total	Unit	2024	2026	2030	2035
	CO ₂	MMt/yr	0.265	0.390	0.493	0.492
	PM2.5	tonnes/yr	38	34	33	28
	SO ₂	tonnes/yr	18	15	12	7
	NOx	tonnes/yr	137	114	95	64
		.,				
	Emissions by resource type					
	, ,,					
	CO ₂	Unit	2024	2026	2030	203
	Coal	MMt/yr	-	-	-	-
	CHP	MMt/yr	0.14	0.14	0.13	0.08
	Biogas	MMt/yr		-	-	-
	Biomass	MMt/yr	_	-	-	_
	System Power	MMt/yr	0.13	0.25	0.36	0.41
	Asset Controlling Supplier	MMt/yr		-	-	
	Total	MMt/yr	0.26	0.39	0.49	0.49
	Average emissions intensity	tCO2/MWh	0.046	0.068	0.083	0.081
	Oversupply Emissions Credits	MMt/yr	0.27	0.23	0.04	0.04
	ery					2.01
	PM2.5	Unit	2024	2026	2030	203
	Coal	tonnes/yr	-	-	-	-
	CHP	tonnes/yr	8	8	7	4
	Biogas	tonnes/yr	13	13	13	5
	Biomass	tonnes/yr	19	11	1	4
	System Power	tonnes/yr	(2)	3	12	14
	Total	tonnes/yr	38	34	33	28
	Average emissions intensity	kg/MWh	0.0067	0.0059	0.0056	0.0046
	,	3.				
	SO ₂	Unit	2024	2026	2030	2035
	Coal	tonnes/yr	_	-	-	-
	CHP	tonnes/yr	1	1	1	0
	Biogas	tonnes/yr	10	10	10	4
1	Biomass	tonnes/vr	7	4	0	2
-	Biomass System Power	tonnes/yr tonnes/yr	7 (0)	4 0	0	
	System Power	tonnes/yr	(0)	0	1	1
	System Power Total	tonnes/yr tonnes/yr	(0) 18	0 15	1 12	2 1 7 0.0012
	System Power	tonnes/yr	(0)	0	1	1 7
	System Power Total	tonnes/yr tonnes/yr	(0) 18	0 15	1 12	0.0012
	System Power Total Average emissions intensity	tonnes/yr tonnes/yr kg/MWh	(0) 18 0.0031	0 15 0.0026	1 12 0.0020	0.0012
	System Power Total Average emissions intensity NOx	tonnes/yr tonnes/yr kg/MWh Unit	(0) 18 0.0031	0 15 0.0026	1 12 0.0020	0.0012 2033
	System Power Total Average emissions intensity NOx Coal CHP	tonnes/yr tonnes/yr kg/MWh Unit tonnes/yr tonnes/yr	(0) 18 0.0031 2024	0 15 0.0026	1 12 0.0020 2030	2033 - 18
	System Power Total Average emissions intensity NOx Coal	tonnes/yr tonnes/yr kg/MWh Unit tonnes/yr	(0) 18 0.0031 2024	0 15 0.0026 2026	1 12 0.0020 2030	2031 - 18 17
	System Power Total Average emissions intensity NOX Coal CHP Biogas	tonnes/yr tonnes/yr kg/MWh Unit tonnes/yr tonnes/yr tonnes/yr	(0) 18 0.0031 2024 36 44	0 15 0.0026 2026 35 44	1 12 0.0020 2030 - 34 44	203:
	System Power Total Average emissions intensity NOx Coal CHP Biogas Biomass	tonnes/yr tonnes/yr kg/MWh Unit tonnes/yr tonnes/yr tonnes/yr tonnes/yr	(0) 18 0.0031 2024 - 36 44 58	0 15 0.0026 2026 35 44 32	1 12 0.0020 2030 - 34 44 3	1 7 0.0012 2033 - 18 17 13
	System Power Total Average emissions intensity NOX Coal CHP Biogas Biomass System Power Total	tonnes/yr tonnes/yr kg/MWh Unit tonnes/yr tonnes/yr tonnes/yr tonnes/yr tonnes/yr	(0) 18 0.0031 2024 36 44 58 (1)	0 15 0.0026 2026 35 44 32 3	1 12 0.0020 2030 - 34 44 3 14	1 7 0.0012 2033 - 18 17 13 17 64
	System Power Total Average emissions intensity NOx Coal CHP Biogas Biomass System Power	tonnes/yr tonnes/yr kg/MWh Unit tonnes/yr tonnes/yr tonnes/yr tonnes/yr tonnes/yr tonnes/yr tonnes/yr	(0) 18 0.0031 2024 36 44 58 (1) 137	0 15 0.0026 2026 35 44 32 3	1 12 0.0020 2030 	1 7 0.0012 2033 - 18 17 13 17 64
	System Power Total Average emissions intensity NOX Coal CHP Biogas Biomass System Power Total	tonnes/yr tonnes/yr kg/MWh Unit tonnes/yr tonnes/yr tonnes/yr tonnes/yr tonnes/yr tonnes/yr tonnes/yr	(0) 18 0.0031 2024 36 44 58 (1) 137	0 15 0.0026 2026 35 44 32 3	1 12 0.0020 2030 	1 7 0.0012 2033 - 18 17 13 17 64
	System Power Total Average emissions intensity NOX Coal CHP Biogas Biomass System Power Total Average emissions intensity Supply and Demand Balance	tonnes/yr tonnes/yr kg/MWh Unit tonnes/yr tonnes/yr tonnes/yr tonnes/yr tonnes/yr tonnes/yr tonnes/yr	(0) 18 0.0031 2024 36 44 58 (1) 137	0 15 0.0026 2026 35 44 32 3	1 12 0.0020 2030 	1 7 0.0012 2033 - 18 17 13 17 64
	System Power Total Average emissions intensity NOX Coal CHP Biogas Biomass System Power Total Average emissions intensity Supply and Demand Balance	tonnes/yr tonnes/yr kg/MWh Unit tonnes/yr tonnes/yr tonnes/yr tonnes/yr tonnes/yr tonnes/yr tonnes/yr	(0) 18 0.0031 2024 36 44 58 (1) 137	0 15 0.0026 2026 35 44 32 3 114 0.0199	1 12 0.0020 2030 	1 7 0.0012 203:
	System Power Total Average emissions intensity NOx Coal CHP Biogas Biomass System Power Total Average emissions intensity	tonnes/yr tonnes/yr kg/MWh Unit tonnes/yr tonnes/yr tonnes/yr tonnes/yr tonnes/yr tonnes/yr kg/MWh	(0) 18 0.0031 2024 36 44 58 (1) 137 0.0237	0 15 0.0026 2026 35 44 32 3 114 0.0199	1 12 0.0020 2030 - 34 44 3 14 95 0.0160	1 7 0.0012 203: 18 17 13 17 64 0.0105
	System Power Total Average emissions intensity NOx Coal CHP Biogas Biomass System Power Total Average emissions intensity Supply and Demand Balance Demand Summary	tonnes/yr tonnes/yr kg/MWh Unit tonnes/yr Unit	(0) 18 0.0031 2024 36 44 58 (1) 137 0.0237	0 15 0.0026 2026 35 44 32 3 114 0.0199	1 12 0.0020 2030 34 44 3 14 95 0.0160	1 7 0.0012 203: 18 17 13 17 64 0.0105 203: 6,099
	System Power Total Average emissions intensity NOx Coal CHP Biogas Biomass System Power Total Average emissions intensity Supply and Demand Balance Demand Summary Managed Retail Sales Forecast (assigned to LSE) Baseline Demand, non-C&I	tonnes/yr tonnes/yr kg/MWh Unit tonnes/yr Golfman Golffman Golffm	(0) 18 0.0031 2024 36 44 58 (1) 137 0.0237 2024 5,759 3,607	0 15 0.0026 2026 35 44 32 3 114 0.0199 2026 5,759	1 12 0.0020 2030 34 44 3 14 95 0.0160	1 7 0.0012 203: 18 17 13 17 64 0.0105 203: 6,099 3,861
	System Power Total Average emissions intensity NOx Coal CHP Biogas Biomass System Power Total Average emissions intensity Supply and Demand Balance Demand Summary Managed Retail Sales Forecast (assigned to LSE)	tonnes/yr tonnes/yr kg/MWh Unit tonnes/yr donnes/yr tonnes/yr tonnes/yr kg/MWh	(0) 18 0.0031 2024 36 44 58 (1) 137 0.0237	0 15 0.0026 2026 35 44 32 3 114 0.0199	1 12 0.0020 2030 34 44 3 14 95 0.0160	10.0012 203: 18 17 13 17 64 0.0105 203: 6,099 3,861 3,904
	System Power Total Average emissions intensity NOx Coal CHP Biogas Biomass System Power Total Average emissions intensity Supply and Demand Balance Demand Summary Managed Retail Sales Forecast (assigned to LSE) Baseline Demand, c&I Electric Vehicle Load	tonnes/yr tonnes/yr kg/MWh Unit tonnes/yr tonnes/yr tonnes/yr tonnes/yr tonnes/yr tonnes/yr tonnes/yr tonnes/yr tonnes/yr Gowh GWh GWh GWh	(0) 18 0.0031 2024 36 44 58 (1) 137 0.0237 2024 5,759 3,607 3,405 244	0 15 0.0026 2026 35 44 32 3 114 0.0199 2026 5,759 3,634 3,455 346	1 12 0.0020 2030 344 44 3 14 95 0.0160 2030 5,955 3,805 3,692 550	10.0012 203: 18 17 13 17 64 0.0105 203: 6,099 3,861 3,904 841
	System Power Total Average emissions intensity NOx Coal CHP Biogas Biomass System Power Total Average emissions intensity Supply and Demand Balance Demand Summary Managed Retail Sales Forecast (assigned to LSE) Baseline Demand, c&I Electric Vehicle Load Building Electrification	tonnes/yr tonnes/yr kg/MWh Unit tonnes/yr tonnes/yr tonnes/yr tonnes/yr tonnes/yr tonnes/yr tonnes/yr tonnes/yr tonnes/yr Golden Go	(0) 18 0.0031 2024 36 44 58 (1) 137 0.0237 2024 5,759 3,607 3,405 244 28	0 15 0.0026 2026 35 44 32 3 114 0.0199 2026 5,759 3,634 3,455 346 50	1 12 0.0020 2030 34 44 3 14 95 0.0160 2030 5,955 3,805 3,692 550 101	1000012 203: 18 17 13 17 64 0.0105 203: 6,099 3,861 3,904 841 168
	System Power Total Average emissions intensity NOx Coal CHP Biogas Biomass System Power Total Average emissions intensity Supply and Demand Balance Demand Summary Managed Retail Sales Forecast (assigned to LSE) Baseline Demand, c&I Electric Vehicle Load	tonnes/yr tonnes/yr kg/MWh Unit tonnes/yr tonnes/yr tonnes/yr tonnes/yr tonnes/yr tonnes/yr tonnes/yr donnes/yr tonnes/yr fonnes/yr tonnes/yr kg/MWh GWh GWh GWh GWh GWh	(0) 18 0.0031 2024 36 44 58 (1) 137 0.0237 2024 5,759 3,607 3,405 244	0 15 0.0026 2026 35 44 32 3 114 0.0199 2026 5,759 3,634 3,455 346	1 12 0.0020 2030 344 44 3 14 95 0.0160 2030 5,955 3,805 3,692 550	100012 203: 18 17 13 17 64 0.0105 203: 6,099 3,861 3,904 841 168 (431
	System Power Total Average emissions intensity NOx Coal CHP Biogas Biomass System Power Total Average emissions intensity Supply and Demand Balance Demand Summary Managed Retail Sales Forecast (assigned to LSE) Baseline Demand, non-C&I Baseline Demand, c&I Electric Vehicle Load Building Electrification Energy Efficiency	tonnes/yr tonnes/yr kg/MWh Unit tonnes/yr tonnes/yr tonnes/yr tonnes/yr tonnes/yr tonnes/yr tonnes/yr donnes/yr tonnes/yr tonnes/yr tonnes/yr tonnes/yr kg/MWh GWh GWh GWh GWh GWh GWh	(0) 18 0.0031 2024 36 44 58 (1) 137 0.0237 2024 5,759 3,607 3,405 244 28 (96)	0 15 0.0026 2026 35 44 32 3 114 0.0199 2026 5,759 3,634 3,455 346 50 (164)	1 12 2 0.0020 2030 34 44 43 3 14 95 0.0160 2030 5,955 3,805 3,692 550 101 (295)	10000000000000000000000000000000000000
	System Power Total Average emissions intensity NOx Coal CHP Biogas Biomass System Power Total Average emissions intensity Supply and Demand Balance Demand Summary Managed Retail Sales Forecast (assigned to LSE) Baseline Demand, non-C&I Baseline Demand, C&I Electric Vehicle Load Building Electrification Energy Efficiency BTM PV	tonnes/yr tonnes/yr kg/MWh Unit tonnes/yr tonnes/yr tonnes/yr tonnes/yr tonnes/yr tonnes/yr tonnes/yr tonnes/yr GWh GWh GWh GWh GWh GWh	(0) 18 0.0031 2024 36 44 58 (1) 137 0.0237 2024 5,759 3,607 3,405 244 28 (96) (973)	0 15 0.0026 2026 35 44 32 3 114 0.0199 2026 5,759 3,634 3,455 346 50 (164) (1,104)	1 12 0.0020 2030 34 44 3 14 95 0.0160 5,955 3,805 550 101 (295) (1,428)	10.0012 203: 18 17 13 17 64 0.0105 203: 6,099 3,861 3,904 841 168 (431) 1,764
	System Power Total Average emissions intensity NOx Coal CHP Biogas Biomass System Power Total Average emissions intensity Supply and Demand Balance Demand Summary Managed Retail Sales Forecast (assigned to LSE) Baseline Demand, non-C&I Baseline Demand, C&I Electric Vehicle Load Building Electrification Energy Efficiency BTM PV	tonnes/yr tonnes/yr kg/MWh Unit tonnes/yr tonnes/yr tonnes/yr tonnes/yr tonnes/yr tonnes/yr tonnes/yr tonnes/yr GWh GWh GWh GWh GWh GWh	(0) 18 0.0031 2024 36 44 58 (1) 137 0.0237 2024 5,759 3,607 3,405 244 28 (96) (973)	0 15 0.0026 2026 35 44 32 3 114 0.0199 2026 5,759 3,634 3,455 346 50 (164) (1,104)	1 12 0.0020 2030 34 44 3 14 95 0.0160 5,955 3,805 550 101 (295) (1,428)	100012 203: 18 17 13 17 64 0.0105 203: 6,099 3,861 168 841 168 (431 1,764 6,587
	System Power Total Average emissions intensity NOx Coal CHP Biogas Biomass System Power Total Average emissions intensity Supply and Demand Balance Demand Summary Managed Retail Sales Forecast (assigned to LSE) Baseline Demand, non-C&I Baseline Demand, coal Electric Vehicle Load Building Electrification Energy Efficiency BTM PV Demand (at generator bus-bar)	tonnes/yr tonnes/yr kg/MWh Unit tonnes/yr tonnes/yr tonnes/yr tonnes/yr tonnes/yr tonnes/yr tonnes/yr Mg/MWh Unit GWh	(0) 18 0.0031 2024 36 44 58 (1) 137 0.0237 2024 5,759 3,607 3,405 244 28 (96) (973) 6,217	0 15 0.0026 2026 35 44 32 3 114 0.0199 2026 5,759 3,634 3,455 346 50 (164) (1,104) 6,218	1 12 2 0.0020 2030 34 44 44 95 0.0160 2030 5,955 3,805 3,692 550 101 (295) (1,428) 6,431	10.0012 203: 18 17 13 17 64 0.0105 203: 6,099 3,861 3,904 841 168 (431) (1,764 6,587
	System Power Total Average emissions intensity NOx Coal CHP Biogas Biomass System Power Total Average emissions intensity Supply and Demand Balance Demand Summary Managed Retail Sales Forecast (assigned to LSE) Baseline Demand, non-C&I Baseline Demand, C&I Electric Vehicle Load Building Electrification Energy Efficiency BTM PV Demand (at generator bus-bar) Supply Summary Large Hydro	tonnes/yr tonnes/yr kg/MWh Unit tonnes/yr tonnes/yr tonnes/yr tonnes/yr tonnes/yr tonnes/yr tonnes/yr GWh	(0) 18 0.0031 2024 36 44 58 (1) 137 0.0237 2024 5,759 3,607 3,405 244 28 (96) (973) 6,217 2024 845	0 15 0.0026 2026 35 44 32 3 114 0.0199 2026 5,759 3,634 3,455 50 (164) (1,104) 6,218	1 12 0.0020 2030 34 44 33 14 95 0.0160 2030 5,955 3,805 3,692 550 101 (295) 1,428 6,431 2030 525	203: 203: 18 17 64 0.0105 203: 6,099 3,861 3,904 841 168 (431 (1,764 6,587 203: 525
	System Power Total Average emissions intensity NOx Coal CHP Biogas Biomass System Power Total Average emissions intensity Supply and Demand Balance Demand Summary Managed Retail Sales Forecast (assigned to LSE) Baseline Demand, non-C&I Baseline Demand, non-C&I Baseline Demand, pon-C&I Benergy Efficiency BTM PV Demand (at generator bus-bar) Supply Summary Large Hydro Imported Hydro	tonnes/yr tonnes/yr kg/MWh Unit tonnes/yr tonnes/yr tonnes/yr tonnes/yr tonnes/yr tonnes/yr tonnes/yr tonnes/yr donnes/yr tonnes/yr tonnes/yr tonnes/yr kg/MWh Unit GWh	(0) 18 0.0031 2024 36 44 58 (1) 137 0.0237 2024 5,759 3,607 3,405 244 28 (96) (973) 6,217	0 15 0.0026 2026 35 44 32 3 114 0.0199 2026 5,759 3,634 50 (164) (1,104) 6,218	1 12 0.0020 2030 34 44 3 14 95 0.0160 5,955 3,805 550 101 (295) (1,428) 6,431 2030	203 203 18 17 16 64 0.0105 203 6,099 3,861 3,904 841 168 (433 (1,766 6,587 203 528
	System Power Total Average emissions intensity NOx Coal CHP Biogas Biomass System Power Total Average emissions intensity Supply and Demand Balance Demand Summary Managed Retail Sales Forecast (assigned to LSE) Baseline Demand, non-C&I Baseline Demand, C&I Electric Vehicle Load Building Electrification Energy Efficiency BTM PV Demand (at generator bus-bar) Supply Summary Large Hydro	tonnes/yr tonnes/yr kg/MWh Unit tonnes/yr tonnes/yr tonnes/yr tonnes/yr tonnes/yr tonnes/yr tonnes/yr tonnes/yr donnes/yr tonnes/yr	(0) 18 0.0031 2024 36 44 58 (1) 137 0.0237 2024 5,759 3,607 3,405 244 28 (96) (973) 6,217 2024 845	0 15 0.0026 2026 35 44 32 3 114 0.0199 2026 5,759 3,634 3,455 346 50 (164) 6,218 2026 525 766	1 12 0.0020 2030 34 44 3 14 95 0.0160 2030 5,955 3,805 3,692 550 101 (295) (1,428) 6,431 525 69	203 18 17 13 14 16 0.0105 203 6,099 3,861 3,904 841 166 (431 (1,764 6,587
	System Power Total Average emissions intensity NOx Coal CHP Biogas Biomass System Power Total Average emissions intensity Supply and Demand Balance Demand Summary Managed Retail Sales Forecast (assigned to LSE) Baseline Demand, non-C&I Baseline Demand, C&I Electric Vehicle Load Building Electrification Energy Efficiency BTM PV Demand (at generator bus-bar) Supply Summary Large Hydro Imported Hydro Asset Controlling Supplier Nuclear	tonnes/yr tonnes/yr kg/MWh Unit tonnes/yr kg/MWh Unit GWh	(0) 18 0.0031 2024 36 44 58 (1) 137 0.0237 2024 5,759 3,607 3,405 244 28 (96) (973) 6,217 2024 845 1,150	0 15 0.0026 2026 35 44 32 3 114 0.0199 2026 5,759 3,634 3,455 50 (164) (1,104) 6,218 2026 5,766	1 12 0.0020 2030 34 44 3 14 95 0.0160 2030 5,955 3,805 3,692 550 101 (295) 1,1428 6,431 2030 525 69	203 203 18 17 19 64 0.0105 203 6,095 3,861 3,904 841 166 (433 (1,764 6,587 203 525 120
	System Power Total Average emissions intensity NOx Coal CHP Blogas Biomass System Power Total Average emissions intensity Supply and Demand Balance Demand Summary Managed Retail Sales Forecast (assigned to LSE) Baseline Demand, non-C&I Baseline Demand, con-C&I Beliectric Vehicle Load Building Electrification Energy Efficiency BTM PV Demand (at generator bus-bar) Supply Summary Large Hydro Imported Hydro Asset Controlling Supplier Nuclear Biogas	tonnes/yr tonnes/yr kg/MWh Unit tonnes/yr tonnes/yr tonnes/yr tonnes/yr tonnes/yr tonnes/yr tonnes/yr tonnes/yr tonnes/yr tonnes/yr tonnes/yr donnes/yr tonnes/yr tonnes/	(0) 18 0.0031 2024 36 44 58 (1) 137 0.0237 2024 5,759 3,607 3,405 244 28 (96) (973) 6,217 2024 845 1,150	0 15 0.0026 2026 35 44 32 3 114 0.0199 2026 5,759 3,634 3,455 346 50 (164) (1,104) 6,218 2026 525 766	1 12 0.0020 2030 34 44 3 14 95 0.0160 2030 5,955 3,805 3,692 550 101 (295) (1,428) 6,431 525 69	203: 18 17 64 0.0105 203: 3,861 1,764 6,587 203: 203: 3,904 841 1,686 (431 1,764 6,587
	System Power Total Average emissions intensity NOx Coal CHP Biogas Biomass System Power Total Average emissions intensity Supply and Demand Balance Demand Summary Managed Retail Sales Forecast (assigned to LSE) Baseline Demand, non-C&I Baseline Demand, non-C&I Electric Vehicle Load Building Electrification Energy Efficiency BTM PV Demand (at generator bus-bar) Supply Summary Large Hydro Imported Hydro Asset Controlling Supplier Nuclear Biogas Biomass	tonnes/yr tonnes/yr kg/MWh Unit tonnes/yr kg/MWh Unit GWh	(0) 18 0.0031 2024 36 44 58 (1) 137 0.0237 2024 5,759 3,607 3,405 244 28 (96) (973) 6,217 2024 845 1,150	0 15 0.0026 0.00	1 12 0.0020 2030 2030 34 44 43 3 14 95 0.0160 2030 5,955 3,805 550 101 (295) (1,428) 6,431 2030 525 69 80 4	203: 18 17 13 17 64 0.0105 203: 6,099 3,861 168 (431) (1,764 6,587 203: 525 120 30 16
	System Power Total Average emissions intensity NOx Coal CHP Biogas Biomass System Power Total Average emissions intensity Supply and Demand Balance Demand Summary Managed Retail Sales Forecast (assigned to LSE) Baseline Demand, non-C&I Baseline Demand, C&I Electric Vehicle Load Building Electrification Energy Efficiency BTM PV Demand (at generator bus-bar) Supply Summary Large Hydro Imported Hydro Asset Controlling Supplier Nuclear Biogas Biomass Geothermal	tonnes/yr tonnes/yr kg/MWh Unit tonnes/yr tonnes/yr tonnes/yr tonnes/yr tonnes/yr tonnes/yr tonnes/yr Mg/MWh Unit GWh	(0) 18 0.0031 2024 36 44 58 (1) 137 0.0237 2024 5,759 3,607 3,405 244 28 (96) (973) 6,217 2024 845 1,150	0 15 0.0026 0.00	1 12 0.0020 2030 34 44 3 14 95 0.0160 5.955 3,805 3,692 550 101 (295) 1,428 6,431 2030 525 69 - 80 4 1,753	1 7 0.0012 203:
	System Power Total Average emissions intensity NOx Coal CHP Biogas Biomass System Power Total Average emissions intensity Supply and Demand Balance Demand Summary Managed Retail Sales Forecast (assigned to LSE) Baseline Demand, non-C&I Baseline Demand, non-C&I Electric Vehicle Load Building Electrification Energy Efficiency BTM PV Demand (at generator bus-bar) Supply Summary Large Hydro Imported Hydro Asset Controlling Supplier Nuclear Biogas Biomass	tonnes/yr tonnes/yr kg/MWh Unit tonnes/yr tonnes/yr tonnes/yr tonnes/yr tonnes/yr tonnes/yr tonnes/yr tonnes/yr Mg/MWh Unit GWh	(0) 18 0.0031 2024 36 44 58 (1) 137 0.0237 2024 5,759 3,607 3,405 244 28 (96) (973) 6,217 2024 845 1,150	0 15 0.0026 0.00	1 12 0.0020 2030 2030 34 44 43 3 14 95 0.0160 2030 5,955 3,805 550 101 (295) (1,428) 6,431 2030 525 69 80 4	1 0.0012 2033 18 17 64 0.0105 2033 3,861 168 (431 (1,764 6,587 2033 5,525 120

	Wind Out Of State	GWh	-	-	250	250
	Wind Offshore	GWh	_	_	-	400
	Solar Utility Scale	GWh	1.815	1,649	1,451	1,137
	Solar Distributed	GWh	32	32	32	31
	Hybrid or Paired Solar and Battery	GWh	328	626	614	596
	Shed DR	GWh	0.0	0.0	0.0	-
	Pumped Storage	GWh	_	_	_	_
	Battery Storage	GWh	(36)	(48)	(159)	(153)
	Storage Resource Custom Profile	GWh			- 1	· - '
	RPS Resource Custom Profile	GWh	-	_	-	-
	GHG-free non-RPS Resource Custom Profile	GWh	-	-	-	-
	Coal	GWh	-	-	-	-
	IFMCHP	GWh	313	304	297	178
	Supply Demand Balance Summary	Unit	2024	2026	2030	2035
	LSE Supply, before curtailment and exports	GWh	6,113	5,868	5,943	5,999
	Net Purchases, before curtailment and exports	GWh	104	350	488	588
	Curtailment	GWh	(156)	(210)	(239)	(270)
	Exports	GWh	(45)	(60)	(142)	(145)
	Zero Emissions Power From System	GWh	-	-	18	33
	Net System Power (incurs emissions)	GWh	306	620	851	970
	Check: Supply equals demand		TRUE	TRUE	TRUE	TRUE
	Renewable and GHG-Free %	Unit	2024	2026	2030	2035
-	Retail Sales	GWh	5.759	5.759	5,955	6,099
-	RPS-Eligible Delivered Renewable	GWh	3,684	4,111	4,973	5,058
	GHG free	GWh	5,679	5,402	5,585	5,736
-	RPS-Eligible Delivered Renewable Percentage	% of retail sales	64%	71%	84%	83%
-	GHG-free Percentage	% of retail sales	99%	94%	94%	94%
-	ono neer ercentage	70 Of Tetali Sules	3976	3470	3470	3470
			1			

Notes	
Includes both in-CAISO and import emissions	
Only In-CAISO emissions	
Only In-CAISO emissions	†
Only In-CAISO emissions	-
Only In-Calco emissions	
	<u> </u>
Notes	
Included in GHG emissions total	
Includes emissions from in-CAISO dispatchable gas and unspecified imports	
g	
Includes both in-CAISO and import emissions	
Emissions per MWh of sales	-
When hourly supply exceeds hourly load and system power is on the margin, LSE recieves credit at the system power emissions rate. Impact included in Total.	
when hourly supply exceeds hourly houd and system power is on the margin, Lise receives created at the system power emissions rate. Impact included in total.	
Notes	
Information only, not included in total	<u> </u>
	<u> </u>
In-CAISO emissions only - unspecified import emissions excluded	
Only In-CAISO emissions	
Emissions per MWh of sales	
Notes	
Information only, not included in total	†
information only, not included in total	
	
	<u> </u>
In-CAISO emissions only - unspecified import emissions excluded	
Only In-CAISO emissions	
Emissions per MWh of sales	<u> </u>
Notes	
Information only, not included in total	
In-CAISO emissions only - unspecified import emissions excluded	
Only In-CAISO emissions	
omp in-exact emissions Emission sper MWh of sales	
timissions per wiwin of sures	
	
	
Sales forecast (before T&D losses increase demand at generator bus-bar)	
Summary of active inputs from Demand Inputs tab	
	\vdash
Mater	
Notes	
	
	!
	
<u> </u>	

Wind and solar values represent production potential (pre-curtailment).	
Curtailment is calculated at the portfolio level (as opposed to the resource level), and is included as a line item below	
Distributed solar generation that is in front of the meter	
Negative because storage losses represent net negative energy production	
Negative because storage losses represent net negative energy production	
Negative because storage losses represent net negative energy production	
Notes	
Represents LSE's net power production, before curtailment and exports reduce the power available to dispace CAISO dispatchable gas/unspecified imports	
The net system power that the LSE would consume (positive = consume from system, negative = supply to system) if dispatchable gas/unspecified imports were on the margin at the system level in all hours. For information only - not directly used to calculate LSE emissions.	
Power that, if supplied to the system, would not displace CAISO dispatchable gas and/or unspecified import emissions and would instead be curtailed	
Power that, if supplied to the system, would not displace CAISO dispatchable gas and/or unspecified import emissions and would instead be exported	
Power supplied to meet LSE demand that does not incur emissions. Oversupply conditions at the system level result in surplus zero emissions power in some hours.	
Power supplied by the system (or sent back to the system from if negative) in hours when CAISO dispatchable gas and/or unspecified imports are on the margin. The net system power produced or consumed is multiplied by the system power emissions rate in each hour.	
Notes	
Represents delivered renewable energy. Not directly comparable to production from an LSE's RPS-eligible resources.	
A small fraction of Asset Controlling Supplier imports are not counted as GHG-free	
Represents delivered renewable energy. Not directly comparable to production from an LSE's RPS-eligible resources.	

Assio	Individual LSE Energy Load Forecast Assignments for Use in 2022 LSE IRPs Assigned per June 15, 2022 ALJ Ruling - https://docs.cpuc.ca.gov/SearchRes.aspx?docformat=ALL&docid=485625915						
Service Area	LSE CPUC ID	LSE Name	YEAR	TYPE	Final IRP Sales Forecast (GWH)		
PGE		Pacific Gas and Electric (Direct Access)	2023		11,393.00		
PGE		Pacific Gas and Electric (Direct Access)	2024		11,393.00		
PGE		Pacific Gas and Electric (Direct Access)	2025		11,393.00		
PGE		Pacific Gas and Electric (Direct Access)	2026		11,393.00		
PGE		Pacific Gas and Electric (Direct Access)	2027		11,393.00		
PGE		Pacific Gas and Electric (Direct Access) Pacific Gas and Electric (Direct Access)	2028		11,393.00		
PGE PGE		,,	2029 2030		11,393.00		
PGE		Pacific Gas and Electric (Direct Access) Pacific Gas and Electric (Direct Access)	2030		11,393.00		
PGE		Pacific Gas and Electric (Direct Access)	2031		11,393.00		
PGE		Pacific Gas and Electric (Direct Access)	2032		11,393.00 11,393.00		
PGE		Pacific Gas and Electric (Direct Access)	2033		11,393.00		
PGE		Pacific Gas and Electric (Direct Access)	2034		11,393.00		
SCE		Southern California Edison (Direct Access)	2023		13,420.85		
SCE		Southern California Edison (Direct Access)	2023		13,420.85		
SCE		Southern California Edison (Direct Access)	2025		13,420.85		
SCE		Southern California Edison (Direct Access)	2026		13,420.85		
SCE		Southern California Edison (Direct Access)	2020		13,420.85		
SCE		Southern California Edison (Direct Access)	2028		13,420.85		
SCE		Southern California Edison (Direct Access)	2029		13,420.85		
SCE		Southern California Edison (Direct Access)	2030		13,420.85		
SCE		Southern California Edison (Direct Access)	2031		13,420.85		
SCE		Southern California Edison (Direct Access)	2032		13,420.85		
SCE		Southern California Edison (Direct Access)	2033		13,420.85		
SCE		Southern California Edison (Direct Access)	2034		13,420.85		
SCE		Southern California Edison (Direct Access)	2035		13,420.85		
SDGE		San Diego Gas and Electric (Direct Access)	2023	ESP	3,940.00		
SDGE		San Diego Gas and Electric (Direct Access)	2024		3,940.00		
SDGE		San Diego Gas and Electric (Direct Access)	2025	ESP	3,940.00		
SDGE		San Diego Gas and Electric (Direct Access)	2026	ESP	3,940.00		
SDGE		San Diego Gas and Electric (Direct Access)	2027	ESP	3,940.00		
SDGE		San Diego Gas and Electric (Direct Access)	2028	ESP	3,940.00		
SDGE		San Diego Gas and Electric (Direct Access)	2029	ESP	3,940.00		
SDGE		San Diego Gas and Electric (Direct Access)	2030	ESP	3,940.00		
SDGE		San Diego Gas and Electric (Direct Access)	2031	ESP	3,940.00		
SDGE		San Diego Gas and Electric (Direct Access)	2032	ESP	3,940.00		
SDGE		San Diego Gas and Electric (Direct Access)	2033	ESP	3,940.00		
SDGE		San Diego Gas and Electric (Direct Access)	2034	ESP	3,940.00		
SDGE		San Diego Gas and Electric (Direct Access)	2035	ESP	3,940.00		
PGE	PGE	Pacific Gas and Electric (Bundled)	2023	IOU	26,903.26		
PGE	PGE	Pacific Gas and Electric (Bundled)	2024	IOU	27,098.07		
PGE	PGE	Pacific Gas and Electric (Bundled)	2025	IOU	27,256.63		
PGE	PGE	Pacific Gas and Electric (Bundled)	2026	IOU	27,398.95		
PGE	PGE	Pacific Gas and Electric (Bundled)	2027		27,549.43		
PGE	PGE	Pacific Gas and Electric (Bundled)	2028	IOU	27,650.24		
PGE	PGE	Pacific Gas and Electric (Bundled)	2029	IOU	27,879.43		
PGE	PGE	Pacific Gas and Electric (Bundled)	2030		28,019.56		
PGE	PGE	Pacific Gas and Electric (Bundled)	2031		28,355.70		
PGE	PGE	Pacific Gas and Electric (Bundled)	2032		28,612.64		
PGE	PGE	Pacific Gas and Electric (Bundled)	2033		29,044.21		
PGE	PGE	Pacific Gas and Electric (Bundled)	2034		29,434.18		
PGE	PGE	Pacific Gas and Electric (Bundled)	2035		29,851.64		
SCE	SCE	Southern California Edison (Bundled)	2023		51,695.20		
SCE	SCE	Southern California Edison (Bundled)	2024		51,866.12		
SCE	SCE	Southern California Edison (Bundled)	2025		52,196.12		
SCE	SCE	Southern California Edison (Bundled)	2026		52,501.95		
SCE	SCE	Southern California Edison (Bundled)	2027		52,943.78		
SCE	SCE	Southern California Edison (Bundled)	2028		53,251.42		
SCE	SCE	Southern California Edison (Bundled)	2029		53,601.83		
SCE	SCE	Southern California Edison (Bundled)	2030		53,909.21		
SCE	SCE	Southern California Edison (Bundled)	2031		54,293.31		
SCE	SCE	Southern California Edison (Bundled)	2032		54,525.33		
SCE	SCE	Southern California Edison (Bundled)	2033		54,791.53		
SCE	SCE	Southern California Edison (Bundled)	2034	IUU	55,033.06		

r					
SCE	SCE	Southern California Edison (Bundled)	2035	IOU	55,275.88
SDGE	SDGE	San Diego Gas and Electric (Bundled)	2023	IOU	4,421.70
SDGE	SDGE	San Diego Gas and Electric (Bundled)	2024	IOU	3,637.80
SDGE	SDGE	San Diego Gas and Electric (Bundled)	2025	IOU	3,638.92
SDGE	SDGE	San Diego Gas and Electric (Bundled)	2026	IOU	3,645.46
SDGE	SDGE	San Diego Gas and Electric (Bundled)	2027	IOU	3,656.22
SDGE	SDGE	San Diego Gas and Electric (Bundled)	2028		3,663.55
SDGE	SDGE	San Diego Gas and Electric (Bundled)	2029		
			_		3,677.82
SDGE	SDGE	San Diego Gas and Electric (Bundled)	2030		3,694.02
SDGE	SDGE	San Diego Gas and Electric (Bundled)	2031		3,716.29
SDGE	SDGE	San Diego Gas and Electric (Bundled)	2032		3,734.01
SDGE	SDGE	San Diego Gas and Electric (Bundled)	2033	IOU	3,755.70
SDGE	SDGE	San Diego Gas and Electric (Bundled)	2034	IOU	3,772.75
SDGE	SDGE	San Diego Gas and Electric (Bundled)	2035	IOU	3,787.41
PGE	3CE	Central Coast Community Energy	2023	CCA	4,557.05
PGE	3CE	Central Coast Community Energy	2024	CCA	4,594.72
PGE	3CE	Central Coast Community Energy	2025		4,617.45
PGE	3CE	Central Coast Community Energy	2026		4,640.88
		, ,	_		· · · · · · · · · · · · · · · · · · ·
PGE	3CE	Central Coast Community Energy	2027		4,672.05
PGE	3CE	Central Coast Community Energy	2028		4,697.30
PGE	3CE	Central Coast Community Energy	2029		4,729.19
PGE	3CE	Central Coast Community Energy	2030		4,760.56
PGE	3CE	Central Coast Community Energy	2031	CCA	4,799.79
PGE	3CE	Central Coast Community Energy	2032	CCA	4,829.14
PGE	3CE	Central Coast Community Energy	2033	CCA	4,864.25
PGE	3CE	Central Coast Community Energy	2034		4,898.33
PGE	3CE	Central Coast Community Energy	2035		4,935.53
PGE	CPSF	CleanPowerSF	2023		· · · · · · · · · · · · · · · · · · ·
			_		2,943.85
PGE	CPSF	CleanPowerSF	2024		2,969.61
PGE	CPSF	CleanPowerSF	2025		2,992.90
PGE	CPSF	CleanPowerSF	2026		3,015.45
PGE	CPSF	CleanPowerSF	2027	CCA	3,039.05
PGE	CPSF	CleanPowerSF	2028	CCA	3,061.60
PGE	CPSF	CleanPowerSF	2029	CCA	3,089.80
PGE	CPSF	CleanPowerSF	2030	CCA	3,119.16
PGE	CPSF	CleanPowerSF	2031	CCA	3,152.83
PGE	CPSF	CleanPowerSF	2032	CCA	3,181.17
PGE	CPSF	CleanPowerSF	2033		3,215.15
PGE	CPSF	CleanPowerSF	2034		· · · · · · · · · · · · · · · · · · ·
			_		3,247.21
PGE	CPSF	CleanPowerSF	2035		3,292.89
PGE	EBCE	East Bay Community Energy	2023		6,651.95
PGE	EBCE	East Bay Community Energy	2024		6,739.80
PGE	EBCE	East Bay Community Energy	2025		6,815.88
PGE	EBCE	East Bay Community Energy	2026	CCA	6,887.17
PGE	EBCE	East Bay Community Energy	2027	CCA	6,954.65
PGE	EBCE	East Bay Community Energy	2028	CCA	7,026.50
PGE	EBCE	East Bay Community Energy	2029	CCA	7,100.58
PGE	EBCE	East Bay Community Energy	2030		7,179.74
PGE	EBCE	East Bay Community Energy	2031		7,259.20
PGE	EBCE	East Bay Community Energy	2031		
		, , ,,			7,326.11
PGE	EBCE	East Bay Community Energy	2033		7,393.58
PGE	EBCE	East Bay Community Energy	2034		7,461.20
PGE	EBCE	East Bay Community Energy	2035		7,539.97
PGE	KCCP	King City Community Power	2023		33.86
PGE	KCCP	King City Community Power	2024	CCA	34.12
PGE	KCCP	King City Community Power	2025	CCA	34.33
PGE	KCCP	King City Community Power	2026		34.55
PGE	КССР	King City Community Power	2027		34.80
PGE	KCCP	King City Community Power	2028		35.05
PGE	KCCP	King City Community Power	2029		35.39
PGE	KCCP	King City Community Power	2029		
r G E		· · · · · ·			35.73
DCE	KCCP	King City Community Power	2031		36.17
PGE			2032	CCA	36.54
PGE	KCCP	King City Community Power	_		
PGE PGE	КССР	King City Community Power	2033	CCA	37.00
PGE	KCCP KCCP	·	_	CCA	
PGE PGE	КССР	King City Community Power	2033	CCA CCA	37.00
PGE PGE PGE	KCCP KCCP	King City Community Power King City Community Power	2033 2034	CCA CCA CCA	37.00 37.46

PGE	MCE	Marin Clean Energy	2025		5,755.61
PGE	MCE	Marin Clean Energy	2026		5,759.26
PGE	MCE	Marin Clean Energy	2027		5,766.74
PGE	MCE	Marin Clean Energy	2028	CCA	5,795.21
PGE	MCE	Marin Clean Energy	2029	CCA	5,827.36
PGE	MCE	Marin Clean Energy	2030	CCA	5,955.34
PGE	MCE	Marin Clean Energy	2031	CCA	5,982.79
PGE	MCE	Marin Clean Energy	2032	CCA	6,039.93
PGE	MCE	Marin Clean Energy	2033	CCA	6,040.19
PGE	MCE	Marin Clean Energy	2034	CCA	6,066.94
PGE	MCE	Marin Clean Energy	2035		6,098.58
PGE	PCEA	Peninsula Clean Energy Authority	2023		3,424.82
PGE	PCEA	Peninsula Clean Energy Authority	2024		3,455.72
PGE	PCEA	Peninsula Clean Energy Authority	2025		· · · · · · · · · · · · · · · · · · ·
PGE	PCEA	<u> </u>			3,461.01
		Peninsula Clean Energy Authority	2026		3,495.78
PGE	PCEA	Peninsula Clean Energy Authority	2027		3,554.01
PGE	PCEA	Peninsula Clean Energy Authority	2028		3,620.17
PGE	PCEA	Peninsula Clean Energy Authority	2029		3,666.17
PGE	PCEA	Peninsula Clean Energy Authority	2030		3,721.49
PGE	PCEA	Peninsula Clean Energy Authority	2031		3,780.66
PGE	PCEA	Peninsula Clean Energy Authority	2032	CCA	3,847.92
PGE	PCEA	Peninsula Clean Energy Authority	2033	CCA	3,897.29
PGE	PCEA	Peninsula Clean Energy Authority	2034	CCA	3,960.71
PGE	PCEA	Peninsula Clean Energy Authority	2035	CCA	4,032.71
PGE	PIONEER	Pioneer Community Energy	2023	CCA	1,888.43
PGE	PIONEER	Pioneer Community Energy	2024	CCA	1,904.69
PGE	PIONEER	Pioneer Community Energy	2025	CCA	1,916.17
PGE	PIONEER	Pioneer Community Energy	2026	CCA	1,926.85
PGE	PIONEER	Pioneer Community Energy	_		1,938.95
PGE	PIONEER	Pioneer Community Energy	2028		1,951.69
PGE	PIONEER	Pioneer Community Energy	2029		1,968.03
PGE	PIONEER	,	2029		
		Pioneer Community Energy	_		1,986.47
PGE	PIONEER	Pioneer Community Energy	2031		2,006.21
PGE	PIONEER	Pioneer Community Energy	2032		2,023.27
PGE	PIONEER	Pioneer Community Energy	2033		2,044.07
PGE	PIONEER	Pioneer Community Energy	2034		2,065.07
PGE	PIONEER	Pioneer Community Energy	2035		2,089.92
PGE	RCEA	Redwood Coast Energy Authority	2023	CCA	674.13
PGE	RCEA	Redwood Coast Energy Authority	2024	CCA	677.92
PGE	RCEA	Redwood Coast Energy Authority	2025	CCA	678.67
PGE	RCEA	Redwood Coast Energy Authority	2026	CCA	680.61
PGE	RCEA	Redwood Coast Energy Authority	2027	CCA	682.11
PGE	RCEA	Redwood Coast Energy Authority	2028	CCA	683.33
PGE	RCEA	Redwood Coast Energy Authority	2029	CCA	684.37
PGE	RCEA	Redwood Coast Energy Authority	2030	CCA	685.27
PGE	RCEA	Redwood Coast Energy Authority	2031		686.06
PGE	RCEA	Redwood Coast Energy Authority	2032		686.77
PGE	RCEA	Redwood Coast Energy Authority	2033		687.38
PGE	RCEA	Redwood Coast Energy Authority	2033		687.96
PGE		Redwood Coast Energy Authority			
	RCEA	<u> </u>	2035		688.50
PGE	SJCE	San José Clean Energy	2023		3,789.74
PGE	SJCE	San José Clean Energy	2024		3,820.79
PGE	SJCE	San José Clean Energy	2025		3,844.49
PGE	SJCE	San José Clean Energy	2026		3,867.62
PGE	SJCE	San José Clean Energy	2027		3,894.50
PGE	SJCE	San José Clean Energy	2028		3,921.64
PGE	SJCE	San José Clean Energy	2029	CCA	3,957.58
PGE	SJCE	San José Clean Energy	2030	CCA	3,995.71
PGE	SJCE	San José Clean Energy	2031	CCA	4,040.38
PGE	SJCE	San José Clean Energy	2032	CCA	4,079.40
PGE	SJCE	San José Clean Energy	2033	CCA	4,126.86
PGE	SJCE	San José Clean Energy	2034		4,174.19
PGE	SJCE	San José Clean Energy	2035		4,227.40
PGE	SVCEA	Silicon Valley Clean Energy Authority	2023		3,654.29
PGE	SVCEA	Silicon Valley Clean Energy Authority	2023		3,681.47
PGE	SVCEA	Silicon Valley Clean Energy Authority	2024		· · · · · · · · · · · · · · · · · · ·
PGE	SVCEA	Silicon Valley Clean Energy Authority Silicon Valley Clean Energy Authority	2025		3,700.66
	SVCEA	ISTRICOTE VALUEY CLEAR EITELSY AUTHORITY	2026	CCA	3,720.83
PGE	SVCEA	Silicon Valley Clean Energy Authority	2027		3,744.51

	1	Tana and a same		1	
PGE	SVCEA	Silicon Valley Clean Energy Authority	2028	1	3,767.83
PGE	SVCEA	Silicon Valley Clean Energy Authority	2029		3,799.80
PGE	SVCEA	Silicon Valley Clean Energy Authority	2030		3,833.43
PGE	SVCEA	Silicon Valley Clean Energy Authority	2031		3,874.42
PGE	SVCEA	Silicon Valley Clean Energy Authority	2032	CCA	3,909.98
PGE	SVCEA	Silicon Valley Clean Energy Authority	2033	CCA	3,953.07
PGE	SVCEA	Silicon Valley Clean Energy Authority	2034	CCA	3,995.93
PGE	SVCEA	Silicon Valley Clean Energy Authority	2035	CCA	4,043.64
PGE	SOMA	Sonoma Clean Power	2023	CCA	2,208.14
PGE	SOMA	Sonoma Clean Power	2024	CCA	2,227.09
PGE	SOMA	Sonoma Clean Power	2025	CCA	2,241.23
PGE	SOMA	Sonoma Clean Power	2026	CCA	2,254.51
PGE	SOMA	Sonoma Clean Power	2027		2,269.72
PGE	SOMA	Sonoma Clean Power	2028		2,285.47
PGE	SOMA	Sonoma Clean Power	2029		2,305.87
PGE	SOMA	Sonoma Clean Power	2030		2,328.20
PGE	SOMA	Sonoma Clean Power	2031		
PGE	SOMA	Sonoma Clean Power	2031		2,353.02
					2,374.63
PGE	SOMA	Sonoma Clean Power	2033		2,400.97
PGE	SOMA	Sonoma Clean Power	2034		2,427.39
PGE	SOMA	Sonoma Clean Power	2035		2,457.92
PGE	VCEA	Valley Clean Energy Alliance	2023		727.31
PGE	VCEA	Valley Clean Energy Alliance	2024		718.40
PGE	VCEA	Valley Clean Energy Alliance	2025	CCA	729.10
PGE	VCEA	Valley Clean Energy Alliance	2026	CCA	740.65
PGE	VCEA	Valley Clean Energy Alliance	2027	CCA	751.72
PGE	VCEA	Valley Clean Energy Alliance	2028	CCA	764.61
PGE	VCEA	Valley Clean Energy Alliance	2029	CCA	774.12
PGE	VCEA	Valley Clean Energy Alliance	2030	CCA	786.37
PGE	VCEA	Valley Clean Energy Alliance	2031	CCA	798.81
PGE	VCEA	Valley Clean Energy Alliance	2032	CCA	812.46
PGE	VCEA	Valley Clean Energy Alliance	2033		822.41
PGE	VCEA	Valley Clean Energy Alliance	2034		833.95
PGE	VCEA	Valley Clean Energy Alliance	2035		846.61
SCE	AVCE	Apple Valley Choice Energy	2023	1	
SCE	AVCE		2023		257.34
SCE	AVCE	Apple Valley Choice Energy Apple Valley Choice Energy	2024		260.33
					262.17
SCE	AVCE	Apple Valley Choice Energy	2026		263.86
SCE	AVCE	Apple Valley Choice Energy	2027		266.23
SCE	AVCE	Apple Valley Choice Energy	2028		268.11
SCE	AVCE	Apple Valley Choice Energy	2029		269.93
SCE	AVCE	Apple Valley Choice Energy	2030		271.62
SCE	AVCE	Apple Valley Choice Energy	2031		273.14
SCE	AVCE	Apple Valley Choice Energy	2032		274.01
SCE	AVCE	Apple Valley Choice Energy	2033	CCA	275.00
SCE	AVCE	Apple Valley Choice Energy	2034	CCA	275.88
SCE	AVCE	Apple Valley Choice Energy	2035	CCA	276.96
SCE	3CE	Central Coast Community Energy	2023	CCA	553.70
SCE	3CE	Central Coast Community Energy	2024	CCA	551.01
SCE	3CE	Central Coast Community Energy	2025		548.29
SCE	3CE	Central Coast Community Energy	2026		545.56
SCE	3CE	Central Coast Community Energy	2027		542.84
SCE	3CE	Central Coast Community Energy	2028		540.12
SCE	3CE	Central Coast Community Energy	2029		537.41
SCE	3CE	Central Coast Community Energy Central Coast Community Energy	2029		
		Central Coast Community Energy Central Coast Community Energy			534.72
SCE	3CE	, .,	2031		532.07
SCE	3CE	Central Coast Community Energy	2032		529.42
SCE	3CE	Central Coast Community Energy	2033		533.00
SCE	3CE	Central Coast Community Energy	2034		536.46
SCE	3CE	Central Coast Community Energy	2035		540.25
SCE	CPASC	Clean Power Alliance	2023		10,901.82
SCE	CPASC	Clean Power Alliance	2024	CCA	11,015.38
SCE	CPASC	Clean Power Alliance	2025	CCA	11,087.48
	CPASC	Clean Power Alliance	2026	CCA	11,154.57
SCE					
SCE SCE	CPASC	Clean Power Alliance	2027	CCA	11,248.74
	CPASC CPASC	Clean Power Alliance Clean Power Alliance	2027 2028		•
SCE				CCA	11,248.74 11,321.00 11,397.82

CCE	CDACC	Class Barrer Alliana	2021	664	14.542.04
SCE	CPASC	Clean Power Alliance	2031		11,543.04
SCE	CPASC	Clean Power Alliance	2032		11,589.56
SCE	CPASC	Clean Power Alliance	2033		11,643.36
SCE	CPASC	Clean Power Alliance	2034		11,692.24
SCE	CPASC	Clean Power Alliance	2035		11,744.26
SCE	DCE	Desert Community Energy	2023		444.00
SCE	DCE	Desert Community Energy	2024		456.45
SCE	DCE	Desert Community Energy	2025		459.91
SCE	DCE	Desert Community Energy	2026		461.33
SCE	DCE	Desert Community Energy	2027	CCA	462.99
SCE	DCE	Desert Community Energy	2028	CCA	464.89
SCE	DCE	Desert Community Energy	2029	CCA	467.04
SCE	DCE	Desert Community Energy	2030	CCA	469.42
SCE	DCE	Desert Community Energy	2031	CCA	472.05
SCE	DCE	Desert Community Energy	2032	CCA	474.93
SCE	DCE	Desert Community Energy	2033	CCA	478.04
SCE	DCE	Desert Community Energy	2034		481.40
SCE	DCE	Desert Community Energy	2035		485.00
SCE	PALMDALE	Energy for Palmdale's Independent Choice	2023		552.80
SCE	PALMDALE	Energy for Palmdale's Independent Choice	2024		610.35
SCE	PALMDALE	Energy for Palmdale's Independent Choice	2025		
SCE		- '	2025		615.01
	PALMDALE	Energy for Palmdale's Independent Choice			619.34
SCE	PALMDALE	Energy for Palmdale's Independent Choice	2027		625.16
SCE	PALMDALE	Energy for Palmdale's Independent Choice	2028		630.11
SCE	PALMDALE	Energy for Palmdale's Independent Choice	2029		635.50
SCE	PALMDALE	Energy for Palmdale's Independent Choice	2030		640.32
SCE	PALMDALE	Energy for Palmdale's Independent Choice	2031		645.45
SCE	PALMDALE	Energy for Palmdale's Independent Choice	2032	CCA	648.93
SCE	PALMDALE	Energy for Palmdale's Independent Choice	2033	CCA	652.90
SCE	PALMDALE	Energy for Palmdale's Independent Choice	2034	CCA	656.53
SCE	PALMDALE	Energy for Palmdale's Independent Choice	2035	CCA	660.25
SCE	LCE	Lancaster Choice Energy	2023	CCA	589.26
SCE	LCE	Lancaster Choice Energy	2024	CCA	595.74
SCE	LCE	Lancaster Choice Energy	2025	CCA	599.86
SCE	LCE	Lancaster Choice Energy	2026	CCA	603.66
SCE	LCE	Lancaster Choice Energy	2027	CCA	608.98
SCE	LCE	Lancaster Choice Energy	2028		613.16
SCE	LCE	Lancaster Choice Energy	2029		617.43
SCE	LCE	Lancaster Choice Energy	2030		621.33
SCE	LCE	Lancaster Choice Energy	2031		625.23
SCE	LCE	Lancaster Choice Energy	2032		627.58
SCE	LCE	Lancaster Choice Energy	2032		630.28
SCE	LCE	Lancaster Choice Energy	2033		<u> </u>
		•,			632.71
SCE	LCE	Lancaster Choice Energy	2035		635.45
SCE	OCPA	Orange County Power Authority	2023		3,581.79
SCE	OCPA	Orange County Power Authority	2024		3,942.95
SCE	OCPA	Orange County Power Authority	2025		3,973.07
SCE	OCPA	Orange County Power Authority	2026		4,001.06
SCE	OCPA	Orange County Power Authority	2027		4,038.60
SCE	OCPA	Orange County Power Authority	2028		4,070.64
SCE	OCPA	Orange County Power Authority	2029	CCA	4,105.44
SCE	OCPA	Orange County Power Authority	2030	CCA	4,136.55
SCE	OCPA	Orange County Power Authority	2031	CCA	4,169.66
SCE	ОСРА	Orange County Power Authority	2032	CCA	4,192.14
SCE	ОСРА	Orange County Power Authority	2033	CCA	4,217.79
SCE	OCPA	Orange County Power Authority	2034		4,241.19
SCE	OCPA	Orange County Power Authority	2035		4,265.26
SCE	PRIME	Pico Rivera Innovative Municipal Energy	2023		225.46
SCE	PRIME	Pico Rivera Innovative Municipal Energy	2023		227.74
SCE	PRIME	Pico Rivera Innovative Municipal Energy	2024		
					229.23
SCE	PRIME	Pico Rivera Innovative Municipal Energy	2026		230.63
SCE	PRIME	Pico Rivera Innovative Municipal Energy	2027		232.58
SCE	PRIME	Pico Rivera Innovative Municipal Energy	2028		234.09
SCE	PRIME	Pico Rivera Innovative Municipal Energy	2029		235.74
SCE	PRIME	Pico Rivera Innovative Municipal Energy	2030		237.21
SCE	PRIME	Pico Rivera Innovative Municipal Energy	2031		238.91
I	001445	Dies Divers In a systima Marsinia I France.	2032	CCA	220.00
SCE	PRIME	Pico Rivera Innovative Municipal Energy	2032	CCA	239.98

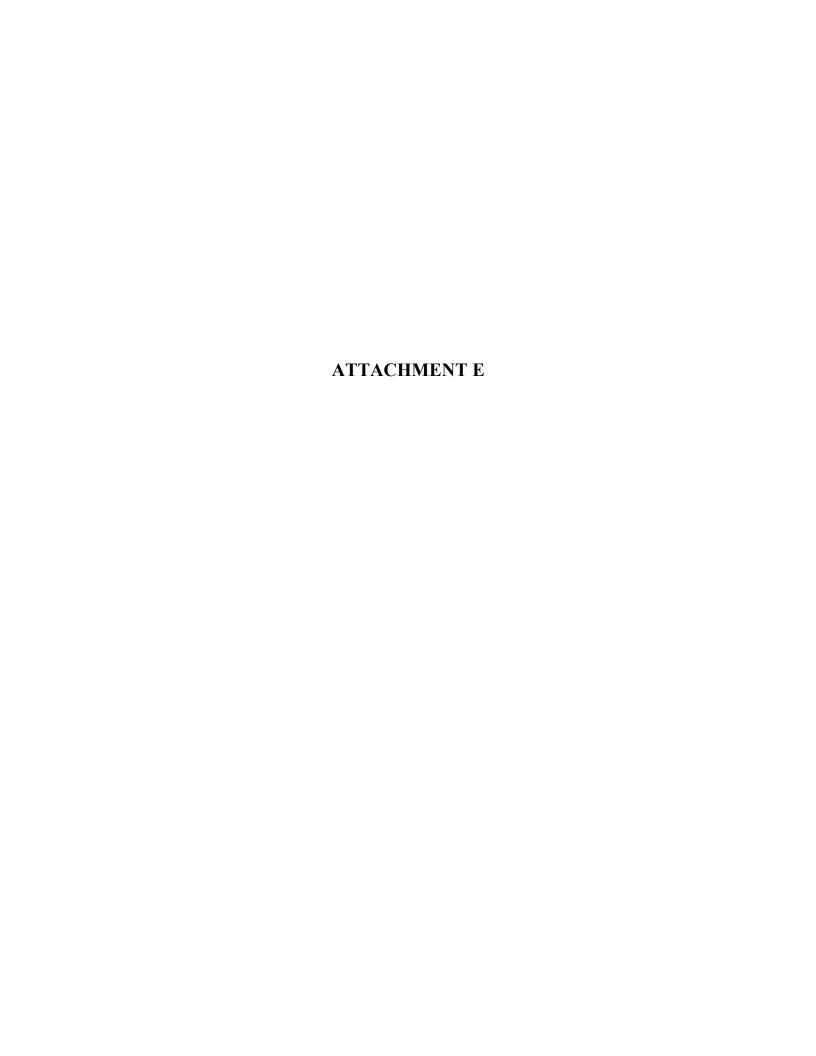
	1	Ta. a			
SCE	PRIME	Pico Rivera Innovative Municipal Energy	2034		242.35
SCE	PRIME	Pico Rivera Innovative Municipal Energy	2035		243.51
SCE	POMONA	Pomona Choice Energy	2023		386.84
SCE	POMONA	Pomona Choice Energy	2024	CCA	390.80
SCE	POMONA	Pomona Choice Energy	2025	CCA	393.61
SCE	POMONA	Pomona Choice Energy	2026	CCA	396.20
SCE	POMONA	Pomona Choice Energy	2027	CCA	399.73
SCE	POMONA	Pomona Choice Energy	2028	CCA	402.69
SCE	POMONA	Pomona Choice Energy	2029	CCA	405.84
SCE	POMONA	Pomona Choice Energy	2030		408.68
SCE	POMONA	Pomona Choice Energy	2031		411.58
SCE	POMONA	Pomona Choice Energy	2032		413.48
SCE	POMONA	Pomona Choice Energy	2032		
					415.67
SCE	POMONA	Pomona Choice Energy	2034		417.66
SCE	POMONA	Pomona Choice Energy	2035		419.77
SCE	RMEA	Rancho Mirage Energy Authority	2023		280.26
SCE	RMEA	Rancho Mirage Energy Authority	2024	CCA	283.27
SCE	RMEA	Rancho Mirage Energy Authority	2025	CCA	284.97
SCE	RMEA	Rancho Mirage Energy Authority	2026	CCA	286.55
SCE	RMEA	Rancho Mirage Energy Authority	2027	CCA	288.84
SCE	RMEA	Rancho Mirage Energy Authority	2028	CCA	290.47
SCE	RMEA	Rancho Mirage Energy Authority	2029		292.09
SCE	RMEA	Rancho Mirage Energy Authority	2030		293.58
SCE	RMEA	Rancho Mirage Energy Authority	2030		
					295.16
SCE	RMEA	Rancho Mirage Energy Authority	2032		295.99
SCE	RMEA	Rancho Mirage Energy Authority	2033		296.96
SCE	RMEA	Rancho Mirage Energy Authority	2034		297.83
SCE	RMEA	Rancho Mirage Energy Authority	2035		298.85
SCE	SJP	San Jacinto Power	2023	CCA	167.99
SCE	SJP	San Jacinto Power	2024	CCA	169.89
SCE	SJP	San Jacinto Power	2025	CCA	171.04
SCE	SJP	San Jacinto Power	2026	CCA	172.08
SCE	SJP	San Jacinto Power	2027	CCA	173.57
SCE	SJP	San Jacinto Power	2028		174.71
SCE	SJP	San Jacinto Power	2029		175.82
SCE	SJP		2023		
		San Jacinto Power			176.85
SCE	SJP	San Jacinto Power	2031		177.82
SCE	SJP	San Jacinto Power	2032		178.35
SCE	SJP	San Jacinto Power	2033		178.97
SCE	SJP	San Jacinto Power	2034	CCA	179.52
SCE	SJP	San Jacinto Power	2035	CCA	180.19
SCE	SBCE	Santa Barbara Clean Energy	2023	CCA	340.61
SCE	SBCE	Santa Barbara Clean Energy	2024	CCA	344.03
SCE	SBCE	Santa Barbara Clean Energy	2025	CCA	346.43
SCE	SBCE	Santa Barbara Clean Energy	2026	CCA	348.65
SCE	SBCE	Santa Barbara Clean Energy	2027		351.69
SCE	SBCE	Santa Barbara Clean Energy	2028		354.17
SCE	SBCE	Santa Barbara Clean Energy	2029		356.88
SCE	SBCE		2023		
		Santa Barbara Clean Energy			359.30
SCE	SBCE	Santa Barbara Clean Energy	2031		361.93
SCE	SBCE	Santa Barbara Clean Energy	2032		363.67
SCE	SBCE	Santa Barbara Clean Energy	2033		365.65
SCE	SBCE	Santa Barbara Clean Energy	2034		367.47
SCE	SBCE	Santa Barbara Clean Energy	2035	CCA	369.34
SDGE	CEA	Clean Energy Alliance	2023	CCA	1,266.71
SDGE	CEA	Clean Energy Alliance	2024	CCA	1,487.19
SDGE	CEA	Clean Energy Alliance	2025		1,496.06
SDGE	CEA	Clean Energy Alliance	2026		1,504.22
SDGE	CEA	Clean Energy Alliance	2027		1,512.16
SDGE	CEA	Clean Energy Alliance	2028		1,520.15
SDGE	CEA	Clean Energy Alliance	2028		
					1,528.80
SDGE	CEA	Clean Energy Alliance	2030		1,538.83
SDGE	CEA	Clean Energy Alliance	2031		1,551.38
	CEA	Clean Energy Alliance	2032	CCA	1,560.79
SDGE					
SDGE SDGE	CEA	Clean Energy Alliance	2033	CCA	1,571.53
			2034	CCA	1,571.53 1,580.06
SDGE	CEA	Clean Energy Alliance		CCA	

	OCPA	Orange County Power Authority	2024		169.46
	OCPA	Orange County Power Authority	2025		170.47
SDGE	OCPA	Orange County Power Authority	2026	CCA	171.40
SDGE	OCPA	Orange County Power Authority	2027	CCA	172.31
SDGE C	OCPA	Orange County Power Authority	2028	CCA	173.22
SDGE C	OCPA	Orange County Power Authority	2029	CCA	174.20
	OCPA	Orange County Power Authority	2030	CCA	175.35
	OCPA	Orange County Power Authority	2031		
					176.78
	OCPA	Orange County Power Authority	2032		177.85
	OCPA	Orange County Power Authority	2033		179.07
	OCPA	Orange County Power Authority	2034		180.04
SDGE	OCPA	Orange County Power Authority	2035	CCA	181.10
SDGE S	SDCP	San Diego Community Power	2023	CCA	7,422.00
SDGE S	SDCP	San Diego Community Power	2024	CCA	7,932.00
SDGE S	SDCP	San Diego Community Power	2025	CCA	7,979.31
	SDCP	San Diego Community Power	2026		8,022.80
	DCP	San Diego Community Power	2027		
					8,065.19
	DCP	San Diego Community Power	2028		8,107.78
	SDCP	San Diego Community Power	2029		8,153.91
SDGE S	SDCP	San Diego Community Power	2030	CCA	8,207.38
SDGE S	SDCP	San Diego Community Power	2031	CCA	8,274.38
SDGE S	SDCP	San Diego Community Power	2032	CCA	8,324.52
SDGE S	SDCP	San Diego Community Power	2033	CCA	8,381.84
	SDCP	San Diego Community Power	2034		8,427.34
	DCP	San Diego Community Power	2035		8,476.83
					,
	BEAR	Bear Valley Electric Service	2023		132.48
	BEAR	Bear Valley Electric Service	2024		132.48
	BEAR	Bear Valley Electric Service	2025		133.49
Bear Valley Electric Service B	BEAR	Bear Valley Electric Service	2026	SMJ	134.42
Bear Valley Electric Service B	BEAR	Bear Valley Electric Service	2027	SMJ	135.68
Bear Valley Electric Service B	BEAR	Bear Valley Electric Service	2028	SMJ	136.74
Bear Valley Electric Service B	BEAR	Bear Valley Electric Service	2029	SMJ	137.83
	BEAR	Bear Valley Electric Service	2030		138.82
	BEAR	Bear Valley Electric Service	2031		
		•			139.78
	BEAR	Bear Valley Electric Service	2032		140.39
	BEAR	Bear Valley Electric Service	2033		141.09
	BEAR	Bear Valley Electric Service	2034		141.72
Bear Valley Electric Service B	BEAR	Bear Valley Electric Service	2035	SMJ	142.42
Liberty Utilities L	.IB	Liberty Utilities	2023	SMJ	557.67
Liberty Utilities L	.IB	Liberty Utilities	2024	SMJ	557.67
Liberty Utilities L	.IB	Liberty Utilities	2025	SMJ	561.20
Liberty Utilities L	.IB	Liberty Utilities	2026		564.80
	.IB	Liberty Utilities	2027	SMJ	568.80
		,			
· · · ·	.IB	Liberty Utilities	2028		571.91
		Liberty Utilities	2029		575.63
	.IB	Liberty Utilities	2030		579.47
Liberty Utilities L	.IB	Liberty Utilities	2031	SMJ	583.93
Liberty Utilities L	.IB	Liberty Utilities	2032	SMJ	587.55
Liberty Utilities L	.IB	Liberty Utilities	2033	SMJ	591.50
Liberty Utilities L	.IB	Liberty Utilities	2034	SMJ	595.24
	.IB	Liberty Utilities	2035		599.16
	PCORP	PacifiCorp	2023		
		·			871.48
	PCORP	PacifiCorp	2024		874.56
PacifiCorp P		Docitif orn	2025	ICIAL	
	PCORP	PacifiCorp	2025		873.57
PacifiCorp P	PCORP	PacifiCorp	2026	SMJ	873.57 876.03
PacifiCorp P		·	2026 2027	SMJ SMJ	
PacifiCorp P PacifiCorp P	PCORP	PacifiCorp	2026	SMJ SMJ	876.03
PacifiCorp P PacifiCorp P PacifiCorp P	PCORP	PacifiCorp PacifiCorp	2026 2027	SMJ SMJ	876.03 879.11 884.04
PacifiCorp P PacifiCorp P PacifiCorp P PacifiCorp P PacifiCorp P	PCORP PCORP PCORP	PacifiCorp PacifiCorp PacifiCorp PacifiCorp PacifiCorp	2026 2027 2028 2029	SMJ SMJ SMJ	876.03 879.11 884.04 884.19
PacifiCorp P PacifiCorp P PacifiCorp P PacifiCorp P PacifiCorp P PacifiCorp P	PCORP PCORP PCORP PCORP	PacifiCorp PacifiCorp PacifiCorp PacifiCorp PacifiCorp PacifiCorp	2026 2027 2028 2029 2030	SWI SWI SWI SWI	876.03 879.11 884.04 884.19 886.08
PacifiCorp P	PCORP PCORP PCORP PCORP PCORP	PacifiCorp PacifiCorp PacifiCorp PacifiCorp PacifiCorp PacifiCorp PacifiCorp PacifiCorp	2026 2027 2028 2029 2030 2031	SWI SWI SWI SWI SWI	876.03 879.11 884.04 884.19 886.08 887.88
PacifiCorp P	PCORP PCORP PCORP PCORP PCORP PCORP PCORP	PacifiCorp PacifiCorp PacifiCorp PacifiCorp PacifiCorp PacifiCorp PacifiCorp PacifiCorp PacifiCorp	2026 2027 2028 2029 2030 2031 2032	SMJ SMJ SMJ SMJ SMJ SMJ SMJ	876.03 879.11 884.04 884.19 886.08 887.88 892.46
PacifiCorp P	PCORP PCORP PCORP PCORP PCORP PCORP PCORP PCORP	PacifiCorp	2026 2027 2028 2029 2030 2031 2032 2033	SMJ SMJ SMJ SMJ SMJ SMJ SMJ SMJ	876.03 879.11 884.04 884.19 886.08 887.88 892.46
PacifiCorp P PacifiCorp P	PCORP PCORP PCORP PCORP PCORP PCORP PCORP	PacifiCorp PacifiCorp PacifiCorp PacifiCorp PacifiCorp PacifiCorp PacifiCorp PacifiCorp PacifiCorp	2026 2027 2028 2029 2030 2031 2032	SMJ SMJ SMJ SMJ SMJ SMJ SMJ SMJ SMJ	876.03 879.11 884.04 884.19 886.08 887.88 892.46

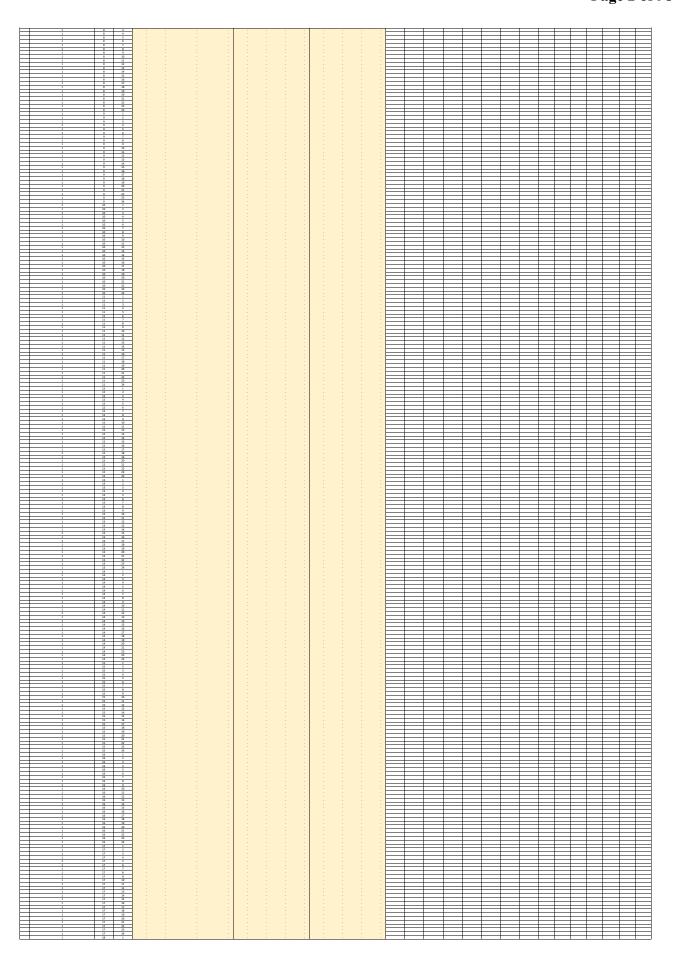
Individual LSE Behind-the-Meter Photovoltaic (BTM PV) Assigned per June 15, 2022 ALJ Ruling - https://docs.cpuc.ca.gov. Generation (GWh) (measured at customer, not grossed up for Service A_I Type **LSE CPUC LSE Name** 2023 2024 2025 2026 2027 4,240 PGE IOU **PGE** Pacific Gas 3,907 4,552 4,867 5.198 PGE 1,655 1,783 1,903 2,024 2,149 **ESP** Pacific Gas **PGE** 771 3CE 719 824 881 **CCA** Central Coas 662 428 465 500 **536** 573 **PGE** CCA **CPSF** CleanPowers **PGE** CCA **EBCE** East Bay Co 966 1,055 1,138 1,223 1,312 5 5 6 7 **PGE** CCA **KCCP** 6 King City Co 1,023 1,088 **PGE** CCA MCE Marin Clean 832 901 961 **PGE** CCA **PCEA** Peninsula C 497 541 578 621 671 274 298 320 342 366 PGE CCA **PIONEER** Pioneer Con 98 106 113 121 129 **PGE** CCA **RCEA** Redwood Co 550 598 642 687 735 PGE CCA SJCE San José Cl **PGE** CCA **SVCEA** 531 **576** 618 661 706 Silicon Valle 348 428 PGE 321 374 401 CCA **SOMA** Sonoma Cle 142 106 112 122 132 **PGE CCA VCEA** Valley Clean SCE IOU SCE Southern Ca 4,975 5,374 5,783 6,212 6,661 424 457 489 **522** 555 SCE **ESP** Southern Ca **AVCE** SCE CCA Apple Valley 49 53 57 61 66 SCE COBP CCA Baldwin Parl -----68 SCE CCA 3CE Central Coas 53 **57** 61 65 795 SCE **CPASC** Clean Power 731 856 919 986 **CCA** 64 71 SCE CCA DCE **76** 82 87 Desert Com SCE PALMDALE Energy for F 53 63 68 **73** 79 CCA 119 130 150 161 SCE CCA LCE Lancaster C 140 345 409 440 473 508 SCE CCA **OCPA** Orange Cou 14 16 **17** 18 19 SCE CCA **PRIME** Pico Rivera 12 13 15 16 SCE CCA **POMONA** Pomona Cho 14 72 78 84 90 97 SCE CCA **RMEA** Rancho Mira 38 41 48 51 SCE CCA SJP San Jacinto 44 33 44 36 38 41 SCE **CCA SBCE** Santa Barba SCE CCA **WCE** Western Cor 772 **SDGE** IOU **SDGE** San Diego G 875 823 877 934 779 836 SDGE **ESP** San Diego G 891 948 1,006 Clean Energ 316 338 362 386 **SDGE** CCA CEA 251 44 SDGE 4 36 39 41 CCA **OCPA** Orange Cou 1,468 1,684 1,805 1,931 2,060 **SDGE** CCA **SDCP** San Diego C

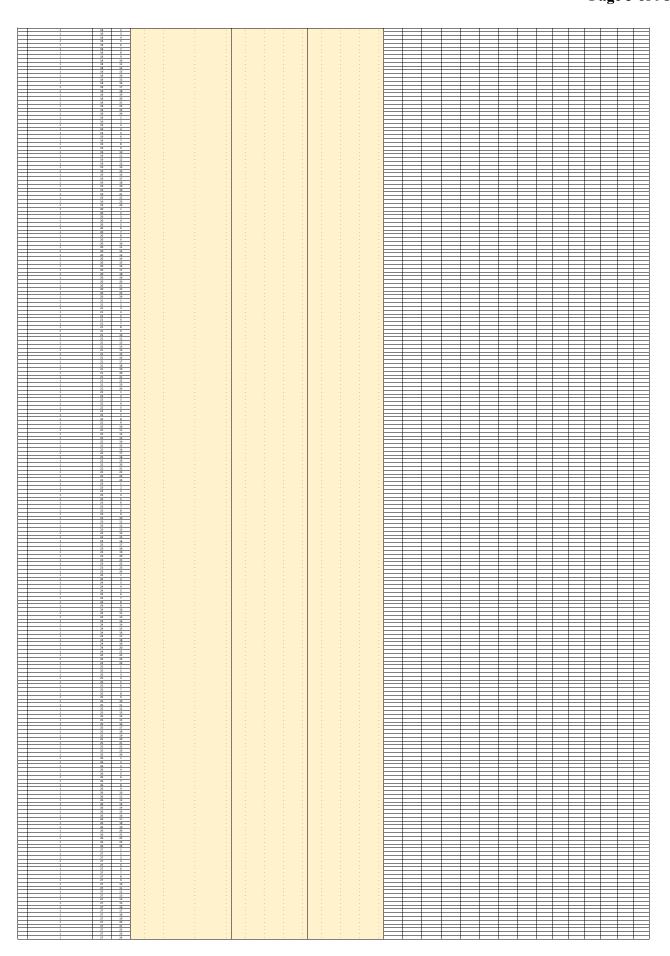
Forecast	Forecast Assignments for Use in 2022 LSE IRPs											
/SearchRes.a	spx?docfor	mat=ALL&c	locid=4856.	25915								
T&D losses)												
2028	2029	2030	2031	2032	2033	2034	2035					
5,536	5,893	6,226	6,588	6,935	7,309	7,663	8,006					
2,281	2,408	2,531	2,647	2,761	2,867	2,966	3,055					
941	1,000	1,058	1,115	1,170	1,224	1,275	1,324					
613	653	693	733	771	809	845	883					
1,407	1,501	1,595	1,687	1,776	1,861	1,942	2,022					
7	7	8	8	9	9	10	10					
1,160	1,232	1,323	1,390	1,464	1,520	1,579	1,636					
725	775	827	878	933	981	1,031	1,081					
391	416	441	466	490	514	538	560					
137	145	152	159	166	173	179	185					
785	837	888	939	989	1,039	1,087	1,134					
754	803	852	900	948	995	1,040	1,084					
458	487	517	547	576	604	632	659					
153	164	175	186	197	207	217	227					
7,123	7,603	8,099	8,615	9,142	9,679	10,225	10,774					
590	625	663	700	739	779	819	860					
71	75	80	85	90	96	101	106					
-	-	-	-	-	-	-	-					
72	76	80	84	89	94	100	105					
1,055	1,126	1,200	1,276	1,354	1,433	1,513	1,595					
93	99	106	112	119	127	134	142					
84	90	96	102	109	115	122	129					
172	184	196	208	221	234	247	260					
544	582	621	662	703	745	788	831					
21	22	24	25	27	28	30	32					
17	18	19	21	22	23	25	26					
103	110	117	125	132	140	147	155					
55	58	62	66	70	74	78	82					
47	51	54	57	61	65	68	72					
-	-	-	-	-	-	-	-					
990	1,048	1,106	1,165	1,223	1,281	1,338	1,393					
1,065	1,123	1,180	1,235	1,290	1,344	1,397	1,449					
411	436	461	486	511	536	560	585					
47	50	53	55	58	61	64	67					
2,192	2,324	2,458	2,593	2,726	2,859	2,989	3,118					

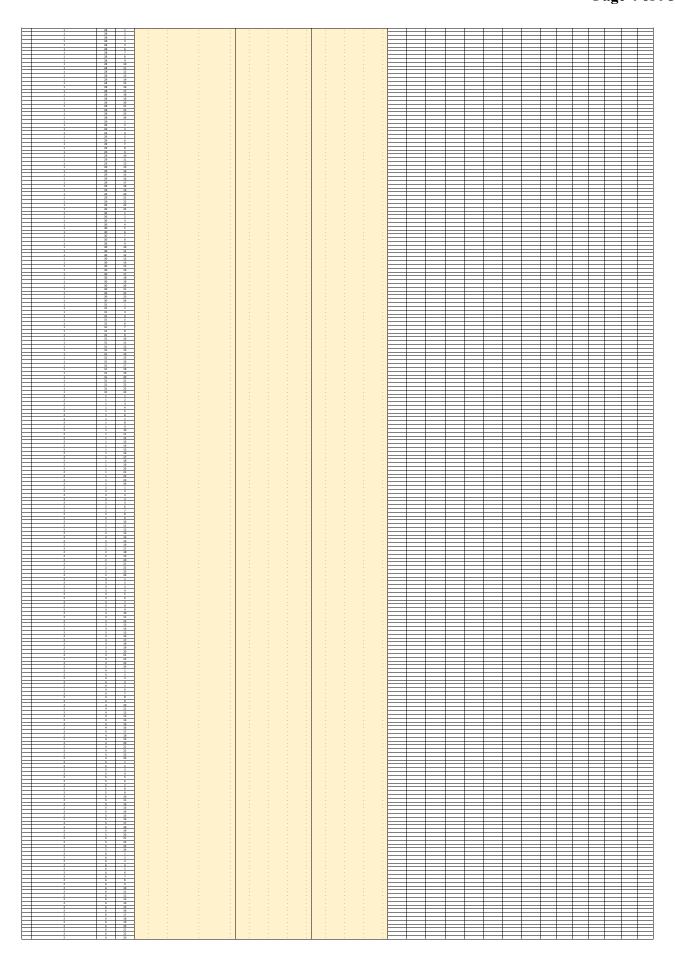
25 MMT in 2035			I			l		
	l ng - https://docs.cpuc.ca.gov/SearchRes.aspx?docformat=ALL&docid=4856259	915						
one senaminants assigned personne 19, 2022 NB nam	ing incestigation gov, search incisiaspin additional incisases	-13						
							2020 0110 5	2025 6116 5
HATE.	LSEs within Host Utility Territory	Proportion of Total	2030 Load (GWh)	2035 Load (GWh)	within EDU	Proportion of 2035 Load within EDU	2030 GHG Emissions Benchmark (MMT)	2035 GHG Emissions
Utility	ESES WIGHT HOSE OWNLY TETTION Y	Emissions	2030 Load (GWN)	2035 Load (GWN)	WITHIN EDU	WITHIN EDU	Benchmark (WIWII)	Benchmark (MMT)
Bear Valley Electric Service	N/A	0.000587773	138.8195	142.4237	N/A	N/A	0.014	0.012
Liberty Utilities	N/A	0.002547815	579.4708	599.1643	N/A	N/A	0.063	0.051
	Pacific Gas and Electric (Bundled)		28,019.5589	29,851.6421	0.360148471	0.366114920	3.013	2.466
	Pacific Gas and Electric (Direct Access)		11,393.0000	11,393.0000	0.146439548	0.139729241	1.225	0.941
Pacific Gas and Electric Company	Central Coast Community Energy		4,760.5600	4,935.5300	0.061189700	0.060531718	0.512	0.408
	CleanPowerSF		3,119.1600	3,292.8900	0.040092020	0.040385589	0.335	0.272
	East Bay Community Energy		7,179.7353	7,539.9690	0.092284489	0.092473813	0.772	0.623
	King City Community Power		35.7300	37.9500	0.000459254	0.000465437	0.004	0.003
	Marin Clean Energy	0.220267402	5,955.3400	6,098.5800	0.076546765	0.074795923	0.640	0.504
	Peninsula Clean Energy Authority	0.338367402	3,721.4857	4,032.7067	0.047833993	0.049459058	0.400	0.333
	Pioneer Community Energy		1,986.4700	2,089.9200	0.025533026	0.025631786	0.214	0.173
	Redwood Coast Energy Authority		685.2700	688.5000	0.008808095	0.008444096	0.074	0.057
	San José Clean Energy		3,995.7100	4,227.4000	0.051358726	0.051846870	0.430	0.349
	Silicon Valley Clean Energy Authority		3,833.4300	4,043.6400	0.049272865	0.049593149	0.412	0.334
	Sonoma Clean Power		2,328.2000	2,457.9200	0.029925442	0.030145115	0.250	0.203
	Valley Clean Energy Alliance		786.3719	846.6143	0.010107605	0.010383286	0.085	0.070
PacifiCorp	N/A	0.007461402	886.0800	896.6300	N/A	N/A	0.204	0.168
	Southern California Edison (Bundled)		53,909.2120	55,275.8803	0.620027603	0.622365246	4.933	3.993
	Southern California Edison (Direct Access)		13,420.8510	13,420.8510	0.154357628	0.151108788	1.228	0.969
	Apple Valley Choice Energy		271.6200	276.9600	0.003123991	0.003118363	0.025	0.020
	Baldwin Park, City of		0.0000	0.0000	0.000000000	0.000000000	0.000	0.000
	Central Coast Community Energy		534.7200	540.2500	0.006149991	0.006082813	0.049	0.039
	Clean Power Alliance		11,466.8300	11,744.2600	0.131883789	0.132231621	1.049	0.848
	Desert Community Energy		469.4200	485.0000	0.005398954	0.005460739	0.043	0.035
Bear Valley Electric Service N/A iberty Utilities Pacific Gas and Electric (B Pacific Gas and Electric (C Central Coast Community CleanPowerSF East Bay Community Ener East Bay Community Ener Redig City Community Pow Marin Clean Energy Peninsula Clean Energy Peninsula Clean Energy San José Clean Energy Sillicon Valley Clean Energy Sillicon Valley Clean Energy Alia N/A Southern California Ediso Southern	Energy for Palmdale's Independent Choice		640.3184	660.2467	0.007364513	0.007433886	0.059	0.048
		0.331706007	621.3300	635.4500	0.007146121	0.007154694	0.057	0.046
	Orange County Power Authority		4,136.5522	4,265.2616	0.047575850	0.048023669	0.378	0.308
	Pico Rivera Innovative Municipal Energy		237.2100	243.5100	0.002728230	0.002741741	0.022	0.018
			408.6800	419.7700	0.004700363	0.004726298	0.037	0.030
	Rancho Mirage Energy Authority		293.5800	298.8500	0.003376560	0.003364828	0.027	0.022
			176.8500	180.1900	0.002034010	0.002028805	0.016	0.013
	Santa Barbara Clean Energy		359.2973	369.3414	0.004132397	0.004158510	0.033	0.027
	Western Community Energy		0.0000	0.0000	0.000000000	0.000000000	0.000	0.000
	San Diego Gas and Electric (Bundled)		3.694.0194	3,787.4129	0.210418652	0.210708105	0.473	0.386
	San Diego Gas and Electric (Direct Access)		3,940.0000	3,940.0000	0.224430195	0.219197104	0.505	0.401
Car Diago Car & Flattin Carran		0.000435000	1,538.8253	1,589.3452	0.087654532	0.088421283	0.197	0.162
San Diego Gas & Electric Company	Orange County Power Authority	0.088426808	175.3453	181.1020	0.009988018	0.010075388	0.022	0.018
			0.0000	0.0000	0.000000000	0.000000000	0.000	0.000
	San Diego Community Power		8,207.3800	8,476.8300	0.467508603	0.471598119	1.052	0.863
TOTAL		0.7690972	183,906.4331758	189,964.9911526			18.852	15.213

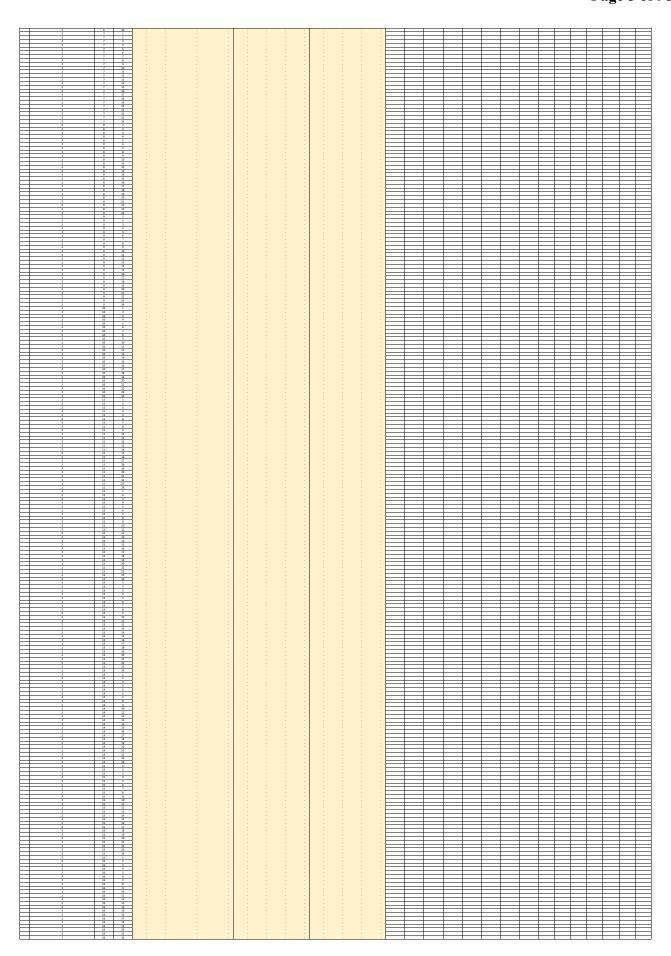


30.MMT in 2025 Supply Inputs: Values should be pasted directly from the Resource Da Resource 2024	a Template using Excel's "Paste Vi 2024 2030 2035 525 525 525 766 60 120	alues" option 5 Units RPS or GNG-Free GWb GNG-Free		INFORMATION ONLY - Calcular Calculated Capacity (MW) 2024 2026 229 142 297 198	ed capacity, energy, and capacity. 2030 2035 142 142 142 18 31	Calculated C Calculated C 2020 841	sergy Production Potes 2026 525 766	ntial (GWh, pre-curtailment) 2020 2025 525 525 69 220	Capacity Factors (%)	2026 2030	2025 1000	Co Not Edit Hours per year GW -> MrW		
Nurses		GWh GHG-Free		1 1					Capacity Factors (%) 2024 42% 44% 44% 56% 66% 66% 52% 34%	2026 2020 42% 42% 44% 44% 44% 44% 50% 50% 50% 50% 50% 50% 50% 50% 50% 50	2005 0000 00	Cutalinant throubolt Auset Controlling Sup Hosper (Fed Toport E	[MW] Ser Emissions Factor (C autor) Factor (CO2/M	CD2/MWH3
Biogas B0	80 80 30 38 4 16 454 1,753 1,785 306 37 60	GWh RPS GWh RPS GWh RPS GWh RPS		14 14 11 6 41 57 58 26	12 23	86 63 332 292	106	80 30 4 16 1,753 1,785 37 69	69% 69% 92% 34%		60% 64% 82% 34%	Fraction of Asset Con	Supplier Imports	ts court as GHS-free
Wind Passyrres	783 438 461 290 290 290 363 263 263			226 291 135 125 - 96				438 461 290 290 263 263						
Wind Pacific Northwest Wind Wyoming Wind New Mexico		OWN 995 OWN 895 OWN 895			 		:	250 250 - 400		21N 21N 25N 25N 25N 21N 21N 24N 24N 51N 51N 51N 47N 47N 46N 46N 55N 55N	23% 22% 23% 24% 53% 47% 46%			
Wind Offshore Mome Buy Wind Offshore Humboldt Solar Resources		GWh RPS		685 622	- 98 	2,621	1,649							#
Solar New PGEE Solar New SCE SDGBEE Solar Distributed 22	32 32 31	OWh RPS OWh RPS OWh RPS OWh RPS		18 18	28 28			32 31	30% 22% 34% 20%	30% 30% 32% 32% 34% 34% 20% 20%	20% 22% 24% 20%			
Storage & DR Shed DR 15	15 15 ·	GWh RPS MW GHG-Free		114 217 15 15	212 206 15 -	221	635 0	634 S96 0 -		22% 22% 04% 0.02%	23%			#
Pumped Storage Sattary Storage User-Specified Profiles Storage Buseums Custom Smiles	857 2,057 2,117	MW n/a MWh Energy Capacity n/a MWW n/a		162 214	514 529	- cal	- (48)	. (121) (122)	-7% -2%	-7% -7% -2% -2%	-2% -2%			#
Storage Resource Custom Profile - PS Resource Custom Profile - CAS-Free non-RPS Resource Custom Profile - Cast - C	1 1 1	OWh 955 OWh GHS-Free		9/0 9/0 9/0 9/0	n/a n/a n/a n/a				n/o n/o	n/o n/o n/o n/o	n/a n/a			
Coal Calculated Share of IFM CHP- do not edit IFM CHP 222	215 212 182	OWS n/s		64 65	65 39	22.	215	312 182	25% 56%	SON SSN	55%			
Checks 2024 No negative supply inputs TRUE TRUE Storage Resource Custom Profile does not produce TRUE TRUE TRUE	2024 2030 2035 E TRUE TRUE E TRUE TRUE													#
power on a not basis Storage Percurse Custom Profile has values between - Land 1 Sum of hourly RPS Resource Custom Profile equals passal loss annual loss an	TRUE TRUE													#
annual hout Sum of houty GHS-free non-RPS Resource Custom Profile equals annual input TRUE TRUE														#
	Users wi Power production or storage di	rishing to add multiple custom resources of the same by ispatch entered in this section is incremental to any of the	Custom Hourly Profile e should add together the hourly e standard resource types enters counting.	production values outside of this d in the resource table above - e	tool and input the final 8760 sha stering the same resources in bot	e below. sections would result in double								
	Stora	age Resource Custom Profile to MW of nameplate storage capacity in the "Storage vabove. Values should range between -1 (charging at x) to 1 (discharging at max).	RPS Resource Profile should be in units of The sum of power production annual value in the "User"	Custom Profile	GNS-free non-RPS & Profile should be in units of The sum of power production annual value in the "User	source Custom Profile								
	Total	a) to 1 (discharging at mas).	annual value in the "User	Specified Profiles" section.	annual value in the "User	Specified Profiles" section.							+	=
Month Day Hour 1 1 1 2	Min 2024 2026	2000 2001	2024 2026	2030 2035	2024 2026	2030 2035						H		#
1 1 2 2 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1														
1 1 7 7 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1														\equiv
1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1														
1 2 3 31 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1													H	#
1 1 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2														#
1 1 2 1 2 1 1 2 1 1 2 1 1 2 1 1 2 1 1 2 1 1 2 1 1 2 1 1 2 1 1 2 1 1 1 2 1 1 1 2 1			1 1		1 1									
1 2 2 1 2 3 1 2 4 1 2 5														
1 2 0 1 2 7 1 2 8 1 2 9														
1 2 31 1 2 211 1 2 211 1 2 11														
1 2 34 1 2 31 1 2 2 11 1 2 2 11														#
1 2 1 1 2 2 1 2 2 1 2 21														
1 2 22 1 2 23 1 2 2 31 1 3 1														
1 3 2 1 2 3 1 3 4														
1 3 6 1 3 7 1 3 8														
1 2 3 11 1 2 1 1 1 1 1 1 1 1 1 1 1 1 1 1			1 1		1 1									
1 3 3 1 1 1 2 1 1 1 1 1 1 1 1 1 1 1 1 1														
1 3 1 1 3 21 1 3 21														
1 3 2 2 1 1 3 2 2 1 1 3 2 2 1 1 3 2 3 2														
1 4 2 1 4 3			1 1		1 1									
1 4 5 1 4 6 1 4 7 1 4 8														
1 4 9 1 4 21 1 4 21 1 4 21														
1 4 11 1 4 12 1 4 21 1 4 21														#
1 4 11 1 4 11 1 4 11 1 4 21														#
1 4 22 1 4 22 1 4 22 1 4 23														#
1 5 1 1 5 2 1 5 3 1 5 4														#
1 5 5 1 1 5 4 1 1 1 5 1 1 1 1 1 1 1 1 1														#
1 5 9 1 5 31 1 5 11 1 5 11												Ħ	Ħ	
1 5 21 1 5 30 1 5 31 1 5 31														
1 5 1: 1 5 1: 1 5 1: 1 5 2: 1 5 2:												Ħ	Ħ	Ħ
1 5 22 1 5 2 1 5 2 1 5 22														\equiv
1 6 1 1 6 2 1 6 4 1 6 4												LΤ		
1 6 5 1 1 6 6 6 1 1 1 6 6 7 1 1 6 8 8														\equiv
1 6 9 1 1 6 11 1 6 11 1 1 6 11 1 1 6 11 1 1 6 11 1 1 6 11 1 1 6 11 1 1 6 11 1 1 1 6 11 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1														
1 5 11 1 6 14 14 1 1 1 1 1 1 1 1 1 1 1 1 1														#
1 6 11 1 6 11 1 6 11 1 6 11														#
1 6 22 1 6 22 1 6 22 1 6 22														#
1 6 2 1 7 1 1 7 2 1 7 3												H		#
1 7 4 1 7 5 1 7 6 1 7 7 7														#
1 7 8 1 7 9 1 7 2 1 7 21 1 7 11														#
1 7 22 1 7 21 1 7 21 1 7 24 1 7 34							E			H	I	E	Ħ	Ħ
							\vdash		·		-	+	$+$ \mp	一巨
1 7 31 1 7 12 1 7 12 1 7 13			1 1											
1 7 31 1 7 11 1 7 11 1 7 11 1 7 21 1 7 22 1 7 22 1 7 22														

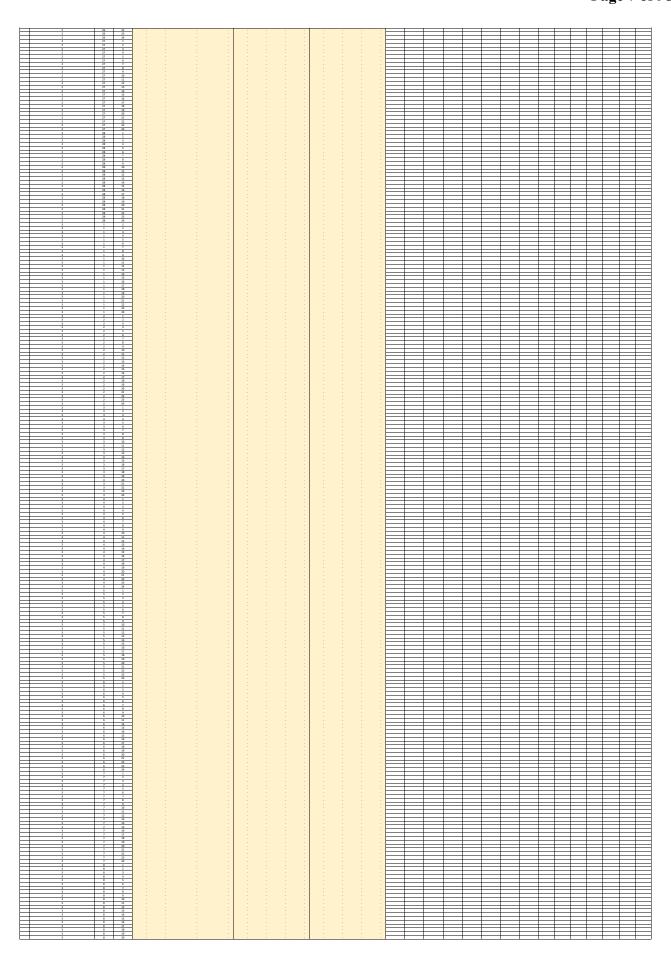


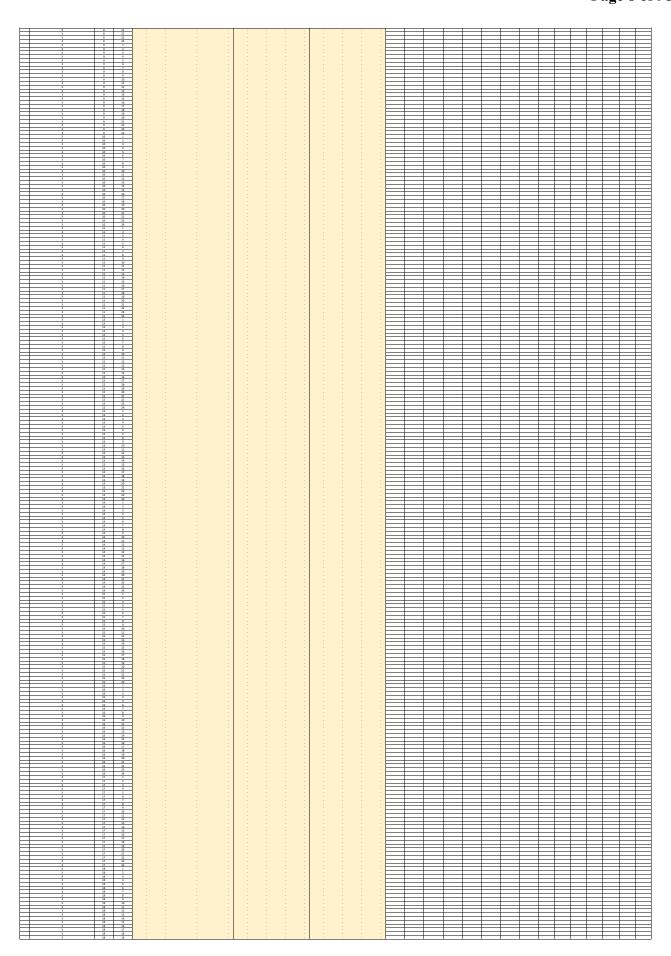


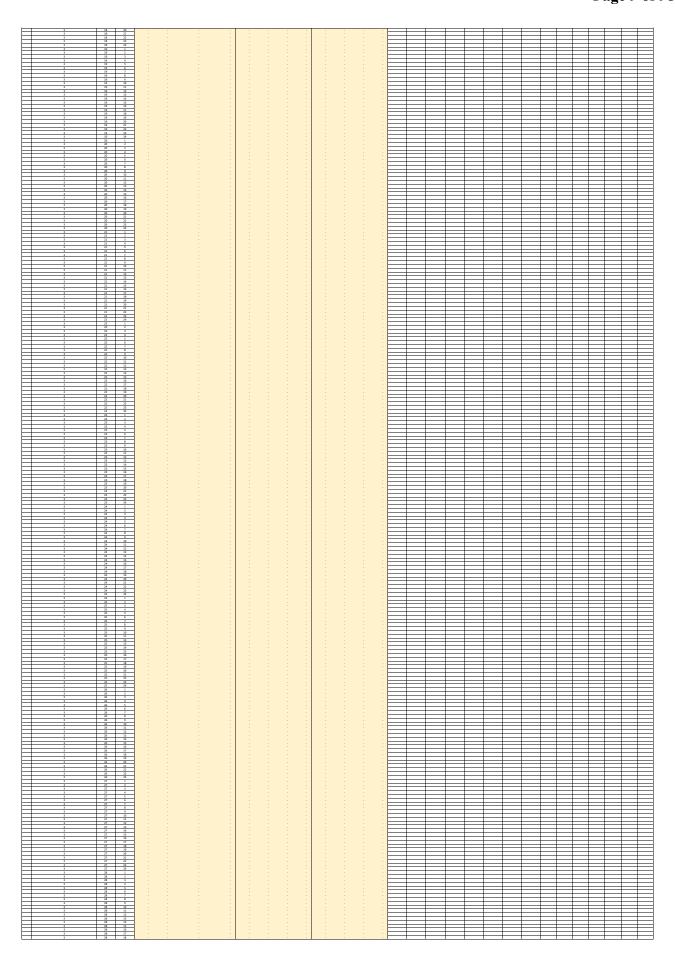




2 15 24 24 24 24 24 24 24 24 24 24 24 24 24			:											
2 17 4 2 17 5 2 17 5 2 17 6														
2 17 7 2 17 8 2 17 9 2 17 10														
2 17 11 2 17 12 2 17 12 2 17 13	:		- :											
2 17 16 2 17 15 2 17 16 2 17 17														
2 17 18 2 17 19 2 17 20 2 17 20														
2 17 22 2 17 23 2 17 23 2 17 24														
2 18 1 2 18 2 2 18 3 2 18 4														#
2 18 5 2 18 6 2 18 7	:		- :											
2 18 9 2 18 9 2 18 10 2 18 11														
2 18 12 2 18 13 2 18 14 2 18 15														
2 18 16 2 18 17 2 18 17 2 18 18														
2 18 19 2 18 20 2 18 21 2 18 22														#
2 18 23 2 18 24 2 19 1	- :		- 1											
2 19 2 2 19 3 2 19 4 2 19 5														=
2 19 6 2 19 7 2 19 8	:		- :											
2 19 9 2 19 10 2 19 12														#
2 19 11 2 19 14 2 19 15			- :											
2 19 16 2 19 17 2 19 18 2 19 19														#
2 19 20 2 19 21 2 19 22														
2 19 23 2 19 24 2 2 20 1 2 2 20 1														
2 20 3 2 20 4 2 20 5					Ħ	7						=	1	=
2 20 7 2 20 7 2 20 8 2 20 9					<u> </u>					=				=
2 20 10 2 20 11 2 20 12 2 20 12 2 30 13														
2 20 14 2 20 14 2 2 20 15 2 20 16														=
2 20 17 2 20 18 2 20 19	:		- :											
2 20 20 2 20 21 2 20 22 2 20 22														#
2 20 24 2 21 1 2 21 2 2 21 2														
2 21 4 2 21 5 2 21 6														
2 21 7 2 21 8 2 21 9	- :													
2 21 11 2 21 12 2 21 12 2 21 13														
2 21 14 2 21 15 2 21 16	:		- :											
2 21 18 2 21 19 2 21 20														
2 21 21 2 21 22 2 21 22 2 21 23 2 21 34														
2 22 1 2 22 2 2 22 3	:		- 1											
2 22 4 2 22 5 2 22 6 2 22 7														
2 22 8 2 22 9 2 22 10	:		- :											
2 22 11 2 2 22 13 2 22 14														
2 22 15 2 22 16 2 22 17	- :													
2 22 19 2 22 10 2 22 20 2 22 21														
2 22 22 2 22 23 2 22 34														
2 21 2 2 21 1 2 21 4	- :		- 1											
2 21 5 2 21 6 2 21 7 2 21 8														#
2 23 9 2 23 10 2 23 11						1				=		=	1	
2 23 12 2 23 13 2 22 14 2 22 15 2 23 15														
2 23 16 2 23 17 2 23 17 2 23 18 2 2 23 19						4						=	#	F
2 23 20 2 23 21 2 23 22														=
2 23 23 2 2 23 24 2 2 24 1 2 2 24 1 2 2 24 2 2 2 24 3 2 2 24 3 2 2 24 4 4						#				=		=	=	
2 24 2 2 34 3 2 24 4 4 2 24 5 2 24 6														
2 24 7 2 24 8 2 24 9														#
2 24 11 2 24 11 2 24 11 2 2 24 12 2 24 12 2 24 13 2 2 24 13	÷											\exists		
														=
2 24 16 2 24 17 2 24 17 2 2 24 18 2 2 24 19 2 2 34 10	:		- :											
2 34 20 2 2 34 21 2 34 22 2 34 22 2 2 4 24 2 2 24 24 2 2 25 1					Ħ									#
2 24 24 24 2 25 1 2 25 2 2 25 2 2 2 25 3														
2 25 4 2 25 5 2 25 6														#
2 25 7 2 25 8 2 25 9 2 25 9 2 25 30 2 25 31						=		=		=		=	#	
2 25 12 2 25 13														
2 25 14 2 2 25 15 2 2 25 16 2 2 25 17						+						=	+	#
2 2 25 18 2 2 25 19 2 2 25 19 2 2 25 20 2 2 25 20 2 2 25 21 2 2 25 21														#
2 25 21 2 25 22 2 25 22 2 25 23 2 25 24					H	$=$ \mathbb{I}		=	=			$=$ \mathbb{I}		≢≣
2 36 1 2 25 2 2 26 2 2 36 3														
2 25 4 2 25 5 2 26 6 2 36 7					H		=		=			=		≢≣
2 25 8 2 9 2 10 10 10 10 10 10 10 10 10 10 10 10 10														
2 26 11 2 25 12 2 26 13 2 26 13 2 2 16 14						#				=		=	#	#
2 26 15 2 25 16 2 2 36 17 2 36 17														
2 25 18 2 25 19 2 25 20 2 25 20 2 26 20					Ħ			=			Ī	1		Ħ
						 	,	 						







3 28 19 3 28 20 2 28 21 3 28 21												
3 28 23 3 28 24 1 29 1	: :		:									
1 29 2 2 29 3 1 29 4												
1 29 6 1 29 7 1 29 7			:									
3 29 9 3 29 10 3 29 11			:									
1 29 11 1 29 14 1 29 15	: :		:									
1 29 16 1 29 17 1 29 18			:									
1 29 19 1 29 20 1 29 21												
3 29 23 3 29 24 3 29 24 3 30 1	: :		:									
3 30 2 3 30 3 3 30 4	i i		-									
3 30 4 3 30 7 3 30 8												
3 30 9 3 30 10 3 30 11			-									
3 30 12 3 30 13 3 30 14												
3 30 16 3 30 17 3 30 17 3 30 18			- 1									
3 30 19 3 30 20 3 30 21	: :		-									
3 30 22 3 30 23 3 30 24												
3 31 2 3 31 3 3 31 4	: :		:									
3 31 5 3 21 6 3 31 7												
3 31 8 3 31 9 3 31 10												
3 31 12 3 31 12 3 31 13								Ħ	=	▐		
3 31 15 3 21 16 3 31 17												$\pm \Xi$
3 31 18 3 31 19 3 31 20 3 31 20					Ħ			H		Ė		\blacksquare
3 21 22 3 31 22 3 31 23 3 21 24												==
4 1 1 4 1 2 4 1 3												Ħ
4 1 4 4 1 5 4 1 6					H			H	Ė			
4 1 2 4 1 3 4 1 9					Ħ			Ħ		+		==
4 1 11 4 1 12 4 1 13										ŧ		
4 1 14 4 1 15 4 2 16			÷									
4 1 1/2 4 1 18 4 1 19 4 1 20												
4 1 21 4 1 22 4 1 22	: :		:									
4 1 24 4 2 1 4 2 2			:									
4 2 3 4 2 4 4 2 5												
4 2 7 4 2 8 4 2 9			:									
4 2 10 4 2 11 4 2 12												
4 2 13 4 2 14 4 2 15												
4 2 17 4 2 18 4 2 18 4 2 19			- 1									
4 2 20 4 2 21 4 2 22	: :		:									
4 2 24 4 2 24 4 1 1 1 4 1 2												
4 3 3 4 3 4 4 3 5												
4 3 6 4 3 7 4 3 8	: :		-									
4 3 10 4 3 10 4 3 11 4 3 12												
4 2 13 4 3 14 4 3 15												
4 3 16 4 3 27 4 1 18			:									
4 3 20 4 3 20 4 3 21 4 3 21												
4 3 23 4 3 26 4 4 2												
4 4 2 4 4 1 4 4 4	i i											
4 4 5 4 4 7 4 4 2					EŦ			Ħ				
4 4 9 4 4 10 4 4 11										1		
4 4 12 4 4 13 4 4 14 4 7								\vdash	=	+		\blacksquare
4 4 15 4 4 27 4 4 18										ı		
4 4 19 4 4 20 4 4 21 4 4 22 4 4 22 4 4 22						\perp		H	Ŧ			+
4 4 22 4 4 23 4 4 24 4 5 1					Ħ			H				=
4 5 2 4 5 3 4 5 3										ı		
4 5 5 4 5 6 4 5 7					$\models \exists$	Ħ	ΗĒ	Ħ			ŧ	\blacksquare
4 5 8 4 5 9 4 5 10 4 5 11								Ħ				
4 5 11 4 5 12 4 5 12 4 5 13 4 5 13 4 5 15									=	⇟		
4 5 15 4 5 16 4 5 17												$\pm \Xi$
4 5 18 4 5 29 4 5 20					H			H		#		==
4 5 22 4 5 23 4 5 23			:									
4 6 1 4 6 2 4 6 3								Ħ		1		$\pm \mp$
4 6 4 4 6 5 4 6 6 7								H				==
4 6 8 4 6 9 4 6 10			:									
4 6 30 4 6 11 4 6 12 4 6 12 4 6 12 4 6 12								H	1	Ŧ		
4 6 14 4 6 15 4 6 15 4 6 16 4 6 17 4 6 17					Ħ			H	E	==	Ē	\blacksquare
6 5 17 4 6 18 4 6 19 4 6 10					Ħ			Ħ		#		==
4 6 22 4 6 22 4 6 23			:									
4 6 24 4 7 1 4 7 2								H	1	Ŧ		
4 7 2 4 7 4 4 7 5					$\models \exists$	Ħ	ΗĒ	Ħ			ŧ	\blacksquare
4 7 6 4 7 7 4 7 8 4 2 0					Ħ			Ħ		#		==
4 7 10 4 7 11 4 7 11												
4 7 13 4 7 14 4 7 14 4 7 15								H	1	Ŧ		
4 7 16 4 7 17										<u> </u>		

4 7 18 4 7 19 6 7 20	1 1		- 1	1 1	-	1 1								
4 7 22 4 7 22 4 7 23 4 7 23														=
4 8 1 4 8 2 4 8 2		: :												
4 8 4 4 8 5 4 8 5														
4 8 7 4 8 8 4 8 9	1 1													
4 8 30 4 8 11 4 8 12														=
4 8 14 4 8 15 4 8 15														
4 8 17 4 8 18 4 8 18 4 8 19	1 1	i i												=
4 8 20 4 8 21 4 8 22														
4 8 23 4 8 24 4 9 1														
4 9 2 4 9 3 4 9 4														
4 9 5 4 9 6 4 9 7	1 1													
4 9 8 4 9 9 4 9 30														
4 9 11 4 9 12 4 9 13														=
4 9 15 4 9 16 4 9 16														=
4 9 18 4 9 19 4 9 19														=
4 9 21 4 9 22 4 9 22														=
4 9 24 4 10 1		1 1												
4 10 3 4 10 4 4 10 5		1 1												
4 10 5 4 10 7 4 10 8										Ħ	=	=		=
4 10 9 4 10 10 4 10 11	: :													
4 10 12 4 10 13 4 10 14	: :									Ħ	#	_		
4 10 15 4 10 16 4 10 17										Ħ	#	_		=
4 10 18 4 10 19 4 10 20														
4 10 21 4 10 22 4 10 23	1 1									H	=			ᆗ
4 10 24 4 11 1 4 11 2							$=$ \mathbb{I}	H	E	Ħ	\equiv	\equiv		\equiv
4 11 3 4 11 4 4 11 5								ullet		H	Ŧ	$=$ \mathbb{I}		\equiv
4 11 6 4 11 7 4 11 8														
4 11 9 4 11 10 4 11 11 11										\vdash	=	=		=
4 11 12 4 11 13 4 11 14								Ħ		\vdash	=	=		=
4 11 16 4 11 17 4 11 17														
4 11 19 4 11 20 4 11 20														
4 11 22 4 11 22 4 11 23														
4 12 1 4 12 2 4 12 3														
4 12 4 4 12 5 4 12 6														
4 12 7 4 12 8 4 12 9														
4 12 10 4 12 11 4 12 12														
4 12 13 4 12 14 4 12 15														
4 12 36 4 12 17 4 12 18														
4 12 20 4 12 21 4 12 21 4 12 22	1 1	i i												=
4 12 23 4 12 24 4 13 1														
4 13 2 4 12 3 4 12 4														
4 13 5 4 13 6 4 13 7														
4 11 8 4 11 9 4 12 10														
4 13 12 12 4 13 13 14 4 13 14 14														
4 13 15 4 13 16 4 13 17	1 1	1 1												
4 12 18 4 13 29 4 13 20		1 1												
4 12 21 4 13 22 4 13 23														=
4 13 24 4 14 1 4 14 2														
4 14 1 4 14 4 6 14 5					÷			F		Ħ	$=$ \mathbb{I}	I		\equiv
4 34 5 4 34 6 6 34 7 4 34 34 8 6 34 9 6 34 31 6 34 31 6 34 31 8 34 34 34 34 34 34 34 34 34 34 34 34 34								ullet		HĪ	Ŧ	$=$ \mathbb{I}		\equiv
4 14 9 4 14 10 4 14 11														
4 14 13 4 14 14										=	=	=		=
4 34 35 4 38 36 4 34 37 4 34 37								Ħ		\vdash	=	=		=
4 24 18 4 24 19 4 34 20 4 34 20 4 34 21 4 34 22 4 34 22										Ħ				=
6 24 21 6 34 22 6 34 23 6 34 24										Ħ				=
4 15 1 4 15 2 4 15 2										Ħ	#	#		=
4 15 4 4 15 5 4 15 6	1 1								H	Ħ				
4 15 7 4 15 8 4 15 9	1 1									Ħ				=
4 15 10 4 15 11 4 15 12														
4 15 13 4 15 14 4 15 15								H		Ħ	3	\exists		\equiv
4 15 16 4 15 17 4 15 18											=	=		=
4 15 29 4 15 20 4 15 21 4 15 21 4 15 22										\vdash	=	=		=
4 15 22 4 15 23 4 15 24 4 15 24								=		\vdash	=	=		=
4 156 1 4 156 2 4 156 2 4 156 3 4 156 4 4 156 5 4 156 5								Ħ			=	=		=
4 35 5 4 35 6 4 16 7										Ħ	=	#		\equiv
4 15 7 4 15 8 4 15 9 4 16 10										Ħ	=	#		\equiv
4 156 13 4 156 13 4 156 13										Ħ				\equiv
4 15 14 4 15 15 4 16 15	: :									Ħ				\equiv
4 15 17 4 15 18 4 16 10	: :									Ħ				\equiv
4 15 21 4 15 21 4 15 21										Ħ	=	=		=
4 15 23 4 15 24 4 17 1										Ħ	=	=		=
4 17 2 4 17 3 4 17 4										Ħ	=	=		=
4 17 5 4 17 6 4 17 7										Ħ	=	=		=
4 17 8 4 17 9 4 17 10										Ħ	#	_		=
4 17 11 4 17 12 4 17 13											3			
4 17 14 4 17 15 4 17 16											=	=		
	·	·	_		_		 _	 	 		_		_	

4 17 27 4 17 18 4 17 19 4 17 29														
4 17 21 4 17 22 4 17 23 4 17 24														
4 18 1 4 18 2 4 18 3														
4 18 5 4 18 6 4 18 7			-											
4 12 2 4 12 9 4 12 10 4 12 10														
4 18 12 4 18 13 4 18 14	:		-											
4 12 15 4 18 17 4 18 17 4 18 18														
4 18 19 4 18 20 4 18 21 4 18 22														
4 18 23 4 18 24 4 19 1	:													
4 29 2 4 29 3 4 19 4 4 29 5														
4 29 6 4 29 7 4 29 8														
4 19 10 4 19 11 4 19 12														
4 19 11 4 12 14 4 19 15 4 19 16														
4 19 17 4 19 18 4 19 29	:		- :											
4 19 20 4 19 21 4 19 22 4 19 23														
4 19 24 4 20 1 4 20 2	:		:											
4 20 4 4 20 4 4 20 5														
4 20 7 4 20 8 4 20 9			-											
4 20 10 4 20 11 4 20 12 4 20 12										=	+			
4 20 14 4 20 15 4 20 16											1			
6 20 17 4 20 18 4 20 19 4 20 20								Ŀ						
4 20 21 4 20 22 4 20 23														
4 21 1 4 21 2 4 21 2								Ŀ						
4 21 4 4 22 5 4 22 6 4 21 6										7	7			
4 21 7 4 22 8 4 21 9 4 21 10								Ŀ						
4 21 11 4 21 12 4 21 13														
4 21 14 4 21 15 4 21 16 4 21 17														
4 21 18 4 21 19 4 21 20														
4 21 22 4 21 22 4 21 23 4 21 24														
4 22 1 4 22 2 4 22 3	:		-											
4 22 5 4 22 5 4 22 6														
4 22 8 4 22 9 4 22 10	:		:											
4 22 11 4 22 12 4 22 14														
4 22 15 4 22 16 4 22 17 4 22 17														
4 22 29 4 22 20 4 22 21														
4 22 22 4 22 23 4 22 24 4 22 34														
4 21 2 4 21 2 4 22 3 4 22 4														
4 21 5 4 21 6 4 22 7														
4 23 9 4 21 10 4 23 11	:		- :											
4 21 12 4 21 11 4 21 15														
4 21 16 4 21 17 4 21 18	:		:											
4 23 20 4 23 21 4 23 21 4 21 22														
4 21 22 24 4 22 24 1	:		-											
4 24 1 4 24 4 4 24 5	:													
4 24 6 4 24 7 4 24 8 4 24 9								ΙΞ	目	1				
4 24 9 4 24 30 4 24 31 4 24 31 4 24 31 4 24 31														
4 24 12 4 24 13 4 24 31 4 22 14 6 22 15 6 22 15										=	+			
6 24 12 6 24 15 6 24 15 6 4 24 15 6 4 24 25 6 5 24 21 8 4 24 22									H	7	Ŧ			
6 24 20 6 24 21 6 24 21 6 24 22 6 24 22 6 24 24														
4 24 24 4 25 1 4 25 2 4 25 3					$=$ \mp		$+ \mathbb{F}$	ΙĪ	Ħ			Ī		= =
4 25 4 4 25 5 4 25 6														
4 25 7 4 25 8 4 25 9 4 25 20					$=$ \mp	$+$ \mp	$+ \mathbb{F}$	H	Ħ	Ŧ	F	ŧ	H	
4 25 10 4 25 11 4 25 25 12 4 25 25 21														
4 25 14														
4 25 18 4 25 29 4 4 25 20														
4 25 35 4 25 35 4 25 36 4 25 36 4 25 36 4 25 36 4 25 36 4 25 36 4 35 36 4 35 32 4 35 32 4 35 32 4 35 32 4 35 32 5 36 32 6 4 35 32 6 4 35 32 6 6 35 32 6 7 35 32 6 7 35 32 6 8 35 32 7 8 35 32 8 3										=				
4 25 1 4 25 2 4 25 3 4 26 3 4 26 4 6 26 5	:		:											
4 26 6 4 26 7								▙						
4 25 8 4 25 9 4 25 10 4 25 11									H	1	Ŧ			
6 26 31 6 26 12 6 26 12 6 26 13 6 26 14 6 26 15 6 26 15								Ŀ						
4 25 15 4 25 16 4 25 17 4 25 17										1	Ŧ			
6 25 18 4 25 19 4 25 20 4 25 21								Ŀ						
4 25 22 4 25 23 4 25 24 4 25 24									Ħ	7	Ŧ			
4 27 2 4 27 3 4 27 4														
4 27 5 4 27 6 4 27 7										4	1			
4 27 8 4 27 9 4 27 10 4 27 11														
4 27 12 4 27 13 4 27 14											1			
4 27 35	 				1=	- 1 T			Т					

6 27 16 4 27 17 4 27 18 4 27 19											\blacksquare
4 27 20 4 27 21 4 27 22 4 27 22											=
4 27 24 4 28 1 4 28 2		: :		- 1							
4 21 1 4 21 4 4 22 5 4 22 6											\equiv
4 28 7 4 28 8 4 28 9				Ė							
4 28 10 4 28 11 4 28 12 4 28 12											
4 28 14 4 28 15 4 28 16											
4 28 17 4 28 18 4 28 39											#
4 28 21 4 28 21 4 28 22 4 21 23											=
4 28 24 4 29 1 4 29 2											
4 29 3 4 29 4 4 29 5 4 29 5											
4 29 7 4 29 8 4 29 9				- 1							
4 29 10 4 29 11 4 29 12											\pm
4 22 15 4 29 15 4 29 16											
4 29 17 4 29 18 4 29 19 4 29 29 20											=
4 29 21 4 29 22 4 29 22											\equiv
4 29 24 4 30 1 4 30 2											
4 30 4 4 30 5 4 30 5											=
4 30 7 4 30 8 4 30 8											
4 30 10 4 30 11 4 30 12 4 30 12											otan
4 30 14 4 30 15 4 30 15 4 30 16											\blacksquare
4 20 17 4 30 18 4 30 29 4 31 31 31						$=\mathbb{T}$	HĪ	H	ŧ		丰
4 30 21 4 30 22 4 30 22 4 20 23						_					\blacksquare
6 20 24 5 1 1 5 1 2											\blacksquare
5 1 3 5 1 4 5 2 5 5 1 6											Ħ
5 1 7 5 1 8 5 1 9											
5 1 10 5 2 11 5 1 12 5 1 12											Ħ
5 1 14 5 1 15 5 1 15											\equiv
5 1 17 5 1 18 5 1 19 5 1 19											\pm
5 1 22 5 1 22 5 1 23											
5 1 24 5 2 1 5 2 2				÷							
5 2 3 5 2 4 5 2 5											#
5 2 7 5 2 8 5 2 9				Ė							
5 2 10 5 2 11 5 2 12 5 2 12											
5 2 14 5 2 15 5 2 15		: :		÷							
5 2 17 5 2 18 5 2 19											\pm
5 2 21 5 2 22 5 2 22 5 2 23											
5 2 24 5 3 1 5 3 2											
5 3 4 5 3 5 5 3 6											=
5 3 7 5 3 8 5 3 9				÷							
5 3 11 5 3 12 5 3 12											\equiv
5 3 14 5 3 15 5 3 16				÷							
5 3 18 5 3 19 5 3 20											\equiv
5 3 21 5 3 22 5 1 23											
5 3 24 5 4 1 5 4 2											
5 4 4 5 5 4 5											\blacksquare
5 4 7 5 4 8 5 4 9 5 4 10											Ħ
5 4 11 5 4 12 5 4 12											\blacksquare
5 4 14 5 4 15											Ħ
5 4 16 5 4 17 5 4 18 5 4 18 5 4 25											
5 4 21 5 4 22 5 4 23 5 4 23											Ħ
5 5 1 5 5 2 5 5 2											
5 5 4 5 5 5 5 5 5 6						$= \mathbb{T}$	Ħ	ŧΞ	ŧ		Ħ
5 5 7 5 5 8 5 5 9 5 5 5 10											\blacksquare
5 5 11 5 5 12 5 5 12											\blacksquare
5 5 14 5 5 15 5 5 16 5 5 17											\blacksquare
5 5 18 5 5 19 5 5 5 20											
5 5 21 5 5 22 5 5 23 5 5 24											\equiv
5 6 1 5 6 2 5 6 2											\blacksquare
5 6 4 5 6 5 5 6 6 7						$=\mathbb{T}$	HĪ	H	ŧ		丰
5 6 8 5 6 9 5 6 9											\blacksquare
5 6 11 5 6 12 5 6 13		1 1									\blacksquare
5 6 14 5 6 15 5 6 16 5 6 16						$=$ \top	Ħ	H	ŧ		目
5 6 18 5 6 20 5 6 20											\blacksquare
5 6 21 5 6 22 5 6 23		1 1									\blacksquare
5 6 24 5 7 1 5 7 2 5 7 2											丰
5 7 4 5 7 5 5 7 5											
5 7 7 5 7 8 5 7 9							Ħ				目
5 7 10 5 7 11 5 7 12 5 7 11											Ħ
5 7 13 5 7 34	1										

5 7 15 5 7 16 5 7 17	1 1		-	÷	1 1								
5 7 29 5 7 20 5 7 20 5 7 20													
5 7 22 5 7 23 5 7 23 5 7 23													
5 8 1 5 8 2 5 8 3													
5 8 4 5 8 5 5 8 6													
5 8 7 5 8 8 5 9													
5 8 20 5 8 11 5 8 12 5 8 12													
5 8 14 5 8 15 5 8 15		1 1											
5 8 17 5 8 28 5 8 19													
5 8 20 5 8 21 5 8 22													
5 8 22 5 8 24 5 9 1													
5 9 2 5 9 3 5 9 4													
5 9 5 5 9 6 5 9 7													
5 9 9 5 9 10													
5 9 12 5 9 13 5 9 14													
5 9 15 5 9 16 5 9 16													
5 9 18 5 9 19 5 9 19													
5 9 21 5 9 22 5 9 22													
5 9 24 5 10 1													
5 10 3 5 10 4 5 10 5						F							H
5 50 6 5 10 7 5 10 8													
5 50 9 5 10 10 5 10 11										_			
5 10 12 5 10 13 5 10 14													
5 10 15 5 10 16 5 20 17													
5 10 18 5 10 19 5 20 20						Ħ			$\pm \pm$				目
5 10 21 5 10 22 5 20 23						H			ΗĪ	E			目
5 10 24 5 11 1 5 11 2						H				ΙĒ			目
5 11 2 5 11 4 5 11 5						H							Н
5 11 6 5 11 7 5 11 8						Ħ							Ħ
5 11 10 5 11 10 5 11 11 10						Ħ							Ħ
5 12 13 15 5 11 14 15 15 15 15 15 15 15 15 15 15 15 15 15													
5 11 15 5 11 15 5 11 17													
5 11 19 5 11 20 5 11 20													
5 11 22 5 12 23 5 11 24													
5 12 1 5 12 2 5 12 3													
5 12 4 5 12 5 5 12 6													
5 12 7 5 12 8 5 12 9													
5 12 10 5 12 11 5 12 12													
5 12 13 5 12 14 5 12 15													
5 22 36 5 12 17 5 12 18 5 12 18													
5 12 20 5 12 21 5 12 21 5 12 22		1 1											
5 12 23 5 12 24 5 13 1													
5 12 2 5 23 3 5 13 4													
5 13 5 5 13 6 5 13 7													
5 13 8 5 13 9 5 13 10													
5 13 11 5 13 12 5 13 12													
5 13 15 5 13 15 5 13 16													
5 13 16 5 13 16													
5 13 21 5 13 21 5 13 22													
5 11 24 1 5 14 1 5 14 1													
5 34 2 5 34 3 5 34 4 5 34 5 5 34 5 5 34 6 5 34 6 5 34 7 5 34 8													
5 34 6 5 34 7 5 34 7						Ė						\equiv	Ħ
5 14 30 5 14 11						H							Н
5 14 12 5 14 13 5 14 14 5 14 14						Ħ			+				Ħ
5 14 15 5 14 16 5 14 17 5 14 17 5 14 18 5 14 19						\vdash							
5 24 16 5 24 17 5 24 17 5 24 18 5 24 19 5 24 20 5 24 20						Ħ							Ħ
5 14 21 5 14 22 5 14 23 5 14 24													
5 25 26 5 15 2 5 15 2						Ħ							H
5 35 4 5 35 5 5 35 6										_			
5 15 7 5 15 8 5 15 8													
5 15 10 5 15 11 5 15 12													
5 15 11 5 15 14 5 15 15													Ħ
5 15 16 5 15 17 5 15 18													
5 15 19 5 19 5 15 20 5 15 21 5 15 21 5 15 22													
5 15 23						H							Н
5 15 24 5 16 1 5 16 2 5 16 2 5 16 3													Ħ
5 16 4 5 16 5 5 16 5 5 16 6													Ħ
5 16 7 5 15 8 5 16 9 5 16 10						Ħ		=					Ħ
5 16 10 5 16 11 5 16 12						Ħ			+				Ħ
5 16 13 5 16 14 5 16 15						Ħ			+				Ħ
5 16 16 5 16 17 5 16 18						Ħ							Ħ
5 16 20 5 16 20 5 16 20													\blacksquare
5 16 22 5 16 23 5 15 24						H							Ħ
5 17 1 5 17 2 5 17 2						H							Ħ
5 17 4 5 17 5 5 17 6						H							Ħ
5 17 8 5 17 8 5 17 9						H							Ħ
5 17 20 5 17 11 5 17 12 5 17 12						H							H

5 17 14 5 17 15 5 17 16	1 1			1 1									
5 17 18 5 17 19 5 17 20		1 1		1 1									=
5 17 21 5 17 22 5 17 23				i i									
5 1/ 24 5 18 1 5 28 2													
5 18 4 5 18 5 5 18 6													
5 18 7 5 18 8 5 18 9	i i												
5 18 12 5 18 12 5 18 12													
5 18 14 5 18 15 5 18 16				1 1									
5 18 17 5 18 18 5 18 29 5 18 20													
5 18 21 5 18 22 5 18 22		1 1		1 1									=
5 18 24 5 29 1 5 19 2													
5 29 4 5 29 5 5 29 5													
5 19 7 5 19 8 5 19 8	. i			E E									
5 19 10 5 19 11 5 19 12	i i												=
5 19 14 5 19 14 5 19 15 5 19 16													
5 19 17 5 19 18 5 19 18	1 1			1 1									
5 19 20 5 19 21 5 19 22													
5 19 24 5 20 1 5 20 2													=
5 20 3 5 20 4 5 20 4	1 1			1 1									Ħ
5 20 6 5 20 7 5 20 8					: :								目
5 20 9 5 20 10 5 20 11 5 20 11											=		\equiv
5 20 11 5 20 14 5 20 15											≓		Ħ
5 20 16 5 20 27 5 20 18													目
5 20 29 5 20 20 5 20 21 5 20 21													Ħ
5 20 21 5 20 24 5 21 1													
5 21 2 5 21 3 5 21 4								=		Ħ	Ŧ	=	目
5 21 5 5 21 6 5 21 7 5 21 8											=		Ħ
5 21 9 5 21 10 5 21 11		i i		: E									
5 21 12 5 21 11 5 21 14													
5 21 16 5 21 17 5 21 18													=
5 21 19 5 21 20 5 21 21	1 1	1 1		1 1									
5 21 22 5 21 23 5 21 24	i i												
5 22 2 5 22 3 5 22 4													=
5 22 5 5 22 6 5 22 7				1 1									
5 22 8 5 22 9 5 22 10													
5 22 12 5 22 11 5 22 14	1 1			1 1									
5 22 15 5 22 16 5 22 17 5 22 17	1 1												
5 22 19 5 22 20 5 22 20 5 22 21		1 1											=
5 22 22 5 22 23 5 22 24				1 1									
5 21 1 5 21 2 5 21 2													
5 22 5 5 23 6 5 23 7				1 1									
5 23 8 5 23 9 5 22 10				i i									
5 21 11 5 21 12 5 21 12 5 21 14													
5 23 15 5 23 16 5 23 17				1 1									
5 23 18 5 23 19 5 22 20													
5 21 21 5 21 22 5 21 22 5 21 24													
5 24 1 5 24 2 5 26 3	1 1	i i											
5 24 2 5 24 2 5 24 2 5 34 3 5 34 4 5 5 24 5 5 24 5 5 24 7 5 24 7 5 24 7										\blacksquare	=		\blacksquare
5 24 9 5 24 10													\blacksquare
5 24 11 5 24 12 5 24 12												_	目
5 24 34 5 24 35 5 24 35 5 24 36 5 24 36 5 24 37 5 24 38													Ħ
5 24 27 5 24 18 5 24 19 5 24 20													\blacksquare
5 24 21 5 24 22 5 24 22													目
5 24 24 5 25 1 5 25 2 5 26 2													Ħ
5 23 4 5 25 5 5 25 6													\blacksquare
5 25 7 5 25 8 5 22 9 5 25 20					: :	=		\pm		Ħ	Ŧ	=1	目
5 25 10 5 25 11 5 25 12 5 25 12													Ħ
5 25 14 5 25 15 5 25 16	1 1												\equiv
5 25 17 5 25 18 5 25 19 5 25 19										Ħ	Ŧ	=	目
5 25 20 5 25 21 5 25 22 5 25 22 5 25 23													Ħ
5 25 23 5 25 24 5 26 1 5 26 2	1 1												
5 25 3 5 25 4 5 24 5 5 26 6										\blacksquare	=		Ħ
5 25 6 5 26 7 5 26 8 5 26 9													\blacksquare
5 25 10 5 26 11 5 26 11													
5 26 11 5 26 14 5 26 15 5 26 15										Ħ	Ŧ	=	目
5 26 16 5 26 17 5 26 18 5 26 10											=		Ħ
5 26 20 5 25 21 5 26 22													
5 25 21 5 25 24 5 27 1	1 1										\exists		
5 27 2 5 27 3 5 27 4 5 27 4							+				=		\equiv
5 27 6 5 27 7 5 27 7													Ħ
5 27 9 5 27 19 5 27 11 5 27 11													
5 27 12				-				 	· -				

5 27 12 5 27 14 5 27 15 5 27 15								
5 27 17 5 27 18 5 27 29	1 1							
5 27 20 5 27 21 5 27 22 5 27 22								
5 27 24 5 28 1 5 28 2	1 1		1 1					
5 28 1 5 28 4 5 28 5								
5 28 7 5 28 8 5 28 9	1 1							
5 28 10 5 28 11 5 28 12								
5 28 13 5 21 14 5 22 15 5 28 16								
5 28 17 5 28 18 5 28 18 5 28 19	: :							
5 28 20 5 28 21 5 28 22 5 28 22								
5 28 24 5 29 1 5 29 1 5 20 2								
5 29 1 5 29 4 5 29 5								
5 29 6 5 29 7 5 22 8								
5 29 10 5 29 11 5 29 12	1 1		1 1					
5 29 11 5 29 14 5 29 15								
5 22 15 5 29 17 5 29 18 5 29 18								
5 29 20 5 29 21 5 29 22								
5 29 23 5 29 24 5 30 1 5 30 2								
5 30 4 5 30 5								
\$ 30 6 \$ 30 7 \$ 30 7							₽	
5 20 9 5 20 20 5 30 11 5 20 17					\rightarrow			
5 30 11 5 30 14 5 30 15								
\$ 20 16 \$ 30 17 \$ 30 18								
5 30 20 5 30 20 5 30 21 5 30 21					\rightarrow	+		
5 30 23 5 30 24 5 31 1								
5 21 2 5 21 3 5 21 4					$\Rightarrow \exists$	ΗŦ	ŧ	
5 21 5 5 21 6 5 21 7								
5 31 9 5 32 20 5 21 21								
5 31 12 5 31 13 5 31 14 5 31 16								
5 31 16 5 31 17 5 31 18	1 1		1 1					
5 31 19 5 31 20 5 31 21								
5 A1 A2 5 31 23 5 31 34 6 1 1								
6 1 2 6 1 3 6 1 4	: :							
6 1 5 6 1 6 6 1 7								
6 1 2 6 1 10 6 1 11								
6 1 12 6 1 13 6 1 14	1 1							
6 1 15 6 1 16 6 1 17								
6 1 19 6 1 20 6 1 21								
6 1 22 6 1 23 6 1 34								
6 2 1 6 2 1 6 2 4								
6 2 5 6 2 6 6 2 7								
6 2 8 6 2 9 6 2 10								
6 2 12 6 2 13 6 2 14								
6 2 15 6 2 16 6 2 17								
6 2 19 6 2 20 6 2 20 6 2 21								
6 2 22 6 2 22 6 2 23							₽	
6 3 1 6 3 2 6 3 3 4					\rightarrow		1	
6 3 5 6 3 6 6 3 7								
6 3 8 6 3 9 6 3 20							ŧĒ	
6 3 12 6 3 12 6 3 13								
6 3 15 6 3 16 6 3 27								
6 3 29 6 3 20 6 3 20 6 3 20					\rightarrow			
6 3 22 6 3 23 6 3 23								
6 4 1 6 4 2 6 4 3					$=$ \pm \mp	$+$ \mp	ΙĒ	
6 4 7					=			
6 4 8 6 4 9 6 4 10								
6 4 31 6 4 12 6 4 12								
6 4 15 6 4 15 6 4 16 6 4 27					\rightarrow			
6 4 18 6 4 29 6 4 20								
6 4 21 6 4 22 6 4 22 6 4 23					$\Rightarrow \exists$	ΗŦ	ŧ	
6 5 2								
6 5 4 6 5 5 6 5 6							Ħ	
6 5 7 6 5 8 6 5 9								
6 5 11 6 5 12 6 5 12					=			
6 5 14 6 5 15 6 5 15								
6 5 27 6 5 18 6 5 19 6 7								
6 5 20 6 5 21 6 5 22 6 5 22					\rightarrow	+		
6 5 24 6 1 6 2								
6 6 3 6 4 4 6 5 5								
6 6 6 7 6 6 8 6 6 8								
6 6 10		1 1					+	

6 6 12 6 6 13 6 6 14					:	: :									
6 6 16 6 6 17 6 6 18															
6 6 19 6 6 20 6 6 21															H
6 6 22 6 6 22 6 6 24															
6 7 1 6 7 2 6 7 3															
6 7 4 6 7 5 6 7 6															
6 7 8 6 7 9															
6 7 11 6 7 12 6 7 12 6 7 12	1 1	1 1				: :									
6 7 14 6 7 15 6 7 16															
6 7 17 6 7 18 6 7 19															
6 7 20 6 7 21 6 7 22															
6 7 23 6 7 24 6 8 1	E E														
6 8 2 6 8 3 6 8 4															
6 8 6 6 8 7															
6 8 9 6 8 10															
6 B 12 6 B 13 6 B 14	1 1	1 1				: :									E
6 8 15 6 8 16 6 8 16	1 1	1 1													
6 8 19 6 8 20	1 1					: :									
6 8 21 6 8 22 6 8 23															
6 8 24 6 9 1 6 9 2											Ħ				e
6 9 3 6 9 4 6 9 5											H				ð
6 9 6 6 9 7 6 9 8							\equiv		Ħ		H		J		Ħ
6 9 9 10 6 9 11									Ħ	LΕ	Ħ	=	J		eĪ
6 9 12 6 9 13 6 9 14															=
6 9 15 6 9 16 6 9 17											\blacksquare				=
6 9 18 6 9 19 6 9 20															=
6 9 21 6 9 22 6 9 23												=			=
6 10 1 6 10 2 6 10 2											\blacksquare			=	曰
G 100 4 G 100 5 G 100 5									\models		\blacksquare			=	Ħ
6 10 7 6 10 8 6 10 0															e
6 10 10 10 6 10 11 6 10 12															
6 10 11 6 10 14 6 10 15															
6 10 16 6 10 17 6 10 18															
6 10 19 6 10 20 6 10 21	E E														
6 10 22 6 10 23 6 10 24	1 1														
6 11 1 6 11 2 6 11 3															
6 11 4 6 11 5 6 12 6															
6 11 7 6 11 8 6 11 9															
6 11 11 6 11 11 6 11 11 12 6 11 12															
6 11 14 6 11 15 6 11 16															
6 11 17 6 11 18 6 11 19															
6 11 20 6 11 21 6 11 22															
6 11 23 6 11 34 6 12 1															
6 12 3 6 12 3 6 12 5															Ħ
6 12 6 6 12 7 6 12 8	1 1	1 1				: :									
6 12 9 6 22 30 6 12 11															
6 12 12 12 6 12 12 12 12 12 12 12 12 12 12 12 12 12															
6 12 15 6 12 16 6 12 17	E E														
6 12 18 6 12 19 6 12 20	E E														
6 12 21 6 12 22 6 12 23												=			
6 12 24 6 13 1 6 13 2												=			=
6 11 5 6 11 5									\models		\blacksquare			=	Ħ
6 12 7 6 12 7 6 13 8 6 12 9									\models		\blacksquare			=	Ħ
6 13 10 6 13 11 6 23 12						: :						_	#		F
6 13 13 13 6 11 14 6 12 15 6 13 15 16												3			f
6 11 16 6 11 17 6 6 12 18												3			f
6 11 19 6 11 20 6 11 21 21		i i									Ħ				
6 13 22 6 13 23 6 11 24											\blacksquare				目
6 14 1 6 34 2 6 14 3											\blacksquare				目
6 14 4 6 24 5 6 14 6													=		e
6 34 7 6 24 8 6 14 9											\blacksquare				曰
6 14 10 6 14 11 6 14 12											+	=	=		e
6 34 11 6 24 24 6 34 15 6 24 16												=			Ħ
6 14 17 6 24 18 6 14 19											\blacksquare				Ħ
6 34 20 6 34 21 6 34 22 6 34 22 6 34 22 6 34 22											Ħ	=			Ħ
6 14 23 6 14 24 6 15 1											Ħ	=			Ħ
6 15 2 6 15 3 6 15 4						: :									
6 15 5 6 15 6 6 15 7															e
6 15 8 6 15 9 6 15 10						: :						J	J		F
6 15 11 6 15 12 6 15 13												_	_		
6 15 14 6 15 15 6 15 15											Ħ	7	=		F
6 15 17 6 15 18 6 15 19											H				目
6 15 20 6 15 21 6 15 22											Ħ				ð
6 15 23 6 15 24 6 16 1											Ħ				릐
6 16 2 6 16 3 6 16 4											Ħ				릐
6 14 5 6 6 6 6 6 6 7 7 6 8 8 8 8 8 8 8 8 8 8 8											H	=	=		Ħ
6 16 8 6 16 9 6 16 10															
		· · · · · · · · · · · · · · · · · · ·	_	 _	_	_	_	·	_	 	_			_	

6 16 11 6 16 12 6 16 12 6 16 13												
6 16 15 15 6 16 16 6 16 17	i i											
6 16 18 6 26 19 6 16 20 6 26 21												
6 16 22 6 16 23 6 16 24												
6 17 1 6 17 2 6 17 3												#
6 17 5 6 17 6 6 17 7					1 1							丰
6 17 8 6 17 9 6 17 10												
6 17 11 6 17 12 6 17 12												\equiv
6 17 15 6 17 16 6 17 17	i i											\blacksquare
6 17 18 6 17 19 6 17 20												\pm
6 17 22 6 17 23 6 17 23												
6 18 1 6 18 2 6 18 3	i i											
6 18 6 6 28 6 6 18 7												\equiv
6 28 8 6 28 9 6 18 10	i i			1 1								
6 19 11 6 19 12 6 19 13 12												
6 18 15 6 28 16 6 18 17	i i											\blacksquare
6 18 18 6 18 19 6 18 20 6 18 20 7												\pm
6 18 22 6 18 23 6 18 23												
6 19 1 6 29 2 6 19 3												
6 19 4 6 19 5 6 19 6 6 19 7									\blacksquare			\equiv
6 19 8 6 29 9 6 19 10							H				_	Ħ
6 29 11 6 19 12 6 29 13							Ħ		H			ฮ
6 19 14 6 19 15 6 19 15 6 19 17									oxdot			丰
6 19 18 6 19 29 6 19 20												\blacksquare
6 19 21 6 19 22 6 19 23 6 10 23							H		\blacksquare			Ħ
6 20 1 6 20 2 6 20 2							ш					\equiv
6 20 4 6 20 5 6 20 6							H	H	H		E	丰
6 20 8 6 20 9 6 20 10												\equiv
6 20 11 6 20 12 6 20 13	i i			1 1								
6 20 14 6 20 15 6 20 16												\equiv
6 20 18 6 20 19 6 20 20	i i											\blacksquare
6 20 21 6 20 22 6 20 23												\pm
6 21 1 6 21 1 6 21 2												\equiv
6 21 4 6 21 5 6 21 6												
6 21 7 6 21 8 6 21 9												
6 21 11 6 21 12 6 21 13												\equiv
6 21 14 6 21 15 6 21 16												
6 21 1/ 6 21 18 6 21 19 6 21 20												\equiv
6 21 21 6 21 22 6 21 23	i i				: :							
6 21 34 6 22 1 6 22 2 6 22 2												#
6 22 4 6 22 5 6 22 6												
6 22 7 6 22 8 6 22 9												
6 22 11 6 22 12 6 22 13					1 1							丰
6 22 14 6 22 15 6 22 16												
6 22 18 6 22 19 6 22 20												#
6 22 21 6 22 22 6 22 22 6 22 23									H			뒫
6 22 24 6 23 1 6 23 2 6 23 2												\pm
6 22 4 6 22 5 6 21 6		i i										\blacksquare
6 21 7 6 22 8 6 22 9 6 23 10											#	#
6 23 11 6 21 12 6 22 12 6 22 13 6 22 14 6 23 14		i i		: :								目
6 21 14 6 21 15 6 22 16 6 22 16												丰
6 21 18 6 22 19 6 21 20												#
6 23 21 22 6 22 22 23 6 22 23 23 6 23 23 23 24 24 24 24 24 24 24 24 24 24 24 24 24							Ħ		\blacksquare			Ħ
6 24 1 6 24 2 6 24 2 6 24 3									H		<u></u>	\blacksquare
6 24 4 6 24 5 6 24 6 6 24 6 6 24 7												Ħ
6 24 7 6 24 8 6 24 9 6 24 9												\equiv
6 24 11 6 24 12 6 24 12							H				_	Ħ
6 24 14 6 24 15 6 24 16							Ħ					ฮ
6 24 17 6 24 18 6 24 19 6 34 19												Ħ
6 24 19 6 24 20 6 34 21 6 34 21 6 24 22 6 24 22											≢	\equiv
6 24 24 6 25 1 6 25 2 6 25 2						=E	Ħ		Ħ			目
6 25 3 6 25 4 6 25 5 6 25 6												\equiv
6 25 7 6 25 7 6 25 8 6 25 8 6 25 9												\equiv
6 25 10 6 25 11 6 25 12 6 25 12						£	Ħ		Ħ			卣
6 25 14 6 25 15 6 25 16											_	픨
6 25 17 6 25 18 6 25 29												\blacksquare
6 25 20 6 25 21 6 25 22 6 6 25 22 22 6 73 73						F	Ħ		Ħ	Ī		Ħ
6 25 24 6 6 25 1 6 26 2 1							H					Ħ
6 25 3 6 25 4 6 25 5												\blacksquare
6 25 4 6 25 5 6 25 5 6 25 5 6 25 7 6 25 8												Ħ
				_			 	 				

6 26 6 26 6 26 6 26	10 11 12 13															
6 26 6 26 6 26	14 15 16			- :												
6 26 6 26 6 26	17 18 19															
6 26 6 26 6 26 6 26 6 26 6	21 22 23			- :		:										
6 26 6 27 6 27	24 1 2															
6 27 6 27 6 27	4 5															
6 27 6 27 6 27	7 8 9			- 1												
6 27 6 27 6 27	10 11 12															
6 27 6 27 6 27	14 15 16															
6 27 6 27 6 27	17 18 19			- :												
6 27 6 27 6 27	20 21 22 22															
6 27 6 28 6 28	24 1 2															
6 28 6 28 6 21	4 5			- :												
6 21 6 22 6 22	7 8															
6 28 6 28 6 28	10 11 12			- 1												
6 28 6 28 6 28	11 14 15			- :												
6 21 6 21 6 23	17 18															
6 21 6 21 6 21	20 21 22															
6 28 6 28 6 29	23 24 1			- :		-										
6 29 6 29 6 29 6 23	2 3 4					:					Ħ					
6 29 6 23 6 23 6 27	5 6 7										Ħ	=	#		Ħ	=
6 29 6 23 6 23	9 30 31										Ħ					
6 29 6 29 6 29	12 13 14											1	1			\equiv
6 23 6 23 6 23	15 16 17			- 1							Ħ	=	₹			
6 29 6 23 6 23 6 23 6	18 19 20 21										H					
6 29 6 29 6 29	22 23 24									L		=	=			
6 30 6 30 6 30 6	1 2 3															
6 30 6 30 6 30	4 5 6			- 1							Ħ					
6 30 6 30 6 30	8 9															
6 30 6 30 6 30	11 12 13			- :		:										
6 20 6 20 6 20	14 15 16															
6 30 6 30 6 32	17 18 19															
6 20 6 30 6 30	21 22 23															
6 30 7 1 7 1	26 1 2			- :		:										
7 1 7 1 7 1	4					-										
7 1 7 1 7 1	7 8															
7 1 7 1 7 1	10 11 12															
7 1 7 1 7 1	13 14 15			- 1												
7 1 7 1 7 1	16 17 18															
7 1 7 1 7 1	20 21 22															
7 1 7 1 7 2	23 24 1			- :		-										
7 2 7 2 7 2	2 3 4					-										
7 2 2	5 6 7															
7 2 7 2 7 2 7 2	9 20 11															
7 2 7 2 7 2 7 2	12 13 14			- 1												
7 2 7 2 7 2	15 16 17			- 1												
7 2 7 2 7 7 2 7 7 7 7 7 7 7 7 7 7 7 7 7	19 20 21															
7 2 7 2 7 2	22 23 24															
7 1 7 1 7 2	1 2 3					:	=			F	H	Ŧ	Ŧ	Ħ	Ħ	
7 1 7 2 7 3 7 3	5 6 7										Ħ					
7 3 7 3 7 3	g 9 10			- 1												
7 3 7 3 7 3 7 3	11 12 13 14															
7 1 7 2 7 1 7 3	15 16 17												=			
7 1 7 2 7 3 7 3	18 19 20			:												
7 3 7 1 7 2	21 22 23 24					:					Ħ					
7 3 7 4 7 4	2										Ħ	=	#		Ħ	=
7 4 7 7 4 7 7 7 4 7 7 7 7 4 7 7 7 7 7 7	3 4 5 6										Ħ					
7 4 7 4 7 4	7 8 9			:												
7 4 7 4 7 4	10 11 12					:		E			Ħ	Ŧ	Ŧ		Ħ	
7 4 7 4 7 4 7 4	11 14 15 16										Ħ	=	=			
7 4 7 4 7 4 7 4	16 17 18 19 20 21 21 22 22 23											\exists	7			
7 4 7 4 7 4	20 21 22					Ė						\equiv	\equiv			
7 4 7 4 7 5	24 1										Ħ					
7 5 7 5 7 5	2 3 4											=	=			
7 5 7 5 7 5	6 7 8											\exists	1			
7 5 7 5 7 5	7 8 9 10 11										Ħ	\equiv	1			\equiv
7 5 7 5 7 5	12 13 14 15										Ħ					
7 5 7 5 7 5	16 17 18										H		=			
7 5 7 5 7 5	19 20 21			- 1								#	=			
7 5 7 5 7 5	22 23 24										Ħ	\equiv	1			\equiv
7 6 7 6 7 6 7 6	1 2 3															
7 6 7 6 7 7 6 7 7 7 8 8 7 7 8 8 8 8 8 8	5 6 7										H		=			
7 6										1			= t			_

7 6 9 7 6 10 7 6 11 7 6 11												
7 6 11 7 6 14 7 6 15			Ė									
7 6 16 7 6 17 7 6 18 7 6 18												=
7 6 20 7 6 21 7 6 22												
7 6 23 7 6 24 7 7 1												
7 7 1 7 7 4 7 7 5												Ħ
7 7 6 7 7 7 7 7 8												
7 7 9 7 7 10 7 7 10												Ħ
7 7 11 7 7 14 7 7 15												Ħ
7 7 16 7 7 17 7 7 18	i											
7 7 20 7 7 21 7 7 21 7 7 22												
7 7 23 7 7 24 7 8 1												
7 8 4 7 8 4 7 8 5												=
7 8 6 7 8 7 7 8 8												
7 8 9 7 8 10 7 8 11												Ħ
7 8 23 7 8 34 7 8 35 7 8 35	: :											
7 8 16 7 8 17 7 8 18	i i											
7 8 20 7 8 21 7 8 21 7 8 22												
7 8 23 7 8 24 7 9 1												
7 9 2 7 9 3 7 9 4 7 9 4						H		\blacksquare				=
7 9 6 7 9 7 7 9 7						Ħ						Ħ
7 9 9 9 7 7 9 10 7 9 11 7 9 11					H	Ħ		Ħ				Ħ
7 9 12 7 9 11 7 9 14 7 9 15						\blacksquare						\equiv
7 9 16 7 9 27 7 9 27 7 9 18												Ħ
7 9 19 7 9 20 7 9 21 7 9 21					H	+		\blacksquare				Ħ
7 9 23 7 9 23 7 9 24 7 10 1												Ħ
7 10 2 7 10 3 7 20 4 7 10 4					H	Ħ	ÞΈ	H	=	=		目
7 10 6 7 10 7 7 10 7												
7 10 9 7 10 10 10 7 10 11												
7 10 12 7 10 11 7 20 14												Ħ
7 10 16 7 20 17 7 10 18	: :											
7 10 19 29 7 10 20 7 10 21 7 10 21 7 10 21	i i											=
7 30 22 7 10 23 7 15 34 7 11 1												=
7 11 2 7 11 3 7 11 4												
7 11 5 7 11 6 7 11 7												
7 11 9 7 11 10 7 11 10 7 11 11												
7 11 12 7 11 13 7 11 14												
7 11 15 7 11 16 7 11 17 7 11 18												=
7 11 19 7 11 20 7 11 21												
7 11 22 7 11 23 7 11 24 7 12 1												Ħ
7 12 2 7 12 3 7 12 4												
7 12 5 7 12 6 7 12 7 7 12 8												Ħ
7 12 9 7 12 10 7 12 10 7 12 11	i i											=
7 12 12 12 7 11 11 11 11 11 11 11 11 11 11 11 11 1												
7 12 16 7 12 17 7 12 17 7 12 18												Ħ
7 12 19 7 12 20 7 12 21 21 21 21 21 21					H	H		Ħ				Ħ
7 12 23 7 12 24 7 12 7 12 14 7 14 15 1												Ħ
7 11 2 7 7 12 13 1 7 7 12 13 1 4 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1												\blacksquare
7 13 5 7 13 6 7 12 7 7 13 8						Ħ						\equiv
7 13 9 7 13 13 13 7 7 13 13 13 13 13 13 13 13 13 13 13 13 13												目
7 11 12 12 7 13 11 11 7 11 14 7 13 15						=						Ħ
7 11 16 7 12 17 7 11 18 17 7 11 18 18 7 12 17 7 11 18 18 7 19 19 19 19 19 19 19 19 19 19 19 19 19												
7 11 19 7 11 20 7 11 21 7 11 21 7 11 21 7 11 21 7 11 11 21 11 11 11 11 11 11 11 11 11 11					H	+		\blacksquare				Ħ
7 14 22 7 12 23 7 13 24 7 14 1												Ħ
7 34 2 7 34 3 7 34 3 7 34 4 7 34 5						+ = 1		Ħ				Ħ
7 14 5 7 14 6 7 14 7 7 14 7												Ħ
7 14 9 7 14 10 7 11 11						Ħ						Ħ
7 14 12 7 14 13 7 14 14 13					H	$+ \exists$		\Box				目
7 14 15 7 14 16 7 14 16 7 14 17 7 14 18												Ħ
7 14 17 7 14 18 7 14 19 7 14 20 7 14 20 7 14 21												
7 14 22 7 14 23 7 14 23 7 14 24					H	Ħ		Ħ	=	=	===	Ħ
7 15 2 7 15 2 7 15 3 7 15 4												Ħ
7 15 5 7 15 6 7 15 6												Ħ
7 15 8 7 7 15 9 7 15 10 7 7 15 10 15 11 11					H	Ħ		Ħ	=	=	\pm	Ħ
7 15 12 17 17 15 14						Ħ						Ħ
7 15 15 15 7 15 16 7 15 17												Ħ
7 15 18 7 15 19 7 15 19 7 15 20 7 15 20 7					H	HĪ		ĦĪ	=	=	#=	Ħ
7 15 22 7 15 23 7 15 23					Ħ							Ħ
7 16 1 7 16 2 7 16 2 7 16 3					H	H		Ħ				目
7 156 4 7 156 5 7 156 6 7 156 7						+		\Box				=
				-		 	 					

7 16 7 16 7 16 7 16 7 16 7 16 7 16 7 16	9 10 11					: [
7 16 7 16 7 16 7 16 7 16 7 16 7 16 7 16	12 11 14		:	- :		÷									
7 15 7 15 7 15 7 15 7 15 7 15 15 7 15 15 7	16 17 18														
7 16 7 16 7 16 7 16 16 17 16 18 18 18 18 18 18 18 18 18 18 18 18 18	19 20 21		:	- :		÷									
7 15 7 15 7 17 17 17 17 17 17 17 17 17 17 17 17 1	22 23 24														
7 17 7 17 7 17	2 3 4		:	:		:									
7 17 17 7 17 7 17 17 17 17 17	5 6 7		:			:									
7 17 7 17 7 17	9 20														
7 17 17 7 17 7 17 17 17 17 17 17 17 17 1	12 12 13					:									
7 17 7 17 7 17	15 16 17		:			: [
7 17 7 17 7 17	18 19 20		:	÷		÷									
7 17 7 17 7 17	22 23														
7 18 7 18 7 18 7 18 7 18 7 18 18 7 18 18 18 18 18 18 18 18 18 18 18 18 18	2		:			:									
7 18 7 18 7 18 7 18 7 18 18 18 18 18 18 18 18 18 18 18 18 18	4 5 6		:			:									
7 III 7 III 7 III	7 8 9					:									
7 H	11 12														
7 18 7 18 7 18 7 18 7 18 7 18 7	14 15 16		:			:									
7 18 7 18 7 18 7 18 7 18 18 18 18 18 18 18 18 18 18 18 18 18	17 18 19					- :									
7 III 7 III 7 III	20 21 22					ij									
7 38 7 29 7 29 7 29 7 29 7	24 1 2										=	=			=
7 19 7 19 7 19 7 19 7 19 7 19 7	1 4 5					:									
7 19 7 19 7 19 7 19	7					:				Ħ	=	\exists			
7 19 7 19 7 19 7 19 7 19 7 19 7 19 7 19	10 11 12									H		=		H	
7 19 7 19 7 19 7 19 7 19 7 19	13 14 15		:							H		=			
7 19 7 19 7 19 7 19 7 19 7 19	16 17 18		:			÷					#	=			
7 19 7 19 7 19 7 19 7 19 7 19 7 19 19 19 19 19 19 19 19 19 19 19 19 19	20 21 22					÷			F	Ħ	$=$ \mathbb{I}	=	\pm	Ħ	
7 19 7 19 7 19 7 19 7 20 7 20	23 24 1					Ė					=	=			\equiv
7 20 7 20 7 20 7 20 7 20 7	2 3 4		:			:									
7 20 7 20 7 20	5 6 7		:			- :									
7 20 7 20 7 20 7 20	9 10														
7 20 7 20 7 20	12 13 14														
7 20 7 20 7 20 7 20	15 16 17		:	:		:									
7 20 7 20 7 20	18 19 20		:			:									
7 20 7 20 7 20 7 20	21 22 23					- :									
7 21 7 21 7 21 7 21	1 2														
7 21 7 21 7 21	5 6		:			: [
7 21 7 21 7 21	7 8 9		:			:									
7 21 7 21 7 21 7 21	10 11 12														
7 21 7 21 7 21 7 21	14 15 16														
7 21 7 21 7 21	17 18 19		:			: [
7 21 7 21 7 21	20 21 22					÷									
7 21 7 22 7 22 7 22	24 1 2														
7 22 7 22 7 22	1 4 5		- :			: [
7 22 7 22 7 22	7		:			:									
7 22 7 22 7 22	10 11 12														
7 22 7 22 7 22	13 14 15		:	:		:									
7 22 7 22 7 22	16 17 18		:			:									
7 22 7 22 7 22 7 22	20 21 22										=	=			
7 22 7 22 7 22 7 22 7 23	23 24 1			- 1		:					\equiv	=			
7 21 7 22 7 22 7 21 7 21	1 4 5					i						=			
7 21 7 21	6 7 8														
7 22 23 7 22 23 7 23 24 7 22 24 7 22 24 7 22 24 7 22 24 7 22 24 7 22 24 7 22 24 7 22 24 7 2	9 10 11					:			Ė	Ħ					
7 21 7 21 7 22 7 22	12 13 14 15									H	=	#		H	
7 21 7 21 7 21 7 21	16 17 18			- 1		:									=
7 23 7 23 7 23 7 23 7 23 7 23 7 23	19 20 21			- 1		:									\equiv
7 21	22 23 24			÷		÷			F	Ħ	Ŧ	=	\pm	Ħ	
7 24 7 24 7 24 7 24 7 24 7 24 7 24 7 24	2 2 3 4										=	=			\equiv
7 24	5 6 7			- 1		:			L						=
7 24 7 24 7 24 7 24 7 24 7 24 7 24 7 24	9 10		:			:									
7 24 7 24 7 24 7 24 7 24 7 24 7 24 7	11 12 13										=	=			\equiv
7 24 7 24 7 24 7 24	15 16 17 18		:	- 1		÷									
7 24 7 24 7 24 7 24 7 24 7 24 7 24 7 24	18 19 20 21					:				Ħ		$=$ \mathbb{I}			
7 24 7 24	21 22 23 24					i						=			
7 25 7 25	1 2 3														
7 25 25 7 25 7 25 7 25 7 25 7 25 7 25 7	4 5 6		:	- 1		:									
7 25 7 25 7 25	7 8 9		:			:			Ė	Ħ					
7 25 7 25 7 25 7 25	10 11 12 13					i						=			
7 B B 7 B B	14 15 16									H		=			
7 25 7 25 7 25 7 25	17 18 19		:	- :		- :									
7 25 7 25 7 25	20 21 22 23					:				Ħ	\equiv	\exists			
7 25 7 25 7 26 7 26	24 1 2					:						=			
7 26 7 26 7 26 7 26	1 4 5										=	=			=
7 25	6								1	ш					_

7 25 7 7 25 8 7 25 9 7 25 9												=
7 26 11 7 26 12 7 26 12 7 26 14												
7 26 15 7 26 16 7 26 17				:								
7 26 18 7 26 19 7 25 20 7 25 21												=
7 26 22 7 26 23 7 26 24				:								
7 27 1 7 27 2 7 27 2 7 27 4												
7 27 5 7 27 6 7 27 7				:								
7 27 8 7 27 9 7 27 10				:								=
7 27 11 7 27 12 7 27 13 7 27 14												=
7 27 15 7 27 16 7 27 27 27				÷								
7 27 18 7 27 19 7 27 29 7 27 20												
7 27 22 7 27 23 7 27 24				:								=
7 28 1 7 28 2 7 28 3				-								
7 28 5 7 28 6 7 28 7												
7 28 8 7 28 9 7 28 10 7 28 10												
7 28 12 7 28 13 7 28 13 7 28 14												=
7 28 15 7 28 16 7 28 17		1 1		-								
7 28 18 7 28 19 7 28 20 7 28 20												
7 28 22 7 28 22 7 28 23 7 28 24								₽		=	_	\blacksquare
7 29 1 7 29 2 7 29 2 7 29 3												F
7 29 4 7 29 5 7 29 6 7 29 6												#
7 29 8 7 29 9 7 29 10												
7 29 11 7 29 12 7 29 12 7 29 11						$=$ \blacksquare	ΙĒ	H	ŧ			卣
7 29 14 7 29 15 7 29 15 7 29 16 7 29 17 7 29 17												=
7 29 18 7 29 29 20 7 29 20												
7 29 21 7 29 22 7 29 22 7 29 23								F				\equiv
, 28 24 7 30 1 7 30 2 7 30 2												
7 20 4 7 30 5 7 20 6				:								
7 30 8 7 30 9 7 30 9												=
7 30 11 7 30 12 7 30 12				-								
7 30 14 7 30 15 7 30 15 7 30 17												
7 30 18 7 30 19 7 30 19 7 30 20												
7 30 21 7 30 22 7 30 22		1 1		-								
7 32 24 7 31 1 7 31 2 7 31 3												=
7 31 4 7 31 5 7 31 5	: :			:								
7 21 7 7 21 8 7 21 9				:								
7 21 30 7 31 11 7 21 12 7 31 12												=
7 31 14 7 31 15 7 21 16				:								
7 31 17 7 31 18 7 31 29 7 31 20												=
7 31 21 7 31 22 7 31 22		i i		÷								
8 1 1 8 1 2 8 1 2												=
8 1 4 8 1 5 8 1 6				:								=
8 1 7 8 1 8 8 1 9				-								
8 1 12 8 1 12 8 1 13												
8 1 14 8 1 15 8 1 16				:								
8 1 18 8 1 18 8 1 29												
8 1 21 8 1 22 8 1 22								1				
8 2 1 8 2 2 8 2 2 8 2 3								#				\equiv
8 2 4 8 2 5 8 2 6												
8 2 7 8 2 8 8 2 9 8 2 10 8 2 10										=		\equiv
8 2 11 8 2 12 8 2 12 8 2 12 8 2 14												
8 2 14 8 2 15 8 2 16 8 2 16							$\pm \overline{}$		=	=	=	丰
8 2 17 8 2 18 8 2 19 8 2 20												=
8 2 21 8 2 22 8 2 22												
8 2 24 8 3 1 8 2 2 8 3 3 3												\pm
8 2 4 8 2 5 8 2 5												\equiv
8 3 7 8 3 8 8 3 9												
8 3 20 8 3 11 8 3 12 8 3 13								Ħ				\equiv
8 3 13 8 3 14 8 3 15 8 3 16												
8 3 15 8 3 15 8 3 17 8 3 17 8 3 18 8 3 18							=	ΗĒ	ΗĒ	=	=	丰
8 3 21 8 3 22 8 3 22								₽				Ħ
8 3 22 8 3 23 8 3 24 8 4 1 8 4 4 2								=		=		#
B 4 2 B 4 3 B 4 4 4 B 4 5 B 4 5												=
8 4 7 8 4 8 8 4 9				:								\equiv
8 4 20 8 4 11 8 4 12							E					ฮ
8 4 13 8 4 14 8 4 15 8 4 15												\equiv
8 4 17 8 4 18 8 4 19								₽				Ħ
B 4 20 B 4 21 B 4 22						$=$ \blacksquare	ΙĒ	H	ŧ			卣
8 4 24 8 5 1 8 5 2												
8 5 3 8 5 4 8 5 5				i								
			 		 		 	 _		 		

	5 6 5 7 5 8 5 9													
8	5 10 5 11 5 12	i i			:									
	5 14 5 15 5 16													
	5 17 5 18 5 19													
	5 20 5 21 5 22 5 22													
1	5 24 6 1 6 2	1 1			1									
B B	6 1 6 4 6 5	1 1			:									
1	6 6 7 6 8													
8 8	6 10 6 11 6 12	1 1			:									
8 8 8	6 13 6 14 6 15	1 1			:									
1	6 17 6 18 6 19													
8	6 20 6 21 6 22				:									
1	6 23 6 24 7 1													
8	7 1 7 4 7 5													
1	7 6 7 7 7 8													
	7 9 7 10 7 11 7 12													
1 1	7 13 7 14 7 15				:									
8 8	7 16 7 17 7 18				:									
8	7 19 7 20 7 21	1 1												
	7 22 7 23 7 24													=
8	8 2 8 3 8 4				:									
	8 6 8 7								Ħ	$=\mathbb{F}$	ŧ	ÞΕ		=
	8 9 8 10 8 11													\equiv
	8 12 8 13 8 14									1	Ŧ			
	8 15 8 16 8 17										Ŧ	ÞΕ		\equiv
	8 19 8 20 8 20													\equiv
	8 22 8 23 8 24													
8	9 1 9 2 9 3	1 1			:									
	9 5 9 5 9 6													=
8 8	9 8 9 9 9 10	- E - E			:									
1	9 11 9 12 9 13	1 1			:									
	9 16 9 15 9 16													
1	9 18 9 19 9 20				:									
8 8	9 21 9 22 9 23	1 1			:									
	10 1 10 2													
8	10 4 10 5 10 6	1 1			:									
1 1 1	10 7 10 8 10 9	1 1			:									
1	10 11 10 12 10 13													
8	10 14 10 15 10 16				1									
1	10 17 10 18 10 19													
8 8	10 21 10 22 10 23	1 1			:									
8 8	10 24 11 1 11 2	1 1			:									
1	11 4 11 5 11 6													=
1 1	11 7 11 8 11 9				:									
1	11 10 11 11 11 12													
1	11 14 11 14 11 15													=
1	11 17 11 18 11 19													
	11 20 11 21 11 22 11 71												\blacksquare	=
	11 23 11 24 12 1 12 2													
	12 1 12 4 12 5											H		
1	12 6 12 7 12 8 12 9 12 10													=
	12 11 12 12										₽			
	12 11 12 14 12 15											H		
	12 16 12 17 12 18 12 19 12 20													=
	12 21 12 22											世		
	12 23 12 24 13 1 13 2										丰	ÞΕ		\equiv
	13 3												H	=
	13 4 13 5 13 6 13 7 13 8				:									=
	13 9 13 10 13 11									1	1			
	13 12													=
	11 14 14 15 15 11 16 11 16 11 18 11 18 11 19													
	13 20 13 21													
	13 22 13 24						E				Ŧ	ÞΕ	Ħ	\equiv
	14 1 14 2 14 3 14 4 14 5													=
	14 6 14 7													
	14 B 14 9 14 10													
	24 11 14 12 14 11 14 11													\equiv
	14 14 14 15 14 16 14 17													\equiv
1	14 18 14 19 14 29 14 20 14 21													
	14 22										丰	ÞΕ		\equiv
	14 23 14 24 15 1 15 2 15 3													=
i	15 4								1					=

8 15 5 8 15 6 8 15 7 8 15 8													
8 15 9 8 15 10 8 15 11					1 1								
8 15 12 8 15 13 8 25 14 8 15 14													=
8 15 16 8 15 17 8 15 17													
8 15 29 8 15 20 8 15 21					1 1								
8 15 23 8 15 34 8 16 1					1 1								
8 16 2 8 16 3 8 16 4					1 1								
8 15 5 8 16 6 8 16 7													=
8 15 9 8 16 10 8 16 11	i i	: :			1 1								
8 16 12 8 16 13 8 16 14		i i											
8 15 16 16 17 8 18 16 18													
8 16 29 8 36 20 8 36 21					1 1								
8 15 24 8 15 24 8 17 1													
8 27 2 8 17 3 8 17 4	i i				1 1								
8 177 5 8 177 6 8 177 7													=
8 17 9 8 17 10 8 17 11	i i	: :			1 1								
8 17 12 8 17 13 8 17 14		i i											
8 17 16 8 17 17 8 17 17 8 17 18													
8 17 19 8 17 20 8 17 21													
8 17 22 8 17 23 8 17 24 8 18 18 *													\mp
8 18 2 8 18 3 1 18 4													Ħ
8 18 5 8 18 6 8 18 7							H						ฮ
8 18 9 8 18 10 10 8 18 11													\equiv
8 18 12 8 18 23 8 18 34													Ŧ
8 18 15 8 18 16 8 18 17 9 18 17										F			#
8 18 19 30 8 18 20 8 18 21													\blacksquare
8 18 22 8 18 23 8 18 24 8 18 24						$=$ \mp				E		=	丰
8 19 2 8 19 3 8 19 3													
8 19 5 8 29 6 8 19 7	i i				1 1								
8 19 8 8 19 9 8 19 10													=
8 19 12 8 19 13 8 19 14	i i	: :			1 1								
8 19 15 8 19 16 8 19 17		i											
8 19 18 8 19 19 19 8 19 20													=
8 19 22 8 19 23 8 29 24	i i												
8 20 1 8 20 2 8 20 3 9 20 4													
8 20 5 8 20 6 8 20 7													
8 20 8 8 20 9 8 20 10					1 1								
8 20 11 8 20 12 8 20 13 8 20 14													=
8 20 15 8 20 16 8 20 17													
8 20 18 8 20 19 8 20 20 21													=
8 20 22 8 20 23 8 20 24	i i												
8 21 1 8 21 2 8 21 3 9 21 4													
8 21 5 8 21 6 8 21 7					1 1								
8 21 8 8 21 9 8 21 10													
8 21 12 8 21 13 8 21 14													=
8 21 15 8 21 16 8 21 17							$\pm \Box$			Ė	Ė		丰
8 21 18 8 21 19 8 21 20 8 21 20													\blacksquare
8 21 22 8 21 23 8 21 24						1				Ė	Ė		丰
8 22 1 8 22 2 8 22 3 8 22 4						_+						_	\blacksquare
8 22 5 8 22 6 8 22 7 8 22 8 8 22 8													
8 22 7 8 22 8 8 22 9 8 22 9 8 22 30 8 22 11													\blacksquare
8 22 12 8 22 13 8 22 13 8 22 14													Ħ
8 22 15 8 22 16 8 22 17 8 22 17						$=$ \mathbb{F}			ΗĒ				텤
# 22 18 8 22 19 8 8 22 20 20 8 22 21													\blacksquare
8 22 22 8 22 22 8 22 23 8 22 23 8 22 34 8 22 34													\equiv
8 23 1 8 22 2 8 22 3 8 21 4										H			\equiv
8 23 5 8 23 6 8 23 7													Ħ
8 22 8 8 22 9 8 22 10													ฮ
8 22 11 8 22 12 8 22 12 8 22 13						-							#
8 23 13 8 22 14 8 22 15 8 21 15 8 22 15 8 22 17													\blacksquare
8 22 18 8 22 29 8 22 20 8 22 20						$=$ \mathbb{F}	ΙĪ		=	E	Ē		丰
8 23 21 8 22 22 8 23 22 8 23 24													\equiv
8 23 24 8 34 1 8 24 2 8 24 2 8 24 3													\blacksquare
8 24 4 8 24 5 8 24 6 8 24 6										E			丰
8 24 8 8 24 9 8 24 10						_+							\blacksquare
8 24 11 8 24 12 8 24 12													刲
8 24 14 8 24 15 8 24 16 8 24 16									==	Ė	Ē		Ħ
8 24 18 8 24 29 8 24 29						_							
8 24 21 8 24 22 8 24 22													Ŧ
8 24 24 8 25 1 8 25 2 8 25 2													=
				_	-		 	 	x				

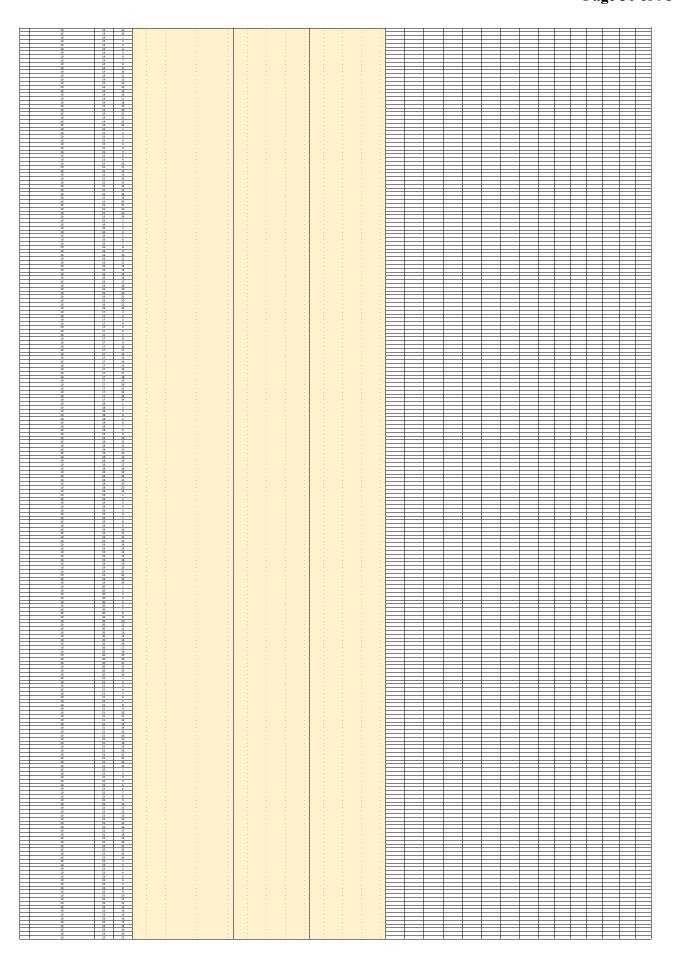
	25 4 25 5 25 6 25 7														
1	25 8 25 9 25 10	1 1	:												
	25 11 25 12 25 11														
8	25 15 25 16 25 17	1 1	- :												
	25 18 25 19 25 20														
	25 22 25 23 25 24	1 1	:		:										===
	26 1 26 2 26 3	1 1													
	26 4 26 5 26 6 36 7														#
	26 B 26 9 26 10	1 1	:		:										
	26 11 26 12 26 13	1 1	:												
	26 15 26 16 26 17														===
	26 18 26 19 26 20				:										
	26 21 26 22 26 23 36 34														
	27 1 27 2 27 2	1 1	:		:										===
	27 4 27 5 27 6	1 1													
	27 8 27 9 27 10														#
	27 11 27 12 27 11		:		1										
	27 14 27 15 27 16 27 17														==
	27 18 27 19 27 20														
	27 21 27 22 27 23									Ħ			E		#
	28 1 28 2 28 2														=
	28 4 28 5 28 6		:												
	28 7 28 8 28 9 28 9							=		H	Ŧ		Ė		#
	10 28 11 28 12 28 13									H					\equiv
	28 14 28 15 28 16		:												
	28 17 28 18 28 19							$=$ \mp		Ħ		ŧ	Ė	Ħ	貫
	28 21 28 22 28 22														===
	28 24 29 1 29 2		- :		:										
	29 1 29 4 29 5														
	29 7 29 8 29 9	1 1	:		:										
	29 10 29 11 29 12	1 1	:		- :										
	29 14 29 14 29 15 29 16														#
1	29 17 29 18 29 19	1 1	:		:										
	29 20 29 21 29 22	1 1													
	29 24 29 24 30 1 30 2														#
	30 3 30 4 30 5	1 1	:												
	30 6 30 7 30 8	1 1	:												
	30 10 30 11 30 12														===
	30 11 30 14 30 15		- :		:										
	30 16 30 17 30 18 30 19														#
1	30 20 30 21 30 22	1 1	- :		- :										
	30 23 30 24 31 1		- :												
	31 3 31 4 31 5														===
	31 6 31 7 31 8	1 1	- :		:										
	31 9 31 10 31 11														
	31 11 31 14 31 15														
	21 26 21 17 21 18		:							Ħ		Ī	E		目
	31 20 31 21 31 22									Ħ			F	EF	尹
8 8 9	31 23 31 24 1 1	i i													\blacksquare
9 9	1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1														尹
9 9 9	1 5 1 6 1 7 1 8									H			Ė		目
9 9 9	1 9 1 10 1 11 1 12														=
9 9	1 11		:												〓
9 9 9	1 15 1 16 1 17 1 18 1 19							$=\mathbb{T}$	=	H		ΙĪ	E	ÞΤ	#1
9 9										H					丰
9 9	1 21 1 22 1 23 1 24 2 1		÷		- :							E			
9 9 9	2 2 2 1 2 4							=		H	Ŧ		Ė		#
9 9 9	2 5 2 6 2 7 2 8									H	=				丰
9 9	2 9 2 10 2 11														\mp
9 9 9	2 12 2 13 2 14 2 15 2 16									=					\equiv
9 9	2 17				- :					H	1		E		
9 9	2 19 2 20 2 21 2 22		:							Ħ		Ŧ	E	H	丰
9 9 9	2 22 2 23 2 24 3 1									$oxed{oxed}}}}}}}}}}}}}}}}}}} $			F		#
9 9	1 2 2 3 3 3 4									H					丰
9 9	3 5 3 6 3 7		:												囯
9 9 9	4 8 1 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2									H					#
9 9	1 12 3 13 1 14									Ħ					#
9 9	1 15 1 16 1 17											E			
9 9	4 18 3 19 3 20 1									H					\equiv
	2 22 23 24 24														\equiv
9	4 1 4 2		1	: :			\pm			$\perp \equiv$	$-\mathbf{I}$		H		=

														_
9 4 4 9 4 4 9 4 5 9 4 6														1
9 4 8 9 4 9 9 4 20														Ξ
9 4 11 9 4 12 9 4 14														3
9 4 15 9 4 16 9 4 17	:		- :											Ī
9 4 19 9 4 20 9 4 20														₫
9 4 22 9 4 23 9 4 24 9 5 1														=
9 5 2 9 5 3 9 5 4	:		:											₫
9 5 5 9 5 6 9 5 7 9 5 8														₫
9 5 9 9 5 10 9 5 11 9 5 12														Ξ
9 5 12 9 5 14 9 5 15	:		:											Ξ
9 5 12 9 5 17 9 5 18 9 5 19														₫
9 5 20 9 5 21 9 5 22 9 5 22														Ξ
9 5 24 9 6 1 9 6 2	:													∄
9 6 1 9 6 4 9 6 5 9 6 6														i
9 6 7 9 6 8 9 6 9	:		:											3
9 6 11 9 6 12 9 6 12														₫
9 6 14 9 6 15 9 6 16														₫
9 6 18 9 6 19 9 6 20	:		- :											∃
9 6 21 9 6 22 9 6 23 9 6 24													_	₫
9 7 1 9 7 2 9 7 2 9 7 3														1
9 7 5 9 7 6 9 7 7														∄
9 7 8 9 7 9 9 7 10 9 7 10							<u> </u>	E				F		∄
9 7 12 9 7 13 9 7 13 9 7 34	:		:											∄
9 7 15 9 7 17 9 7 17 9 7 18														∄
9 7 19 9 7 20 9 7 21	:		- :											∄
9 7 22 9 7 24 9 7 24 9 8 1														∄
9 8 2 9 8 3 9 8 4														Ξ
9 8 6 9 8 7 9 8 8	:		- :											Ξ
9 8 20 9 8 11 9 8 11 9 8 12														╡
9 8 11 9 8 14 9 8 15	:		:											3
9 8 17 9 8 18 9 8 19	:		:											3
9 8 20 9 8 21 9 8 22 9 8 23														=
9 8 24 9 9 1 9 9 2	:		:											Ξ
9 9 1 9 9 4 9 9 9 6														Ξ
9 9 7 9 9 8 9 9 9 9														3
9 9 11 9 9 12 9 9 11	:		:											∃
9 9 14 9 9 15 9 9 17														=
9 9 18 9 9 19 9 9 20	:		- :											Ξ
9 9 22 9 9 23 9 9 24	:													∄
9 10 1 9 10 2 9 10 3 9 10 4														=
9 10 5 9 10 6 9 10 7	:		- :											Ξ
9 10 8 9 10 9 9 10 10 10 9 10 11														₫
9 10 12 9 10 13 9 10 14 9 10 15														Ξ
9 10 16 9 10 17 9 10 17 9 10 18	:		:											∄
9 10 19 9 10 20 9 10 21 9 10 21														1
9 10 23 9 10 24 9 11 1 1 9 11 2														1
9 11 2 0 11 3 0 11 3 0 11 4 0 21 4 0 21 5 0 21 5 0 21 5			- 1											∄
9 11 6 9 11 7 9 12 8							<u> </u>	E				F		∄
9 11 10 9 11 11 9 11 12 9 11 12 9 11 13					Ħ									╡
9 11 14 9 11 14 9 11 15 9 11 15											=	1		∄
9 11 17 9 11 18 9 11 19 9 11 20					Ħ		▐	F		Ħ	Ŧ	Ŧ	Ħ	╡
9 11 20 9 11 21 9 11 22 9 11 22 9 11 23	:													₫
9 11 24 9 12 1 9 12 2 9 12 2											_		_	∄
9 12 4 9 12 5 9 12 6 9 12 7					H	\equiv					_	1		╡
9 12 8 9 12 9 9 12 10														╡
9 12 11 9 12 12 9 12 12 9 12 13 9 12 14 9 12 15							<u> </u>	E				F		∄
9 12 16 9 12 17	:										1	1		1
9 12 18 9 12 19 9 12 20 9 12 21														∄
9 12 22 9 12 23 9 12 23 9 12 24			-								\equiv	=		1
9 11 1 9 12 2 9 13 3 9 13 4								E			#	1		∄
9 13 5 9 13 6 9 13 7 9 13 7					Ħ						7	1		╡
9 13 9 9 13 10 9 13 10														∄
9 13 12 9 13 13 9 13 14 9 13 14					H			Ė			7	1		╡
9 11 16 9 12 17 9 12 18														₫
9 13 19 9 13 19 9 13 19 19 11 11 11 11 11 11 11 11 11 11 11					Ħ						7	1		╡
9 13 23 9 13 24 9 14 1			i i	i i										∄

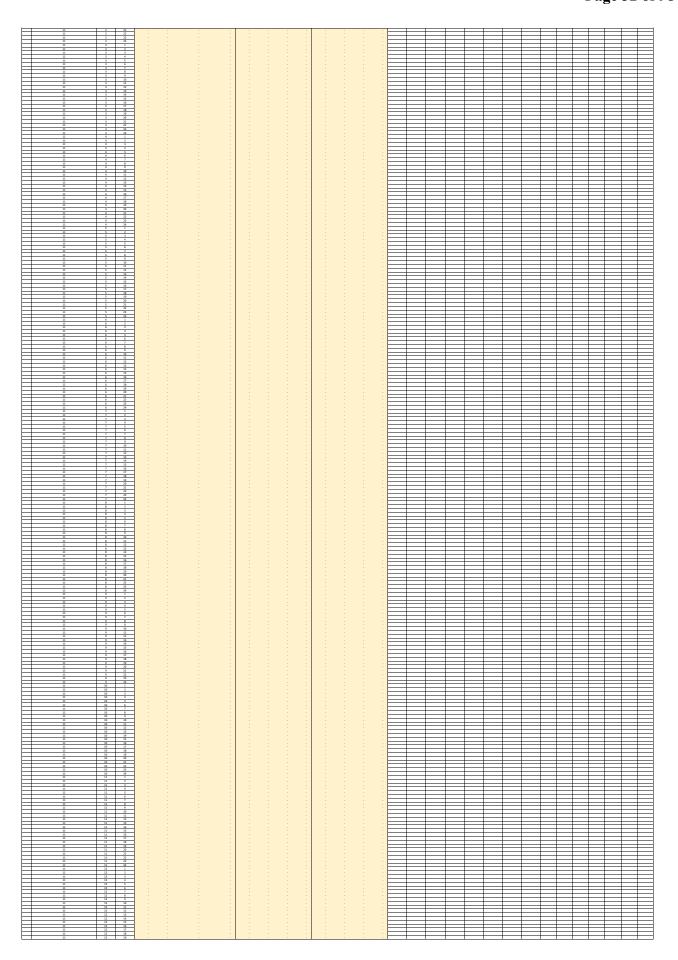
<u> </u>														
9 14 9 14 9 14 9 14	2 3 4 5				1									
9 14 9 14 9 14	6 7 8				1	:								
9 14 9 34 9 14	9 10 11													
9 M 9 M 9 M	13 14 15				:	:								
9 14 9 14 9 14	16 17 18				:	:								
9 14 9 14 9 14	20 21 22													
9 14 9 14 9 25	23 24 1				:	:								
9 15 9 15 9 15	3				1	:								
9 B 9 B 9 B	5 6 7													
9 15 9 15 9 15	9 20 11				:	:								
9 15 9 15 9 15	12 13 14				1	:								
9 B 9 B	16 17													
9 15 9 15 9 15	19 20 21					:								
9 15 9 15 0 15	22 23 24				-	:								
9 15 9 16 9 16	2 3					- 1								
9 16 9 16 9 16	5 6 7													
9 15 9 15 9 15	9 30				:	:								
9 16 9 16 9 16	11 12 13				1	:								
9 15 9 15 9 16	15 16													
9 15 9 15 9 16	18 19 20				:					Ħ				
9 16 9 16 9 16 9 16	21 22 23		1 1			-					7	Ŧ		=
9 15 9 17 9 17	1 2 2					:				H	=	+	=	=
9 17 9 17 9 17 9 17	4 5 6				- :									
9 17 9 17 9 17	7 II 9					- :				Ħ	1	1		\equiv
9 17 9 17 9 17	10 11 12				1	-				H		Ŧ		
9 17 9 17 9 17 9 17	14 14 15 16									H	#	#		=
9 17 9 17 9 17 9 17	17 18 19		1 1		:	:				Eŧ				=
9 17 9 27 9 17	20 21 22		1 1		- :	:								
9 17 9 17 9 18	23 24 1					- 1								
9 18 9 18	3 4 5													
9 11 9 11 9 11	6 7 8				:	:								
9 18 9 18 9 28	9 10 11				:	:								
9 11 9 11 9 11	12 13 14					- 1								
9 18 9 18 9 18	16 17 18													
9 11 9 11 9 11	19 20 21				:	:								
9 18 9 18 9 18 9 18 9 18 9 18 9 18 9 18	22 23 24				:	:								
9 19 9 19 9 19	2 3													
9 19 9 19 9 19 9 19	5 6 7				1	:								
9 19 9 19 9 19	8 9 20					:								
9 19 9 19 9 19	12 12 13													
9 19 9 19 9 19 19	15 16 17				:	:								
9 19 9 19 9 19	18 19 20					:								
9 29 9 19 9 19	22 23													
9 20 9 20 9 20	1 2 3													
9 20 9 20 9 20	4 5 6				:	:								
9 20 9 20 9 20	7 8 9					- 1								
9 20 9 20 9 20 9 20	11 12 13													
9 20 9 20 9 20	14 15 16					:			Ė					Ī
9 20 9 20 9 20 9 20	17 18 19 20									H	#	#		=
9 25 9 20 9 20 9 20	21 22 23		: :		1	:						⇟		
9 20 9 21 9 21	24 1 2				-	:			Ė	Ħ	7	1		=
9 21 9 22 9 21 9 22 9 22	4 5 6									H	#	#		=
9 21 9 21 9 21 9 21	7 8 9					:						1		
9 21 9 21 9 21 9 21	10 11 12				:	:			ΙĪ	H		£	▐	=
9 21 9 21 9 21 9 21	13 14 15 16 17									H	#	#		
9 21 9 21 9 21 9 21 9 21	15 17 18 19 20				- :					Eŧ				=
9 21 9 21 9 21	20 21 22 22 23				:	:								=
9 21 9 21 9 22 9 22	23 24 1									H		ŧ		
9 22 9 22 9 22 9 22	4													
9 22 9 22 9 22	6 7 8		1 1		1	-								=
9 22 9 22 9 22	9 10 11					:	=		Ι	ÞĪ		£	▐	1
9 22 9 22 9 22 9 22 9 22 9 22	10 11 12 13 14 15									H	#	#		=
9 22 9 22 9 22	16 17 18				:					Ħ			╧	
9 22 9 22 9 22	29		1 1		1				▐▔	H		\blacksquare		=
9 22 9 22 9 22 9 22 9 23	21 22 23 24 1					:	=		ΙĪ	Ħ		Ŧ	⇟	=
9 21 9 21 9 21 9 21	2 2 4						_			H	#	\pm		=
9 21 9 21 9 21 9 21	5 6 7		1 1		:	-								=
9 23 9 23 9 23	g 9 10		1 1		1									=
9 21 9 21 9 21 9 21	11 12 13					- 1			ΙĪ	HĪ		£	Ŧ	=
9 21 9 21 9 21 9 21	14 15 16 17									H	#	#		=
9 21 9 23 9 23	19 20				- :	:						#		
9 21 9 21 9 22 9 22 9 22	21 22 23								E	Ħ	1	1		Ξ
9 23	24		- 1	-	1		1.	 	 	—Т				

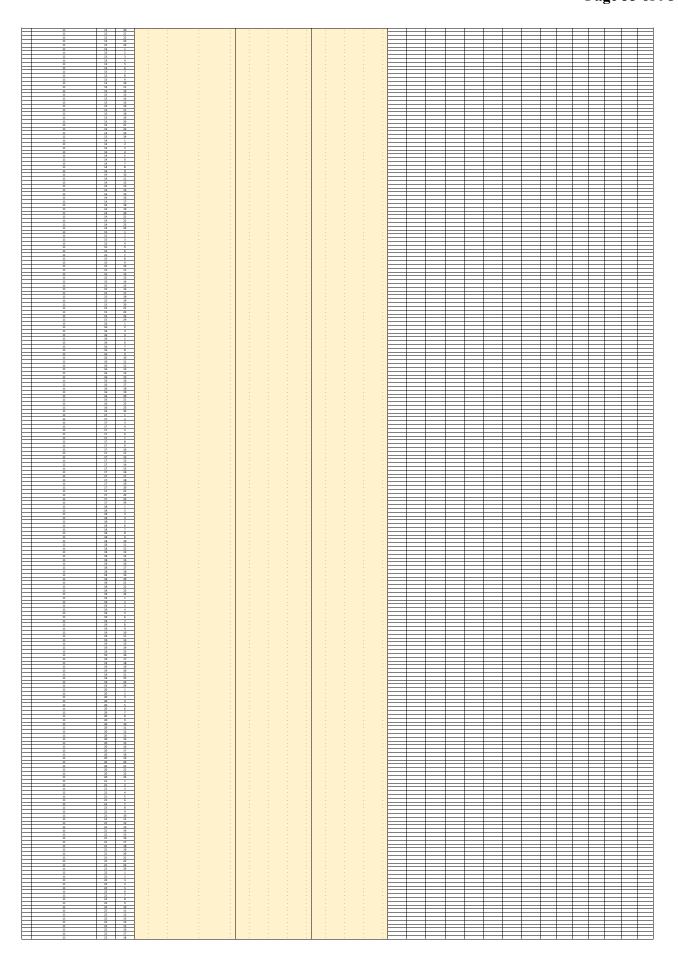
9 24 1 9 24 2 9 24 3		- :	1 1	-	1 1	1 1						
9 24 5 9 24 6 9 24 7	1 1											Ħ
9 24 II 9 34 9 9 24 10												
9 24 11 9 24 12 9 24 12 9 24 14												\equiv
9 24 15 9 24 16 9 24 17	i i											
9 24 18 9 24 19 9 24 20												=
9 24 22 9 24 22 9 24 23 9 24 24												Ħ
9 25 1 9 25 2 9 25 3												
9 25 4 9 25 5 9 25 6												=
9 25 8 9 25 9 9 25 10	1 1											#
9 25 11 9 25 12 9 25 11												
9 25 15 9 25 15 9 25 16 9 27 16												
9 25 18 9 25 19 9 25 20												\equiv
9 25 21 9 25 22 9 25 23												\pm
9 25 1 9 25 1 9 25 2 0 25 2												
9 26 4 9 26 5 9 26 6				- :								\equiv
9 26 7 9 26 8 9 26 9												=
9 25 11 9 25 11 9 26 12												
9 25 14 9 26 15 9 26 15												丰
9 25 17 9 25 18 9 25 19							1					
9 26 20 9 26 21 9 25 22 9 26 23												=
9 25 24 9 27 1 9 27 2												Ħ
9 27 3 9 27 4 9 27 5												
9 27 6 9 27 7 9 27 8							$=\mathbb{I}$		H	Ē		目
9 27 9 9 27 10 9 27 11 9 27 11												Ħ
9 27 11 9 27 12 9 27 14 9 27 15												
9 27 16 9 27 17 9 27 18							=		$+ \equiv$	E		Ħ
9 27 19 9 27 20 9 27 21 9 27 21												Ħ
9 27 23 9 27 24 9 28 1				- :								\equiv
9 28 2 9 28 3 9 28 4												=
9 28 5 9 28 6 9 28 7												=
9 28 9 9 28 10 9 28 11												=
9 28 12 9 28 13 9 28 14												
9 28 15 9 28 16 9 28 17 0 31 16												=
9 28 19 9 28 20 9 28 20 9 28 21												Ħ
9 28 22 9 28 23 9 28 24	1 1											\equiv
9 29 1 9 29 2 9 29 3												\equiv
9 23 5 9 29 6 9 20 7												Ħ
9 29 8 9 29 9 9 29 10												
9 29 11 9 29 12 9 29 13												\equiv
9 29 15 9 29 16 9 29 17 9 29 17												\equiv
9 29 18 9 29 19 9 23 20												
9 29 21 9 29 22 9 29 23 0 29 34												Ħ
9 20 1 9 20 2 9 30 3												Ħ
9 30 4 9 30 5 9 30 6												
9 30 8 9 30 8 9 30 9 9 30 10												Ħ
9 30 11 9 30 12 9 30 12	1 1											
9 30 14 9 30 15 9 30 16												Ħ
9 30 18 9 30 18 9 30 19												Ħ
9 30 21 9 30 22 9 30 22 9 30 30 31												\blacksquare
9 30 34 10 1 1 1 10 10 1 2 10 10 1 1 2												Ħ
10 2 2 10 1 2 10 1 4 10 1 5 10 1 5				-								Ħ
10 1 7 10 1 8 10 1 9				-								f
10 1 20 10 1 11 10 1 12 10 1 12												\equiv
10 1 14 10 1 15 10 1 15												Ħ
10 1 17 10 1 18 10 1 19												目
10 1 20 10 1 21 10 1 22 10 1 22												Ħ
10 1 24 1 10 10 1 10 10 10 10 10 10 10 10 10 10												\equiv
10 2 3 10 2 4 10 2 5												Ħ
10 2 6 10 2 7 10 2 8							=					Ħ
10 2 9 10 2 10 10 2 11 10 2 11 10 2 12 10 2 12												\blacksquare
10 2 14 10 2 15							1				ᆂ	
10 2 16 10 2 17 10 2 18 10 2 19												\equiv
10 2 19 10 2 20 10 2 20 10 2 21 10 2 22 10 2 22 10 2 23 10 2 23												Ħ
10 2 23 10 2 23 10 2 34 10 3 1												Ħ
10 3 2 10 3 3 10 3 4												\equiv
10 3 5 10 3 6 10 3 7												Ħ
10 2 2 10 10 10 2 11												Ħ
10 3 12 10 3 12 10 3 13 10 1 14				-								\equiv
10 3 15 10 1 16 10 3 17							1					
10 3 18 10 3 19 10 3 20									H	Ē		Ħ
10 3 21 10 3 22 10 3 23												\equiv

10 10 10 10	1 24 4 1 4 2 4 3													
10 10 10	4 4 5 4 6	1 1			:	: [
10 10 10	4 8 4 9 4 10													
10 10 10	4 11 4 12 4 13	1 1			:	: [
10 10 10	4 14 4 15 4 16 4 17													
10 10 10	4 18 4 19 4 20	1 1			:	- :								
10 10 10	4 21 4 22 4 23	1 1			:	- :								
10 10 10	4 34 5 1 5 2 5 3													=
10 10 10	5 4 5 5 5 6	1 1			:	:								
10 10 10	5 7 5 8 5 9	1 1			:	÷								
10 10 10	5 11 5 12 5 13													
10 10 10	5 14 5 15 5 16	1 1				: [
10 10 10	5 17 5 18 5 19													
10 10 10	5 21 5 22 5 23	1 1			:	- :								
10 10 10	5 24 6 1 6 2	1 1			:									
10 10 10	6 1 6 4 6 5													
10 10 10	6 7 6 8 6 9	1 1			:									
10 10 10	6 10 6 11 6 12				:									
10 10 10	6 11 6 14 6 15					1						=		
10 10 10	6 17 6 18 6 19											=		
10 10 10	6 20 6 21 6 22										\equiv	=		
10 10 10	6 23 6 24 7 1 7 2					i						=		
10 10 10	7 3 7 4 7 5													
10 10 10	7 6 7 7 7 8													
10 10 10	7 9 7 10 7 11 7 11											=		
10 10 10 10	7 13 7 14 7 15											=		
10 10 10	7 16 7 17 7 18				÷									
10 10 10	7 19 7 20 7 21	1 1												
10 10 10	7 23 7 24 8 1													
10 10 10	8 2 8 3 8 4	- E - E			:	: [
10 10 10	8 6 8 7	1 1			:									
10 10 10	8 9 8 10 8 11													
10 10 10	8 12 8 13 8 14	1 1			:	: [
10 10 10	8 15 8 16 8 17													
10 10 10	8 19 8 20 8 21	1 1			:	: [
10 10 10	8 22 8 23 8 24													
10 10 10	9 2 9 3 9 4	1 1			:	- :								
10 10 10	9 5 9 6 9 7				:									
10 10 10	9 9 9 10 9 11													
10 10 10	9 12 9 13 9 14	1 1				: [
10 10 10	9 15 9 16 9 17													
10 10 10	9 19 9 20 9 21	1 1			:	:								
10 10 10	9 22 9 23 9 24	1 1			:	: [
10 10 10	10 1 10 2 10 3 10 4													=
10 10 10	10 5 10 6 10 7	- E - E			:	: [
10 10 10	10 8 10 9 10 10	1 1												
10 10 10	10 12 10 13 10 14											=		
10 10 10	10 15 10 16 10 17 10 18													
10 10 10 10	10 18 10 19 10 20 10 21										=	=		
10 10 10	10 22 10 23 10 24				:									
10 10 10	11 1 11 2 11 3 11 4					: [ΙĪ	Ħ	Ŧ	=T		
10 10 10	11 4 11 5 11 6 11 7										=	=		
10 10 10	11 8 11 9 11 10					:								
10 10 10	11 11 11 12 11 13 11 14 11 15						E		ΙĪ	Ħ	Ŧ	Ŧ	Ħ	
10 10 10 10											=	=		
10 10 10	11 17 11 18 11 19 11 20					1								
10 10 10	11 21 11 22 11 23 11 24 12 1				i				▐▔	Ħ	Ŧ	Ŧ	Ħ	
10 10 10														
10 10 10	12 1 12 4 12 5 12 6													
10 10 10	12 7 12 8 12 9 12 10													
10 10 10	12 8 12 9 12 10 12 11 12 11 12 12 12 12 12 13 12 14 12 15				- 1					H		=		
10 10 10	12 14 12 15 12 16				- :									
10 10 10	12 16 12 17 12 18 12 19					: [ΙĪ	Ħ	Ŧ	=T		
10 10 10 10	12 19 12 20 12 20 12 21 12 22 12 22 12 23									H	=	=	H	
10 10 10	13 1				- :							_		
10 10 10	13 3 11 4 11 5				- 1									
10 10 10	13 6 13 7 13 8						E		ΙĪ	Ħ	Ŧ	Ŧ	Ħ	
10 10 10	13 9 13 10 13 11 13 12										=	=		
10 10 10	11 12 11 11 11 14 11 15					1								
10 10 10	13 16 13 17				i				▐▔	Ħ	Ŧ	Ŧ	Ħ	
10 10 10	13 19 13 20 13 21 13 21										=	=		



10 10 10	23 22 23 23 23 24								▤
10 10 10	24 2 24 3 24 4	1 1	:						=
10 10 10	24 5 24 6 24 7		:						
10 10 10	24 8 24 9 24 10 24 11								=
10 10 10	24 12 24 13 24 14								
10 10 10	24 15 24 16 24 17		:						
10 10 10 10	24 18 24 19 24 20 24 21								=
10 10 10	24 22 24 23 24 24	1 1	:						≣
10 10 10	25 1 25 2 25 3		:						=
10 10 10	25 5 25 6 25 7								=
10 10 10	25 B 25 9 25 10	i i	:						▤
10 10 10	25 11 25 12 25 13								=
10 10 10	25 15 25 16 25 17	1 1	:						╡
10 10 10	25 18 25 19 25 20	1 1	:						=
10 10 10	25 22 25 23 25 24								=
10 10 10	26 1 26 2 26 3	1 1	:						▤
10 10 10	26 4 26 5 26 6		-						
10 10 10	26 8 26 9 26 10								=
10 10 10	26 11 26 12 26 13								▤
10 10 10	26 14 26 15 26 16 26 16							H	=
10 10 10	26 18 26 19 26 20								\equiv
10 10 10	26 21 26 22 26 23							H	∄
10 10 10 10	27 1 27 2 27 2 27 1								=
10 10 10	27 4 27 5 27 6							Ħ	∄
10 10	27 7 27 8 27 9								∄
10 10 10 10	27 11 27 12 27 12 27 13								=
10 10 10	27 14 27 15 27 16							Ħ	\equiv
10 10 10	27 17 27 18 27 19		-						=
10 10 10	27 21 27 22 27 22 27 23								=
10 10 10	27 24 28 1 28 2		:						▤
10 10 10	28 3 28 4 28 5		:						=
10 10 10	28 7 28 8 28 9								=
10 10 10	28 10 28 11 28 12								▤
10 10 10	28 13 28 14 28 15								=
10 10 10	28 17 28 18 28 19	1 1	:						
10 10 10	28 20 28 21 28 22		:						
10 10 10 10	28 24 28 24 29 1 20 2								=
10 10 10	29 3 29 4 29 5	1 1	:						
10 10 10	29 6 29 7 29 8		-						=
10 10 10	29 9 29 10 29 11 29 12								=
10 10 10	29 13 29 14 29 15		:						
10 10 10	29 16 29 17 29 18 29 10								=
10 10 10	29 20 29 21 29 22								=
10 10	29 23 29 24 30 1		:						
10 10 10	30 1 30 4 30 5								=
10 10 10	30 6 30 7 30 8	1 1	:						=
10 10 10	30 9 30 10 30 11							H	∄
10 10 10 10	30 12 30 13 30 14 30 15								=
10 10 10	30 16 30 17 30 18 30 19 30 20 30 20 30 21								\equiv
10 10 10 10	30 19 30 20 30 21 30 22							H	=
10 10 10	30 22 30 23 30 24 31 1		1					H	\equiv
10 10 10	31 2 31 3 31 4 31 4							ÞΤ	=
10 10 10	31 5 31 6 31 7 31 8								#
10 10 10	21 9 21 10 21 11 21 11 21 12 21 12								▤
10 10 10									=
10 10 10 10	21 15 21 16 21 17 21 18 21 19								=
10 10 10	31 19 31 20 31 21		:						▤
10 10 10	31 20 31 21 31 22 31 22 31 23 31 23 31 24 1 1 2							H	=
11 11 11	1 2 1 3 1 4								\equiv
11 11 11	1 5 1 6 1 7							H	1
11 11 11	1 7 1 8 1 9 1 10 1 11								=
11 11 11	1 11 1 12 1 13 1 14 1 15 1 15		-					Ħ	\equiv
11 11	1 15 1 16 1 17								ᆗ
11 11 11	1 17 1 18 1 19 1 20 1 21 1 22							Ħ	=
11 11 11	1 21 1 22 1 23 1 24								=
11 11	2 1 2 2 2 3		-					ШF	∄
11 11 11	2 4 2 5 2 6							Ħ	₫
11 11 11	2 7 2 8 2 9 2 sh								=
11 11 11	2 11 2 12 2 12 2 13								=
11 11 11	2 14 2 15 2 16							Eŧ	▋
11 11 11	2 17 2 18 2 29							Ħ	▤
- 11	2 20		1					 $\perp = \perp$	

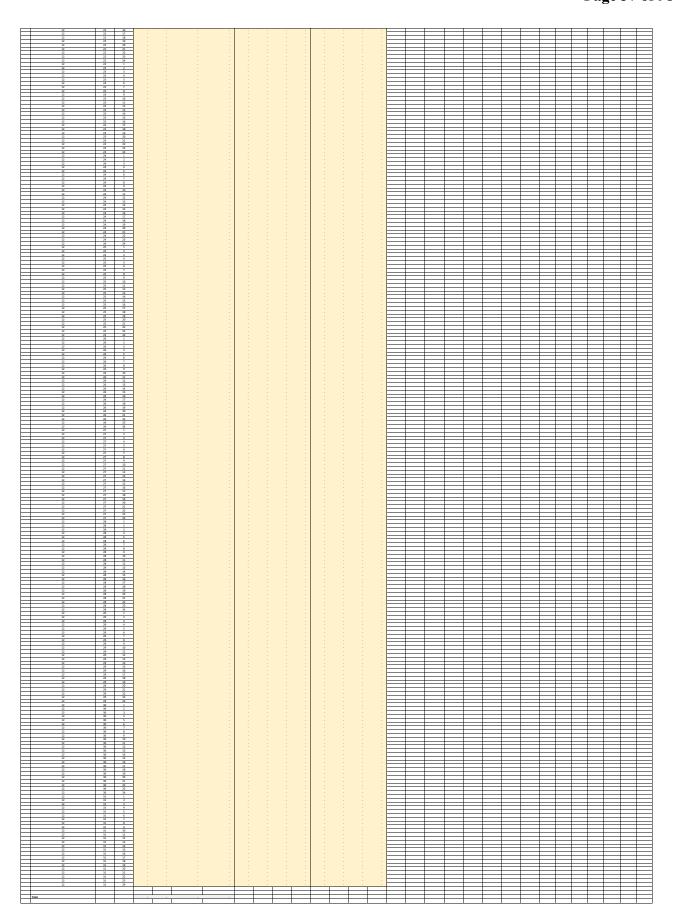




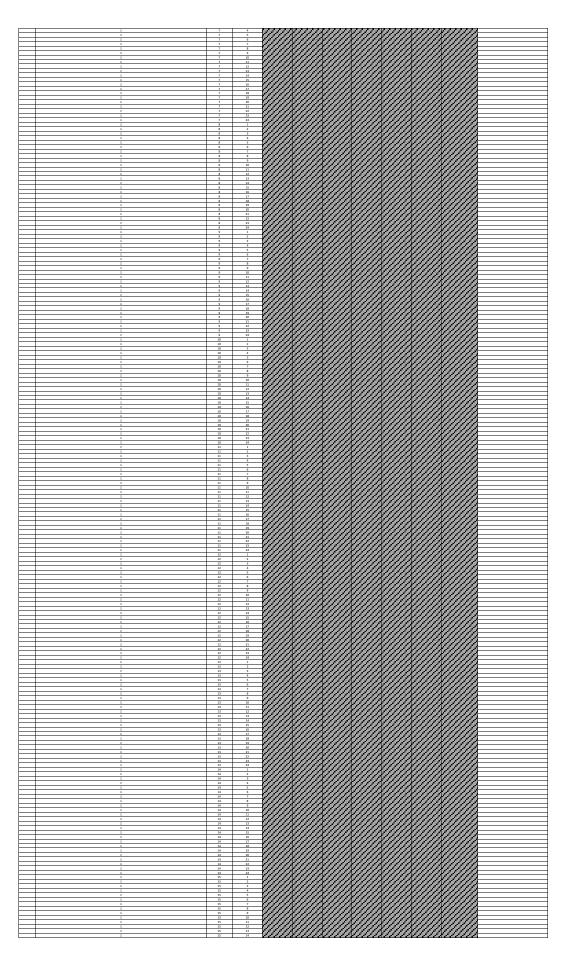
11 22 11 22 11 22 11 22	20 21 22												
11 22 11 22 11 21	23 24 1			:									
11 21 11 21 11 21	3 4												
11 21 11 21 11 21	6 7 8			:									
11 21 11 21 11 21	9 10 11			- :									
11 23 11 23 11 23	11 11 14 15												
11 21 11 21 11 21	16 17 18			- :									
11 23 11 23 11 23	19 20 21		1										
11 21 11 21 11 23	23 24												
11 24 11 24 11 24	2 3 4			:									
11 24 11 24 11 24	5 6 7												
11 24 11 24 11 24	9 10												
11 24 11 24 11 24	12 13 14			- :									
11 24 11 24 11 24	16 17			Ė									
11 24 11 24 11 24	19 20 21			- :									
11 24 11 34 11 24	22 23 24												
11 B	2 3												
11 25 11 25 11 25	5 6 7			- 1									
11 25 11 25 11 25	9 10												
11 25 11 25 11 25	11 12 13								H			Ħ	
11 25 11 25 11 25	15 16 17												
11 25 11 25 11 25	18 19 20												
11 25 11 25 11 25 11 25	21 22 23												
11 25 11 26 11 26 11 26	1 1 2												=
11 25 11 25 11 26 11 26	4 5 6												
11 26 11 26 11 26 11 26	7 8 9						┢¯	\Box	H		=	H	=
11 25 11 25 11 25 11 35	11 12 13												
11 25 11 25 11 26	14 15 16		:	:									
11 25 11 26 11 26	17 18 19			:									
11 26 11 26 11 26	20 21 22 23												
11 26 11 27 11 27	24 1 2												
11 27 11 27 11 27	3 4 5			- :									
11 27 11 27 11 27	7		1										
11 27 11 27 11 27	10 11 12												
11 27 11 27 11 27	13 14 15		:	:									
11 27 11 27 11 27	16 17 18		:	- :									
11 27 11 27 11 27	20 21			- 1									
11 27 11 27 11 27 11 28	23 24 1												
11 28 11 28 11 28	2 3 4		:	- :									
11 28 11 28 11 21	6 7												
11 28 11 28 11 28	9 10 11			- 1									
11 28 11 28 11 28	12 13 14			- :									
11 21 11 22 11 23	16 17												
11 28 11 28 11 28	19 20 21			- 1									
11 28 11 28 11 28	22 23 24			:									
11 29 11 29 11 29	2		1										
11 29 11 29 11 29	5 6 7			- 1									
11 29 11 29 11 29	9 10												
11 29 11 29 11 11 11 29 11 11 11 29 11 11 11 29 11 11 11 11 11 11 11 11 11 11 11 11 11	11 12 13												
11 29 11 29 11 29 11 29 11 29 11 29 11 29 11 29 11 29 11 29 11 29 11 29	15 15 16 17												
11 29 11 29 11 29	17 18 19 20 21						ΙΞ				=	Ħ	
11 29 11 29	20 21 22 22 23 24												\equiv
11 30 11 30 11 20	1 2 3												
11 30 11 30	5 6												
11 20 11 30 11 20 11 20 11 20 11 30	7 8 9 10											H	
11 30 11 30 11 30													
11 30 11 30 11 30	12 13 14 15 16												
11 30 11 30 11 30 11 30	17 18 19 20 21												=
11 30 11 30 11 30 11 30	21 22 22 23 24												
11 30 12 1 12 1 12 1	24 1 2						┢¯	\Box	H		=	H	\equiv
12 1 12 1 12 1 12 1	4 5												
12 1 12 1 12 1 12 1	7 8 9												
12 1 12 1 12 1	9 10 11 12 13												
12 1 12 1 12 1 13 1	13 14 15												
12 1 12 1 12 1 12 1	14 15 16 17 18												=
12 1 12 1 12 1 12 1	20 21			-									
12 1 12 1 12 2 2	22 23 24 1						ŧΞ	\vdash			\pm	Ħ	=
12 2 12 2 12 2 12 2	3 4												
12 2 12 2 12 2 12 2	6 7												\equiv
12 2 12 2 12 2 12 2	9 10 11												
12 2 12 2 12 2 12 2	12 13 14 15							\vdash				Ħ	=
12 2 12 2	15 16 17					:							

12 12 12 12	2 18 2 19 2 20 2 21															
12 12 12	2 22 2 23 2 24				1											
12 12 12	1 1 1 2 1 1															
12 12 12	3 5 3 6 3 7				1											
12 12 12	3 8 3 9 3 10															
12 12 12 12	1 11 1 12 1 11 1 14															
12 12 12	3 15 3 16 3 17				:											
12 12 12	3 18 3 19 3 20				- 1											
12 12 12	3 22 3 23 3 24															
12 12 12	4 1 4 2 4 3				1											
12 12 12	4 5				1											
12 12 12 12	4 B 4 9 4 10															
12 12 12	4 11 4 12 4 13				:											
12 12 12	4 14 4 15 4 16															
12 12 12	4 18 4 19 4 20				:											
12 12 12	4 21 4 22 4 23		: :		:											
12 12 12	4 24 5 1 5 2 5 3															
12 12 12	5 4 5 5 5 6															
12 12 12	5 7 5 8 5 9				1											
12 12 12	5 10 5 11 5 12															
12 12 12 12	5 11 5 14 5 15 5 16											=	Ŧ			
12 12 12 12	5 17 5 18 5 19												Ħ			
12 12 12	5 20 5 21 5 22											#	1			
12 12 12	5 23 5 24 6 1							E		ΙĪ	HŦ		Ŧ	▐	H	
12 12 12 12	6 3 6 4 6 5												#			=
12 12 12 12	6 6 7 6 8				- :								≢			
12 12 12	6 9 6 30 6 11									Ė			1			
12 12 12 12	6 12 6 13 6 14 6 10												ŧ			
12 12 12	6 16 6 17 6 18															
12 12 12	6 19 6 20 6 21				:											
12 12 12	6 22 6 23 6 24				:											
12 12 12	7 2 7 3															
12 12 12	7 5 7 6 7 7				:											
12 12 12	7 8 7 9 7 10		: :		- :											
12 12 12	7 11 7 12 7 13															
12 12 12	7 16 7 16 7 17															
12 12 12	7 18 7 19 7 20															
12 12 12	7 21 7 22 7 23				:											
12 12 12	7 24 8 1 8 2				1											
12 12 12	1 4															
12 12 12	8 7 8 8 8 9				:											
12 12 12	8 10 8 11 8 12				1											
12 12 12	8 14 8 15 8 15															
12 12 12 12	8 17 8 18 8 19															
12 12 12	8 20 8 21 8 22				:											
12 12 12	8 23 8 24 9 1				1											
12 12 12	9 3 9 4 9 5				- 1											
12 12 12	9 6 9 7 9 8									Ė			1			
12 12 12 12	9 9 9 10 9 11 9 12												#			
12 12 12	9 11 9 14 9 15				- :								≢			
12 12 12	9 16 9 17 9 18												1			
12 12 12 12	9 19 9 20 9 21 9 22										H		ŧ			
12 12 12 12	9 23 9 24 10 1															
12 12 12	10 2 10 3 10 4				1											
12 12 12	10 5 10 6 10 7 10 8 10 9							E		ΙĪ	HŦ		Ŧ	▐	H	
12 12 12 12													#			\equiv
12 12 12 12	10 20 10 11 10 12 10 13 10 14 10 15												#			=
12 12 12	10 15 10 16 10 17				1											
12 12 12 12	10 16 10 17 10 18 10 29 10 20												ŧ			
12 12 12 12	10 21 10 22 10 23 10 24												Ħ			
12 12 12	10 24 11 1 11 2 11 3 11 4				- :								Ŧ			
12 12 12 12	11 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1						=			Ι	H		F	▐	H	\equiv
12 12 12 12	11 7 11 8 11 9 11 10												#			
12 12 12	11 11 11 12				- 1								⇟			
12 12 12	11 13 14 14 15 15 16 12 17				1											
12 12 12 12	11 17 11 18 11 19						=			ΙĪ	H		Ŧ	⇟	Ħ	=
12 12 12 12	11 20 11 21 11 22 11 23												#			
12 12 12	11 24 12 1 12 2												ŧ			
12 12 12	12 3 12 4 12 5				1											
12 12 12 12	12 6 12 7 12 8						=			ΙĪ	H		Ŧ	⇟	Ħ	=
12 12 12 12	12 10 11 12 11 12 17											=	#			
12 12 12	12 11 12 12 12 13 12 14 12 15												ŧ			
12	12 16									Т		_			\vdash	_

	12 12 17 18 12 18 12 12 19 12 12 10 12 12 20							
	12 12 21 12 12 22 12 12 23							
	12 12 24 12 13 1 12 13 2 12 13 2							
	12 13 4 12 13 5 12 13 5							
	12 13 7 12 13 8 12 13 9							
	12 13 11 12 13 12 12 13 12 12 13 13							
	12 13 14 15 15 12 12 13 15 15 15 15 15 15 15 15 15 15 15 15 15							
	12 11 17 12 11 18 12 13 19 12 13 20							
	12 13 21 12 13 22 12 13 22 12 12 23							
	12 13 24 12 14 1 12 14 2							
	12 M 4 12 M 5 12 M 5							
	12 14 7 12 14 8 12 14 9							
	12 M 10 12 M 11 12 M 12 12 M 12							
	12 14 14 14 15 12 12 14 15 12 12 14 15 16 16							
	12 54 17 12 54 18 12 14 19							
	12 34 20 12 34 21 12 34 21 12 54 22 12 54 23							
	12 14 24 15 1 12 15 1 1 12 15 2							
	12 15 1 12 15 4 12 15 5							
	12 15 6 12 15 7 12 15 8							
	12 15 10 12 15 10 12 15 11 12 15 12							
	12 15 13 12 15 14 12 15 15							
	12 15 16 17 12 15 18 17 12 15 18 18 12 12 15 18					\rightarrow	\Rightarrow	$\pm \pm \pm$
	12 15 20 12 15 21 12 15 21							
	12 15 23 12 15 24 12 16 1 12 16 1					=		+
	12 15 3 12 16 3 12 16 4 12 16 5					\rightarrow	=	
Column	12 16 6 12 16 7 12 16 7	i i i	i i					
	12 16 9 12 16 10 12 16 11 12 16 11					$\Rightarrow \exists$		+
	12 16 13 12 16 14 12 16 16 15							
	12 16 16 17 12 16 16 17 12 16 18 17							
Column	12 16 19 12 16 20 12 16 21 12 16 22							
	12 16 23 12 16 24 12 17 1							
	12 17 2 12 17 3 12 17 4							
	12 17 6 12 17 7 12 17 7							
	12 17 9 12 17 10 12 17 10							
	12 17 12 12 17 13 12 17 13							
	12 17 16 12 17 17 12 17 17 12 17 18							
	12 17 19 12 17 20 12 17 21							
	12 17 23 12 17 24 12 17 24 12 18 1							
	12 18 2 12 18 3 12 18 4							
	12 18 6 12 18 7 12 18 7							
Column C	12 18 9 12 18 10 12 18 11							
	12 III 12 12 III 13 12 III 14							
	12 18 16 12 18 17 12 18 18							
	12 18 19 19 12 18 20 12 12 18 20 12 18 21							
	12 18 23 12 18 24 12 19 1							
	12 19 2 12 19 3 12 19 4							
	12 19 5 12 19 6 12 19 7 12 19 7					\rightarrow	\dashv	\pm
	12 9 9 11 12 19 10 11							
	12 19 12 12 19 13 12 19 13 12 19 14							$\mp \mp \mp$
	12 19 16 17 12 19 16 12 12 19 16 17 12 12 19 17							
	12 19 19 19 12 12 19 20 12 12 19 21 12 19 21 12 19 21							+
S	12 19 22 19 12 12 19 23 12 12 19 24 12 20 1					\rightarrow	=	
1	12 20 2 12 20 3 12 20 3 12 20 4							
1	12 20 5 12 20 6 12 20 7							
	12 20 8 12 20 9 12 20 10 12 20 11					\rightarrow	=	
State Stat								
	12 20 15 12 20 16 12 20 17 12 20 17							
	12 20 18 12 20 19 12 20 20 19 12 20 20 21					\rightarrow	=	
Company	12 20 22							
						$\Rightarrow \exists$		+
	12 21 6 12 21 7							
	12 21 9							
	12 21 11 12 21 12 12 21 13 12 21 13							
	12 21 14 15 12 12 15 15 12 12 11 16 12 12 17					\rightarrow	=	
	12 21 18 12 21 21 20 12 21 20							
	12 21 21 12 21 22 12 21 22 12 21 23							
	12 21 24 1 1 1 1 2 1 1 1 1 2 1 1 1 1 1 1					\rightarrow	=	
	12 22 4 12 22 5 12 22 5							
	12 22 7 12 22 8 12 22 9							
	12 22 10 12 22 11 12 22 12 12 22 12							
	12 22 14 12 22 15					\rightarrow		

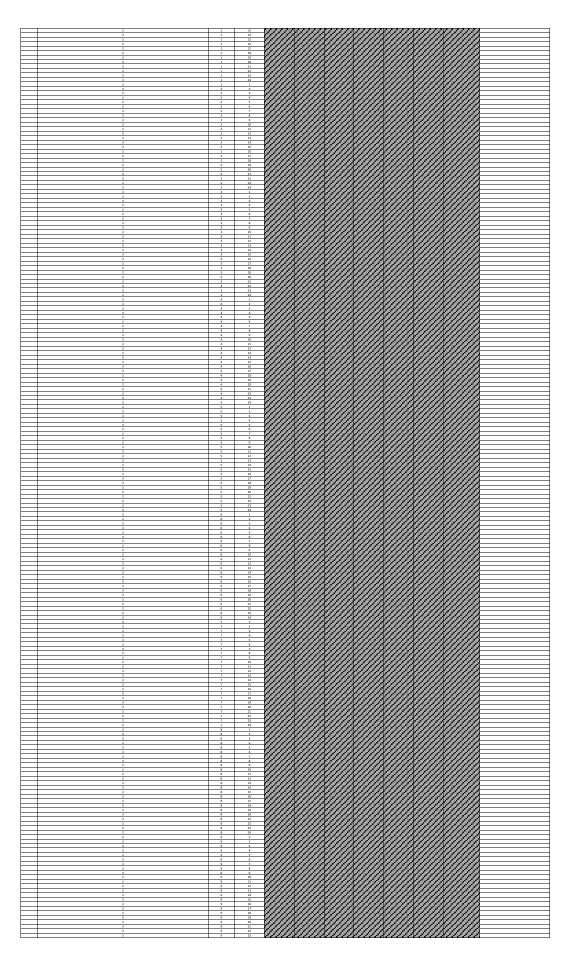


30 MMT in 2035 Demand Inputs										
Managed Rotal Sales Forecast (assigned to LSE) Behind-The-Meter Photovokais (STM PV) Forecast (assigned to LSE)		Units GWh	2024 5,759 901	2026 5,759	2030 5,955	5,029	Notes Must be entered regar Measured at custome.	dess of demand modifi	ers selected. Includes effect	of BTM PV, Energy Efficiency, etc.
Retail Sales without BTM PV reduction		GWh GWh	901 6,660 973 3N	1,023 6,782 1,104	1,323 7,279 1,428	1,636 7,734 1,764 i 3%	Measured at custome. Used to allocate demo	r, not groused up for T& nd modifien	Diosses	
Behind-The-Meter Photovoltain (BTM PV) grossed up for T&D losses Calculated share of CASO system demand (% of Retail Sales)		%			3%					
Commercial & Industrial Fraction of Easeline Domand Default CAB Percentage of Total Casteror CAB Percentage of Total (OPTIONAL)	Use Custom? No	Units %	2024 49%	2026 45%				Does not include dem	and from Light Duty EVs.	
Calculated Demand, based on sales-weighted share of total from IEPR		Units		2026	2030	2035		diposity our canon	- 781	
Easeline net energy for load Electric Vehicle Load		GWh	7,011 244 28 (96) (97)	2026 7,088 346 50 (164) (1,104)	2036 7,497 550 101 (295) (1,428)	7,765 841 168) (431)	Notes Grossed up for T&D los	ues; demand met by 81 ues	M CHP excluded	
Building Electrification Energy Efficiency Behind-The-Metter Photovoltaics (BTM PV)		GWh	(96) (973)	(164)	(295)) (431)) (1,764)	Grossed up for T&D los Grossed up for T&D los	uer uer		
Behind-The-Meter Storage Losses (BTM Storage) Behind-The-Meter Storage Capacity (BTM Storage)		GWh GWh Nameplate MW					Grossed up for T&D los	ues		
Custom Demand Inputs (OPTIONAL; overwrites sales-weighted IEPR values from Calculated Demand section) Baseline net energy for load Electric Valvicia Load	Use Custom? No	GWh GWh GWh			XXXXX		Notes To overwrite, set "Use	Custom" to "Yes" and in	put forecast. For use in Alten	sative Plans only.
Building Electrosistic Energy Efficiency	No No No	GWh					Custom demond value Uner-specified demons	s should be grossed up ; I profiles should be inpu	sput forecast. For use in Alben for T&D losses. It in the "Custom Profiles" tab emand and therefore should i	
Behind-The-Meter Photovoltaics (BTM PV) Behind-The-Meter Storage Capacity (BTM Storage)	No No	GWh Nameplate MW	HHH.	HHH	m	*****	Custom 87M storage s	hould be entered in ten	ns of Nomeplate MW	e ensered di negotive values.
Behind-The-Melar Storage Losses (BTM Storage) Active Demand Inputs Baseline net energy for load	Source IEPR	GWh Units GWh			7,497	2035 7,765	Notes Grossed up for T&D los	ues; demand met by 81	M CHP excluded	
Non-commercial/industrial portion of baseline (included in baseline total) Commercial/industrial portion of baseline (included in baseline total)	IEPR IEPR IEPR IEPR IEPR	GWh GWh	3,607 3,405 244 28 (96) (973)	3,634 3,455 346	3,805 3,692 550	7,765 3,851 3,954 841	Grossed up for T&D los Grossed up for T&D los	ues; demand met by 81 ues; demand met by 81	M CHP excluded M CHP excluded	
Thechric Vehicle Load Building Electrification Framer Efficiency	ICPR ICPR ICPR	GWh GWh GWh	244 28 (00)	50 (164) (1,104)	550 101 (295) (1,428)	841 168) (431)) (1,764)	Grossed up for T&D los Grossed up for T&D los Grossed up for T&D los Grossed up for T&D los	uer uer		
Energy Efficiency Behind-The-Metter Photos obtaics (BTM PV) Behind-The-Metter Storage Losses (BTM Storage)	IEPR IEPR	GWh	(973)	(1,104)	(1,428)	(1,764)	Grossed up for T&D los Grossed up for T&D los	uer uer		
Calculated demand at utility-scale generator bus-bar		GWh	6,217	6,218	6,431	6,587	Total of "Active Demo	nd Imputs*		
IFM OIP Calculation CASIO-wide In front of the meter (FM) Combined Heat and Power (DIP) generation		GWh	2024 11,458	2026 11,385	2030 11,194	2035 6,609	Input data - do not cha	nge. Values are from S	ERVM disparch	
ISE share of IFM OIP Checks		GWh	323 2024	315	312	182	Calculation - da not che	onge		
Corect sign (positive/negative) on demand inputs If custom C&I percentage is used, positive percentage is used			TRUE	TRUE	TRUE	TRUE				
Custom Demand Shapes (OPTIONAL; overwrites default demand shapes)						Custom Hourly Demand	Frofiles			
		Use Custom Shape? Notes:	No Si	No Set Use sope should be normalize les except BTM Storage,	No r custom shape sogge rd - the sum of the hou	No r to res to overnor ory rly values over the entire	No aut snope with custom year should equal I with	thape serou. the exception of BTM:	No Storage.	
	Cherk-Sumsta 1 ifrust	notes:	For all prof	iles except BTM Storage, ETSA I	normalize by dividing a	rwry hour of the original	non-normalized shape (in MW) by the annual t	otal (in MWh/yr).	RTM Storage Cherk: Retween J and 1
Total		J Jennino:					-	Behind-The-Meter	Eehind-The-Meter Storage	
Month	Day	Hour	Baseline: Non C&I	Baseline: C&I	Electric Vehicle Load	Building Electrification	Energy Efficiency	Photosoftsics (STM		
1	1	2							(STM Storage)	
1 1 1	1 1	4								
1	1 1	6 7								
1 1	1	8 9								
1 1	1	10 11								
1	1	12 13 14								
1	1 1	15 16								
1 1	1 1	17 18								
1 1	1	19 20								
1 1	1 1 1	21 22 25								
1	1 2	24								
1	2 2	3								
1	2 2	5	10000		(1119)	<i>9000</i>				
1	2 2	7			97777	V/////				
1	2 2	9 10			1000	<i>VIII</i>				
1	2 2	11 12			<i>7777</i> 7,	<i>1000</i>				
1	2 2	13 14		<i>9000</i>		XIIII			(11111)	
1	2 2	15 16			<i>11110</i> .					
1 1	2 2	18 19			<i>/////</i>	<i>80000</i>				
1 2	2 2	20 21				<i>9000</i>				
1	2 2	22 23								
1	3	1			(1117)					
1	3	3 4				XIIII				
1 1	3 3	5				<i>17777</i>		<i>7777</i> 2,		
1	3	7 B						<i>9999</i>		
1 1 1	3 3	9 10								
1	3	12								
1 1	3	14 15								
1	3	16 17								
1 1	3 3	18 19 20	<i>{/////</i>							
1	3	21 22				(////				
1	3	23 24								
1	4	2								
1	4 4	3 4 5								
1	4	6 7								
1 1	4 4	9								
1 1	4	10 11	(////							ļ
1	4 4	13 14								
1 1	4	15 16								
1 1	4 4	17 18								
1 1	4 4	20 21								
1	4	22 25								
1	4 5	24 1								
1	5	3								
1	5 5	5 6								
1	5 5	7 8				/////				
1 1	5	9 10								
1	5	11 12								
1	5	13								
1	5 5	16 17								
1 1	5	18 19								
1	5	20 21								
1	5	22 23 24								
1 1	5 6	1 2	1////							
1	6	3 4								
1 1	6	5 6								
1	6	7 8								
1	6	9 10								
1	5	12 13								
1	6	14 15								
1	5 5	16 17								
1 1	6	18 19								
1	6 6	20 21 27								
1	6	23 24	1/////			<i>Y/////</i>				
1	7 7	1 2								
					· · · · · · · · · · · · · · · · · · ·					



	1		15	15	97777	(////	<i>07777</i> 777777	07777	0)))))	<i>7777777</i>		
	1 1		15 15	17 18								
	1		15 15	19 20								
	1 1 1		15 15	22 22 23								
	1		15 16	24 1								
	1 1 1		16 16	3 4								
	1		16 16	5								
	1		16 16	8 9						<i>90000</i>		
	1		16 16	10 11						<i>90000</i>		
	1		16 16 16	12 13 14								
	1		16 16	15 16						<i>90000</i>		
	1		16 16 16	17 18 19								
	1		16 16	20 21								
	1		16 16	22 23 74								
	1		17	1 2								
	1		17 17	4								
	1		17 17	7					999	80000		
	1		17	9						80000		
	1		17 17	11 12					999	80000		
	1		17 17	13 14						80000		
	1		17	16 17						80000		
	1		17 17	18 19								
E	1 1		17 17	21 21 22								
	1		17	23 24								
	1 1 1		18 18 18	2 3			<i>/////////////////////////////////////</i>					
E	1 1		18 18	4 5								
E	1 1 1		18 18 18	5 7 8			<i>/////////////////////////////////////</i>					
	1		18 18	9								
E	1 1		18 18 18	21 12 13								
	1		18	14 15								
E	1 1		15 15 15	15 17 18								
	1		18 18	19 20								
	1 1		18 18 18	21 22 23						<i>}//////</i>		
	1 1		18 19	24 1								
	1 1 1		19 19	2 3 4						<i>VIIII</i>		
	1		19 19	5 6						<i>VIIII</i>		
	1		19 19	7 8 9						<i>VIIII</i>		
	1		19 19	10 11					(1) (1)	<i>10000</i>		
	1		19 19	12 13					(1) [1]	<i>10000</i>		
	1		19 19	15 16				W.	(1111)	<i>VIII</i>		
	1		19 19	17 18					(1111)	<i>VIIII</i>		
	1		19	20 21						<i>10000</i>		
	1		19	22 23				W.	(1111)	<i>VIII</i>		
	1 1		20 20	1 2				W.	(1111)	<i>VIII</i>		
	1		20	1 4				W.	(1111)	<i>VIIII</i>		
	1 1 1		20 20 20	6 7				W.	(1111)	<i>VIII</i>		
	1		20 20	9				W.	(1111)	<i>VIII</i>		
	1 1		20 20 20	10 11 12				W.	(1111)	<i>VIII</i>		
	1		20 20	13 14				(111)	(1111)			
	1		20 20 20	15 16 17					(1111)			
	1		20 20	18 19				(1) (1)	999			
	1		20 20 20	20 21 22					(1111)			
	1		20	23 24								
	1		21 21 21	2 3								
	1 1		21 21	4 5								
	1		21 21 21	6 7 8								
	1 1		21 21	9								
	1 1		21 21 21	11 12 13								
	1		21 21	14 15								
	1		21 21 21	16 17 18								
	1		21 21	19 20								
	1 1		21 21 21	21 22 23								
	1		21 22	24 1								
	1		22 22 22	2 3 4						<i>\$[[]]</i>		
	1		22 22 22	5								
	1		22 22 22	7 8						<i>\$[[]]</i>		
	1 1 1		22 22 22	9 10 11								
	1		22 22 22	12 13								
	1		22 22	15 16								
	1		22 22 22	17 18								
	1 1		22 22 22	20 21								
	1		22 22	22 23								
	1 1		22 23 23	24 1 2								
	1		23	3 4						<i>\$[[]]</i>		
	1		23 23 23	5 6 7						<i>\$[[]]</i>		
	1 1		23 23 23	5 9						<i>{//////</i>		
	1		23 23 23	10 11 12								
	1 1		23	13 14								
	1		23 23 23	15 16 17								
	1 1		23 23	18 19						<i>{//////</i>		
	1		23 23 21	20 21						<i>{//////</i>		
E	1 1		23 23	23 24								
_	1	-	24	1			<i>~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~</i>		V. 1.1.1.1.			

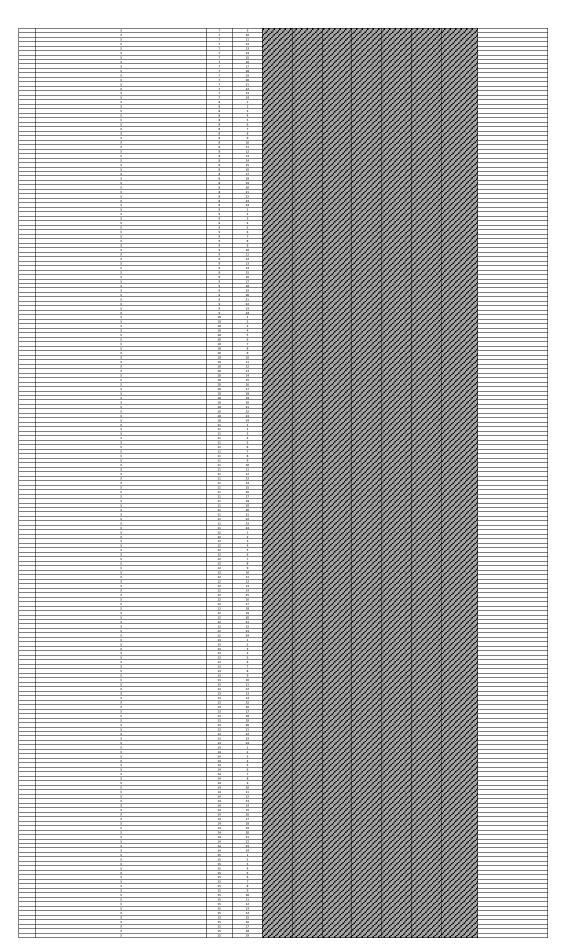
3		24	2	97777	(////	(7777)	///////////////////////////////////////	///	/////	177777	
1		24 24	4 5					M	999),		
2		24 24 24	7 8					m			
1		24 24	9					m			
1		24 24 24	11 12 13					///	9990		
1		24 24	14 15					////			
1		24 24	17 18								
		24 24 24	19 20 21					99	/////		
		24 24	22 23					M			
		24 25 25	24 1					M			
1		25 25	3 4								
3		25 25 25	5 6 7					M	9999.		
2		25 25	5 9					M	999).		
1		25 25 25	10 11 12						/////		
1		25 25	13						999),		
1		25 25 25	15 16 17						440.		
3		25 25	18 19					m	9777.		
1		25 25	21 22								
		25 25 26	23 24					773			
1		26 26	2 3				(///X/)	m	7777	<i>111111.</i>	
3		26 26 26	5 6								
3		26 26	7 8								
		26 26 26	9 10 11								
1		26 26	12 13								
1		26 25 26	14 15 16								
1		26 26 26	17 18								
3		26 26 26	20 21								
3		26 26 26	22 23 24					11/1			
		27 27 27	1 2								
1		27 27 27	3 4 5								
1		27 27	6 7								
		27 27 27	9					///	999)		
1		27 27	11 12					W)			
3		27 27 27	13 14					////			
1		27 27	16 17	9777				////			
3		27 27 27	18 19 20					93X			
2		27 27	21 22					99X	/////	<i>VIII</i>	
3		27 27 28	23 24 1					99X	/////		
1		28 28	2 3					99X	/////	<i>VIII</i>	
3		28 28 28	5					M			
2		25 25	7 8								
3		28 28 28	9 10 11					M	999),		
1		28 28	12 13					M	<i>1111).</i>		
1		28 28	15 16						/////		
		28 28	17 18	<i>VIII</i>					999),		
2		28 28 28	20 21					m	9777.		
3		28 28 28	22 23 24								
2		29 29	1 2					///			
3		29 29 29	4 5				(///X/)	m	/////		
3		29 29	7					M		<i>VIII</i>	
1		29 29	9					M			
3		29 29 29	11 12 11								
1		29 29	14 15								
		29 29 29	16 17 18								
1		29 29	19 20					11/1			
3	· ·	29 29 29	21 22 23					///			
1		29 30	24								
3	· ·	30 30 30	2 3 4								
1		30 30	5					11/18			
3		30 30	8 9					///}		<i>}/////</i>	
1		30 30	10 11					///}		<i>}/////</i>	
3		30 30	12 13 14								
		30 30 30	15 16								
3		30 30 30	18 19								
1		30 30	20 21 22								
1		30 30	23 24					///			
		31 31 31	1 2 3								
		31 31	4 5				////////	1/1/			
3		31 31 31	5 7 8								
3		31 31	9					///			
2		31 31 31	11 12 13								
-		31 31	14 15							(/////	
1		31 31 31	16 17 18							(/////	
1		31 31	19 20							(/////	
1		31 31 31	21 22 23							8/////	
2		31	24 1							8/////	
2	· •	1 1	2 3 4					11/3		<i>{//////</i>	
2		1	5								
2		1	8 9								
2		1	10 11								
 			1 24								



		9	24	V////	<i>//////</i>	0777777777	(7777)	<i>77777</i>	/////	
		10	2 3						/////	=
		10 10	4 5						/////	
		10	5 7						/////	
		10	9					<i>7777.</i>	/////	
		10	11 12							=
		10	13 14		<i>111111</i>				/////	
		10	15 16						/////	
		10	17 18					VIII	/////	
		10	20 21						/////	_
		10 10	22 23					V////	(////	
		10 11	24 1					<i>(1111)</i>	/////	
		11	3	0000	<i>9000</i>			<i>0000.</i>	/////	
		11	5						/////	
		11 11	7 8					11111		
		11 11	9 10						/////	
		11	11					<i>7777.</i>	/////	
		11 11	14 15					<i>/////</i>		
		11 11	16 17		<i>111111</i>				/////	
		11 11	18 19						/////	
		11	20 21 23					VIII	/////	
		11	22 23 24					W///	/////	
		12 12	2					<i>7772.</i>	(////	
		12 12	3 4					<i>0000.</i>		
		12	5 6						/////	
		12 12 12	7 8 9						(////)	
	! !	12 12	10 11						/////	_
E		12 12	12 13						/////	
		12 12 17	14 15 16						/////	
		12 12	17 18						/////	
		12 12	19 20						/////	_
E		12	21 22						/////	
		12 12	23 24						/////	
		13	2 3	(////					/////	=
		13 13	4 5						/////	=
		13 13	6 7				0000	VIII.		
		13	9						/////	
		13 13	11					/////	/////	=
		13	13						/////	_
		13 13	15 16					<i>11111.</i>		
		13	17 18					<i>7777</i> .	/////	
		13	20 21						/////	
		13	22 23						/////	=
		13 14	24 1					VIII		
		14 14	3						/////	
		14	5	<i>7777</i>					/////	=
		14	7 8						/////	=
		14 14	9					<i>(1111)</i>	/////	
		14	12	0000	<i>9000</i>			<i>(1119)</i>	/////	
		14	14 15						/////	=
		14 14	16 17					11110		
		14 14	18 19						/////	
		14	20 21 23					<i>7777.</i>	/////	
		14	23 24					<i>/////</i>		=
		15 15	2						/////	_
		15 15	3 4						/////	
		15 15	5						/////	
		15 15	8 9	(////					(////)	
	<u> </u>	15 15	10 11	(/////					/////	=
		15 15	12 13							
		15 15	14 15						(////)	
		15 15	17 18						/////	=
	<u> </u>	15 15	19						/////	_
E		15 15	21 22						/////	
		15 15 16	23 24						/////	
		16 16	2 3							
		16 16	4 5						/////	_
		16 16	6 7						(////	
		16 16	8 9						/////	
		16 16	11 12	(////					(////)	
		16 16	13 14						(////):	_
	-	16 16	15 16						(////)	
		16 16	17 18							
		16 16	20 21						/////	
	<u> </u>	16 16	22 23						/////	_
E	-	16 17	24 1						(////)	
		17	3							
		17	5 6							
	l	17 17	7 8						/////	_
		17	9						(////	
		17	11 12						/////	
		17	14 15						(////)	
	! !	17 17	15 16 17						/////	_
E	-	17 17	18 19						/////	
		17 17	20 21							
		17	23 24						/////	
		16 16	1 2						/////	_
E	-	18 18	3 4						(////)	
		18 18	5 6							
				CONTRACTOR OF THE PARTY.		マントナントントナナナイ	111111	111111		
		18	9		11/1/11				/////	

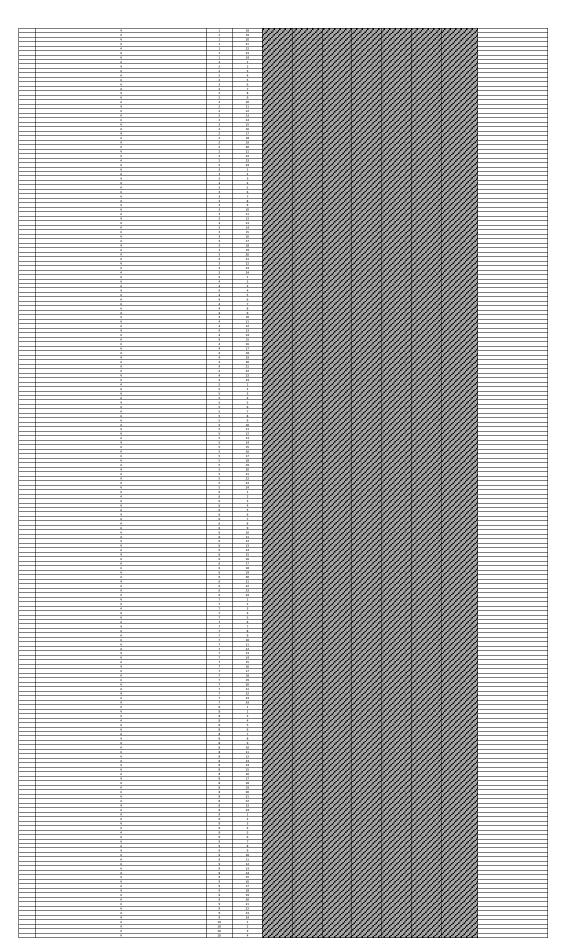
	2	18 18	11 12	97777	/////			/////	//////	
	1	18 18	13 14							
	2	18 18 18	15 16 17							
	2	18 18	18 19							
	2	18 18	20 21							
	2	18 18	23 24							
	2	19 19	2 1							
	2	19	4 5							
	2	19 19	7							
	1	19 19	9							
	2	19 19	11 12							
	2	19 19 19	13 14 15							
	1	19 19	16 17							
	2	19 19 19	18 19 20							
	2	19 19	21 22							
	1	19 19 20	23 24 1							
	1	20 20	3					<i>999</i>		
	2	20 20 20	5 6							
	1	20 20	7 8	9777				<i>999</i>		
	1	20 20 20	9 20	9000					<i>111110</i> -	
	1	20 20	12 13					<i>000.</i>		
E	1	20 20 20	14 15							
	1	20 20	17 18							
E	2	20 20	19 20							
	1	20 20 20	21 22 23							
E	1	20 21	24							
E	1	21 21 21	2 3 4							
	1	21 21	5					<i>000</i>		
	1	21 21 21	7 8 9							
	1	21 21	10 11							
E	2	21 21 21	12 13 14							
	2	21 21	15 16							
	2	21 21	17 18	9777				<i>000</i>		
	1 2	21 21 21	20 21							
	1	21 21	22 23	9777				<i>000.</i>		
	1	21 22 22	24 1 2							
	1	22 22	3 4							
	1	22 22 22	6 7	977						
	1	22 22	3							
	2	22 22 22	10 11 12							
	1	22 22	13 14	9777				<i>000.</i>		
	2	22 22 22	15 16 17	977					<i>//////</i>	
	2	22 22	18 19							
	2	22 22 22	20 21 22							
	2	22 22	23 24							
	2	23 23 21	2 1						<i>//////</i>	
	2	23 23	4 5							
	2	23 23 21	6 7							
	2	23 23	9							
	1	23 23	11 12							
	1	23 23	14 15							
	2	23 23	16 17							
	2	23 23 23	18 19 20							
	1	23 23	21 22							
	2	23 23 24	23 24 1							
	2	24 24	2 3							
	2	24 24 24	4 5 6							
	1	24 24	7 8							
F	2	24 24 24	9 10 11							
	1	24 24	12 13							
E	1	24 24 24	14 15							
E	1	24 24 24	17 18							
	1	24 24	19 20						//////	
	1	24 24 24	21 22 23							
	2	24 25	24							
	2	25 25 25	2 3 4							
	2	25 25 25	5 6							
E	2	25 25 25	7 8 9							
	1	25 25	10 11							
E	1	25 25 2*	12 13							
E	1	25 25	14 15 16						//////	
	1	25 25	17 18							
	1	25 25 25	20 21							
	1	25 25	22 23							
E	1 1	25 26 26	24 1 2							
	2	26 26	3 4							
	2	26 25 26	5 6 7							
	1	26 26	3 9							
			10	111111		V/////////////////////////////////////		111111	V//////	
	2	26 26	11	1////		CONTRACTOR CO	1777000		V//V/U	
	1	26 25 26 26 26	11 12 13 14							
	2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2	26 26 26 26 26 26 26 26 26 26	11 12 13 14 15 16							
	2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2	26 25 25 25 25 25 25 25 25 25 25 25 25 25	11 12 13 14 15 16 17 18							

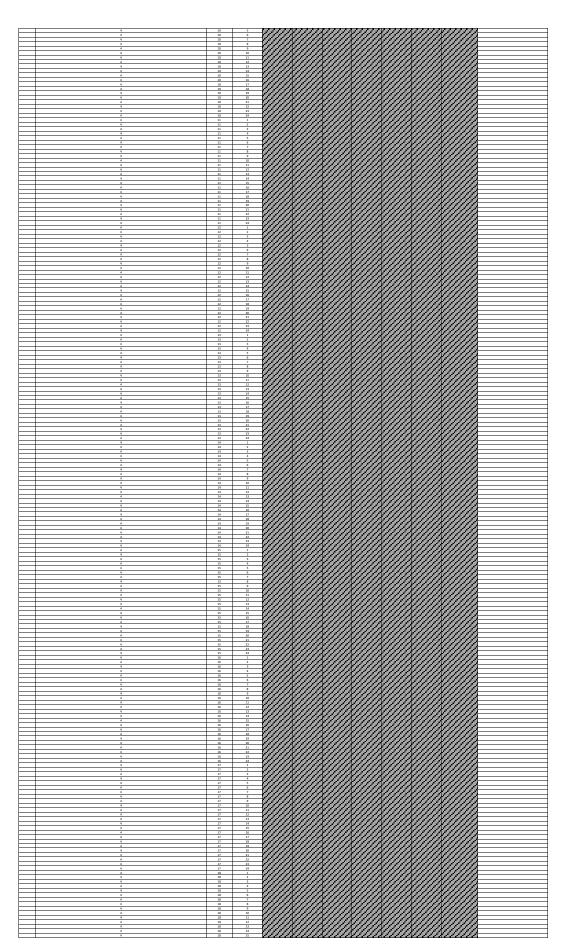
			26 26	Ŧ	22 23		(////	(////	/////>	
			26 27		24 1					
			27	_	3	<i>000</i>		V////	/////	
			27	_	5				/////	
			27		7 8				/////	
			27 27		9 10			<i>77777</i>	/////	
			27 27 27		11 12 13			<i>WW.</i>	/////	
			27 27		14 15				/////	
			27		16 17	<i>7777.</i>		1/////	/////	
			27		19 20			<i>\/////</i>		
			27 27		21 22	/////			/////	
			27 27 28		23 24	/////			/////	
			28 28 28		2			1/////	/////	
			25 25		5				/////	
			28 28		7			<i>\$7777.</i>	/////	
			28 28 28		9				/////	
			28 28		11 12			<i>V/////</i> :	/////	
			28 28		13				/////	
			28 28 28		15 16				/////	
			28 28		18 19				/////	
			28 28		20 21	<i>0000.</i>		1 //////		
			28 28		22 23				/////	
			1		1 2				/////	
			1	1	3 4				/////	
			1	Ŧ	5				/////	
			1 1	\dashv	, 1				/////	
			1	Ŧ	10 11				/////	
			1	#	12 13					
			1	#	15 16				/////	
			1	1	17 18					
E			1	Ŧ	29 20				/////	
<u> </u>			1 1	#	22 23					
			1 2	1	24 1				/////	
E			2	\pm	3				/////	
			2 2	_	5	W////			/////	
			2		7 8	9772			/////	
			2		9				/////	
			2		11	<i>(1111)</i>		<i>\$7777</i>	/////	
			2 2		14 15				/////	
	1		2 2		16 17			<i>//////</i>		
			2		18 19			<i>97777</i> ,	/////	
			2 2		21 21 22			<i>WW.</i>	/////	
			2		23 24				/////	
			3		2	7777			/////	
			3		4			<i>\/////</i>		
			3		6 7	/////			/////	
			3		9	/////			/////	
			3		11 12			1/////	/////	
	1		3		13 14					
			3		15 16			<i>\$7777.</i>	/////	
			3		18 19	(1117)			/////	
	1		3		20 21				/////	
			3		22 23				/////	
			4	_	1 2				/////	
			4	1	3 4				/////	-
E			4	\equiv	5					
 			4	\pm	, s					
			4		10 11				/////	
			4	Ŧ	12 13				/////	
<u> </u>			4	#	14 15 16				/////	
			4	1	17 18				/////	
			4	#	19 20				/////	
			4	#	22 23				/////	
			- 4 - 5	1	24 1				/////	
			5	#	3 4					
 			5 5	\pm	5 6					
		l	5	\pm	7 8				/////	
Ė			5	3	20				/////	
<u> </u>			5	#	11 12 13					
		· · · · · · · · · · · · · · · · · · ·	5	=	14 15			<i>[[]]]</i>	/////	
		-	5	Ŧ	16 17				/////	
			5	#	18 29 20				/////	
			- 5	=	21 22				/////	
			5	Ŧ	23 24				/////	
			6 6	\pm	2 3				/////	
			6	\dashv	4 5				/////	
			6	1	6 7				/////	
			6	Ŧ	9				/////	
 			6	\Rightarrow	11 12				/////	
			6	1	13 14				/////	
	1		6	Ŧ	15 16				/////	
			6 6	\pm	17 18 19				/////	
			- 6	=	20				/////	
			6	Ŧ	22 23				/////	
			7	#	1 7				/////	
			7	=	3 4				/////	
	:		7		5				/////	



	1	15	20	97777	17777	07777	/////	177777	/////	177777	
	1	15 15	22 25								
	1	15 16 16	24 1 2								
	1	16 16	3								
	1	16 16	5 6								
	1	16 16	1								
	1	16 16	10 11								
	1	16 16	13								
	1	16 16	15 16								
	1	16 16	18 19								
	1	16 16	20 21								
		16 16	22 23 24								
	1	17 17	1 2								
		17 17	4 5								
	1	17 17	6 7								
	1	17	9								
	1	17	11					VIII			
	1	17	14 15								
	1	17	16 17								
		17	18 19 20								
	1	17 17	21 22					<i>VIII</i>			
	1	17 17 18	23 24 1								
	3	18 18	3								
	1	18 18 18	4 5 6							<i>Y//////</i>	
	1	18 18	7 8								
	1	18 18 18	9 10								
	1	18 18	11 12 13								
	 1	18 18	14 15 16								
	1	18 18	17 18								
	1	18 18	19 20							<i>Y//////</i>	
E	1	18 18	21 22 23								
E	1	18 19	24							<i>Y//////</i>	
	1	19 19 19	3 4								
	1	19	5								
	1	19	7 8								
	1	19 19	10 11								
	1	19 19	12 13								
	1	19 19	15 16								
	1	19	17 18								
	1	19 19	20 21								
	1	19 19	22 23					<i>VIII</i>			
	1	20 20	24 1 2								
	1	20 20	3								
	1	20 20 20	5 6 7								
	1	20	9			(1111)			999)		
	1	20 20 20	10 11 12			(1111)			999)		
	1	20 20	13 14			(1111)			999)		
	1	20 20 20	15 16 17			(1111)			999)		
	1	20 20	18 19			(1111)			999)		
	1	20 20 20	20 21 22			(1111)			999)		
	1	20	23 24						999)	Y TO TO TO	
	1	21 21	2						9999	<i>VIII</i>	
	1	21	4 5						999)	Y TO TO TO	
	1	21 21 21	7								
	1	21 21 21	9 10								
	1	21 21	11 12								
	 1 1	21 21 21	13 14 15								
		21 21	16 17								
	1	21 21 21	18 19 20								
	3	21 21	21 22								
		21 21 22	23 24								
	1	22	2								
	1	22 22 27	4 5								
	 1	22 22 22	7 8								
	1	22 22 23	20								
	 1 1	22 22 22	11 12 13								
	1	22 22	14 15								
	1	22 22 22	16 17 18								
	1	22 22	19 20								
	1	22 22 22	21 22 23								
	1	22 23	24 1								
		23 23 23	2 3 4								
	1	23	5								
	 1	23 23 23	7 8								
	1	23 23	10 11								
	1	23 23	12 13								
	1	23 23 23	14 15 16								
		23 23 23	17 18								
		23 23	19 20								
	 1	23									
	1	23 23 23	22 23								
	3 3 3 3 3	23 23 23 24 24	22 23 24 1								
		23 23 23 24	21 22 23 24 1 2 2 3								

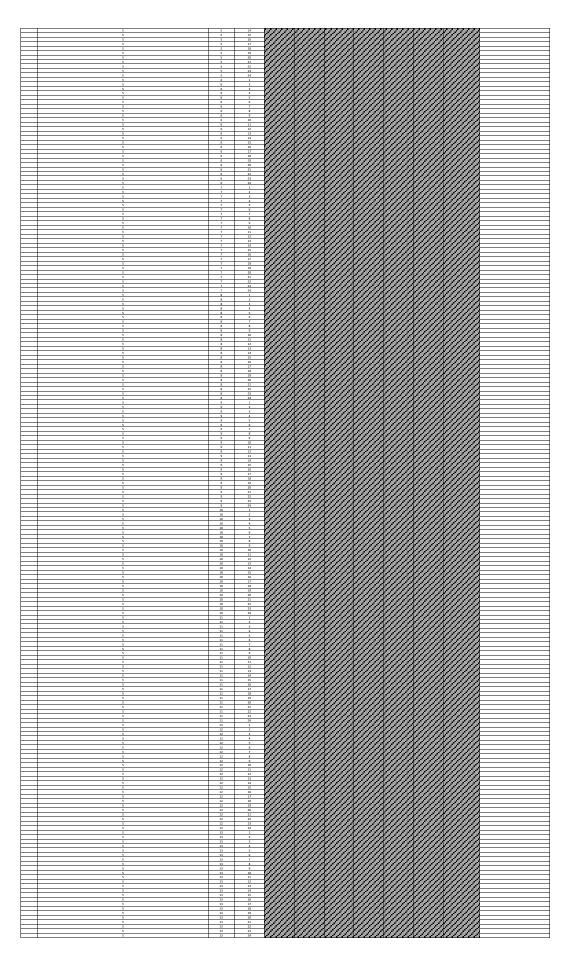
E	1	1	24 24	7 8	1////			(////	<i>(////)</i>
		1	24 24	9				V////	(////)
		1	24 24	11 12	0000	<i>1000</i>	V / / / / /	<i>000.</i>	(////)
		1	24 24 24	13 14 15				<i>17779</i>	/////
		1	24 24	16 17				<i>1777)</i>	/////
	1	1	24 24	18 19				9777	(////)
			24 24 24	20 21 22				V////	<i>(////)</i>
		1	24 24	23 24					
		1	25 25	2				<i>7777</i> 77	<i>/////</i>
		1	25 25	4 5				<i>//////</i>	
		1	25 25	6 7				<i>(1111)</i>	
		1	25 25	9				VIII).	<i>/////</i>
		1	25 25	11 12				V////	(////
		1	25 25	13 14					
		1	25 25	15 16					/////
			25 25	18 19			<i>9777</i> 77	10000	/////
		1	25 25	20				VIII.	(////)
		1	25 25	22 23 24				VIII.	<i>(////</i> //
		1	26 26	1 2					(////
	1	1	26 26	3 4				<i>77777</i> ,	
		1	26 26	5		<i>9999</i>			(////)
		1	26 26	, s			VIII	VIII.	(////)
		1	26 26	10 11					(////
		1	26 26	12 13					(////
		1	26 26 26	14 15					<i>/////</i>
		1	26 26	17 18					<i>/////</i>
	-	1	26 26	19 20					(////)
		1	26 26 26	21 22 25					<i>\/////</i>
		1	26 27	24 1					Y////\
		1	27 27	2 3					Y////
		1	27 27 77	4 5 6					<i>/////</i>
		1	27	7 8					/////
		1	27 27	9					V////
		1	27 27 77	11 12					<i>/////</i>
		1	27	14 14				VIII.	(////)
		1	27	16 17				<i>77777</i> ,	
		1	27 27	18 19					
		1	27	20 21	0000	<i>9000</i>	VIII	VIII)	(////
		1	27 27	23 24					(////
	1	1	28 28	2				<i>19999</i>	/////
		1	28 28 28	4				<i>1777)</i>	/////
		1	28 28 28	5 6 7				V////	<i>(////)</i>
		1	25 25	9					
		1	28 28	10 11				<i>7777</i> 77	<i>/////</i>
		1	28 28 28	12 13					(////)
		1	28 28	15 16				V////	
		1	28 28	17 18				<i>V////</i> 2	<i>\\\\\\</i>
		1	25 25	20 21					/////
	1	1	28 28	22 23			<i>97777</i>	80000	/////
		1	28 29	24 1					
		1	29 29 29	3 4				<i>1999)</i>	<i>(////</i> //
		1	29	5 6					(////
		1	29 29	7 8				<i>77777</i>	<i>/////</i>
		1	29 29	10				<i>//////</i>	<i>{////</i> }
		1	29	12					(////)
		1	29 29	14 15				V/////	(////)
		1	29 29 29	16 17 18					(////
		1	29	19 20					<i>\////</i>
	-	1	29 29	21 22					V////
		1	29 29 10*	23 24					<i>/////</i>
		1	30 30	2					/////
		1	30 30	5					/////
		1	30 30	7 8					/////
		1	30	9					<i>{/////</i> }
		1	30 30	11 12					
			30 30	13 14					Y////
		1	30	16 17					<i>/////</i>
Ė		1	30 30	18 19					/////
		1	30 30 30	20 21 22					V////
		1	30 30	23 24					/////
		1	31 31	1 2					/////
		3	31 31	3 4					<i>(////)</i>
		1	31 31 31	6 7					<i>(////)</i>
		1	31 31	8 9					(////
		3	31 31	10 11					
		1	31 31	13 14					(////
		1	31 31	15 16					<i>\////</i>
Ė		1	31 31	17 18					(////)
		1	31 31	19 20 21					<i>/////</i>
		1	31 31 31	21 22 23					<i>(////)</i>
		1	31	24 1					(////
—		4	1 1	3 4					Y////
		4	1	5 6					V/////
		(1				 111111		V 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1
		4 4	1 1	7 8			1/////		(/////
			1 1 1 1 1	7 E 9					
			1 1 1 1 1 1 1 1 1	7 = 9 = 10 = 21 = 12 = 13					
			1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	7 8 9 20 21 12 12 13 14 15 15					





_		4	18 18	26 17	V////	(/////	07777	/////	(7777)	/////	(/////	
=	,	4	18	18 19								
		4	18	20 21					9000			
=		4	18 18	22 23 24					<i>(1111)</i>			
		4	19	1 2					9000			
_	-	4	19	4 5	<i>/////</i>	V////	VIII.		<i>10000</i>	9999.		
		4	19	7	/////	<i>10000</i>	VIII.		V////	9999.		
=		4	19	9								
		4	19	11								
=		4	19	14 15								
		4	19 19 19	16 17								
=		4	19	19 20								
		4	19	21		VIII			VIII)	999		
		4	19 20	24 1								
		1	20 20	3								
		4	20 20 20	5 6								
		4	20 20 20	7 8								
	4	4	20 20	10 11			(1111)			999)		
		4	20 20 20	12 13			(1111)			999)		
	4	4	20	15 16			9777			999))		
		4	20	17 18			9777			999))		
		4	20	20 21								
=	4	4	20 20	22 23								
		4	21 21	1 2								
\equiv		4	21 21	3 4								
		4	21 21	5 6 7								
		4 4	21 21 21	9 10								
		4 4	21 21	11 12								
		4	21 21 21	13 14 15								
		4	21 21	16 17								
\equiv		6 6 6	21 21 71	18 19 20								
	,	4 4	21 21	21 22								
		4	21	23 24	/////		VIII.		<i>111111</i>	9777.		
		4	22 22 22	2 3								
		4	22	5								
_	-	4	22 22	7 8								
	4	4	22 22	9								
		4	22 22 22	12								
	4	1	22 22	14 15								
		4	22 22 22	16 17 18								
	4	4	22 22	19 20								
		4	22 22 22	21 22 25								
	4	4	22 23	24						9777		
_		4	23 23 23	3 4		<i>1000</i>			VIII.			
	4	4	23 23	5						999)		
		4	23 23 23	7 E						999)		
		4	23	10 11								
=		4	23 23 23	13 14								
		4	23	15 16								
	,	4 4	23 23	18 19								
		4	23	20 21								
=		4	23 23 23	23 24								
=	-		24 24	2								
		4	24 24 24	3 4 5								
	-	4	24 24	7								
=		4	24 24	9								
		4 4	24 24 74	21 22 13								
		4 4	24 24 24	14 14 15								
		4 4	24 24 24	16 17 18								
		4	24 24	19 20								
\equiv		6 6 6	24 24 24	21 22 25								
		4	24 25	24 1								
=	4	4	25 25	3								
=		• •	25 25 25	3 6								
=	4	4	25 25	7 8								
		1 1	25 25 25	9 20 11								
\equiv			25 25	12 13								
		• •	25 25 25	15 15								
=	4	4	25 25	17 18								
		4 4	25 25	20 21								
=	4	4	25 25	22 23								
=		· · · · · · · · · · · · · · · · · · ·	26 26	1 2								
\equiv			26 26	3 4								
		•	26 26 26	5 6 7								
_	-		26 26	2								
=	4	1	26 26 26	10 11 12								
				13	0////					11111		
	4 4 4	4	26 26	14	111111	11111			11111			
	4	6 6 6	26 26 26 26 26	14 15 16 17								
	4 4 4 4 4	6 6 6	26 25 25 25 25 25 25 25 25 25	14 15 16 17 18 19								
			26 26 26 26 26 26 26 26 27 26 27 28 28	14 15 16 17 18 19 20 21								
			25 25 25 25 25 25 25 25 25 25 25 25 25 2	14 15 16 17 18 19 20 21 22 23 24								

	-		27	3 4				
			27	5				
			27 27	8 9				
			27 27	10 11				
			27 27 27	12 13 14				
			27 27	15 16				
			27 27	18 19				
			27	20 21				
			27	23 24				
			28 28	2		W.		
			28 28	4 5				
			28 28	7				
			28 28	9				
			28 28 28	11 12				
	4		28 28	14 15				
			28 28 28	15 17 18				
			28 28	19 20				
			28 28 28	22 22 23				
			28 29	24 1				
			29 29 29	3 4				
			29 29 70	5 6 7				
			29 29	1 9				
Ē			29 29 29	10 11 12				
			29 29	13 14				
E			29 29 29	15 16 17				
			29 29	18 19				
			29 29 29	20 21 22				
			29 29 30	23 24				-
			30 30	2 3				
			30 30	5 6				
E			30 30	7 8				
			30 30 30	9 10 11				
			30 30	12 13				
E			30 30 30	14 15 16				
			30 30	17 18				
			30 30	20 21				
			30 30	22 23				
			1 1	1 2				
			1	4				
			1 1	6 7				
			1	9				
			1	11 12				
			1 1	13 14 15				
			1	16 17				
			1 1	18 19 20				
			1	21 22				
			1 2	24 1				
			2 2 2	3 4				
			2 2	5 6		000		
			2 2	8 9				
			2	10 11				
			2 2	13 14				
E			2 2 7	15 16				-
			2 2	18 19				
F			2 2 2	20 21 22				
			2 2	23 24				
E			3	2 3				
E			3 3	4 5				-
E			3	7 8				
Ē			3 3	9 10 11				
E			3	12 13				
Ē			3	14 15				
			3	17 18				
F			3 3	19 20 21				
			3	22 23				
E		- -	4 4	24 1 2				
			4	4				
E			4 4	6 7				
			4 4	3 9 10				
E			4 4	11 12				
E			4	13 14				-
		i	4 4	16 17				
F			4	18 19 20				
			4	21 22				
			4 4 5	23 24 1				
			5 5	2				
E			5 5	4 5 6				
			5 5	7 8				
			5 5 5	9 10 11				_



		5		14 14	1 2	/////			V////	<i>77777</i> 73	
		5	1	14	4						
		5		14 14 14	5 6 7						
		5		14 14	1 9				<i>VIII</i>		
		5		14	10 11				<i>VIII</i>		
		5		14	13 14				<i>VIII</i>		
		5		14 14	15 16				<i>VIII</i>		
		5		14	18 19				<i>VIII</i>		
		5		14 14	20 21						
		5		14 14	23 24				<i>VIII.</i>		
		5	1	15 15	1 2						
		5		15 15	4 5						
		5	1	15 15	6 7				<i>VIII</i>		
		5		15 15 15	9 10						
		5		15 15	11 12				<i>VIII</i>		
		5		15 15	13				<i>VIII</i>		
		5		15 15	16 17				<i>VIII</i>		
		5		15 15	18 19				<i>VIII</i>		
		5		15 15	21 22				<i>11111.</i>		
		5		15 15	23 24				<i>VIII</i>		
		5		16 16	2 3				<i>VIII.</i>		
		5		16 16	4 5						
		3		16 16 16	6 7 8						
		5		16 16	9						
	-	5		16 16 15	11 12 13						
		5		16 16	14 15						
	_	3		16 16 1 ⁶	16 17 18						
				16 16	19						
		5		16 16	21 22				<i>VIII</i>		
	_			16 17	24 1						
		5		17	3						
		5 5		17 17	5 6						
	\exists	5		17	7 8						
		5		17 17 17	9 10 11						
		5		17	12 13				<i>000.</i>		
		5		17 17	14 15				<i>000.</i>	90000	
		5		17 17	17 18				VIII.		
		3		17 17	19 20 21						
		5		17	22 23				<i>/////</i>		
		5		17	24 1				<i>/////</i>		
1		5		18	3 4				<i>11111.</i>		
1		5		18 18	5 6						
1		5		18	1 2						
1		5		18 18	10 11				9777	10000	
1		5		15	13 14				977		
1		5		18 18	15 16				9777	10000	
1		3 5		18 18	18 19				977		
1		5		18	20 21				9777	10000 X	
1		5		18 18 18	22 23 24						
1		5		19 19	2				9777	HIII N	
1		5		19 19	4 5					10000 X	
1		5	1	19 19	6 7				9777		
1		5		19 19	9					10000	
1		5		19	11 12						
1	J			19 19	13 14						
1		3 5 5		19 19	16 17						
1	==	5		19 19	18 19 20						
1	_				21 22						
1		5		19 19	23 24						
1		5 5		20 20	2 3						
1		5			5						
1	-	5		20 20 20	5 7 8						
1		5		20 20	9						
1	I	3		20 20 20						8/////	
1		5		20	14 15						
1	_			20 20 20							
1		3 5 5			19 20						
1 1 2 2 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	==	3			21 22 23						
1 1 2 2 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	_	5 5		20 21	24 1					8/////	
1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1		5		21 21 21	3						
1 1 2 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7		5 5 5			5 6						
1 2 2 2 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1		5		21 21	7 8					<i>{/////</i> }	
\$ 22 M \$ 22 S \$ 22 S \$ 22 S \$ 22 S \$ 22 S \$ 22 S \$ 23 S \$ 24 S \$ 25 S		3		21 21 21	9 10 11					(/////	
\$ 22 54 55 55 55 55 55 55 55 55 55 55 55 55		5		21						(/////	
1 13 14 1 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2	=	5		21 21							
5 22 19	_			21 21 21							
	=	5		21 21	19 20						<u> </u>
1 5 5 5	_	5 5		21 21 21							
1 2 2 2		5		21 22	24 1						
1 2 1		3		22 22 22	2 3 4						
1 2 1		5			5						
3 22 7	I	3		22 22 27	7 8						
5 T T T T T T T T T T T T T T T T T T T				22	10		Y////X/////	/////	(1111)		

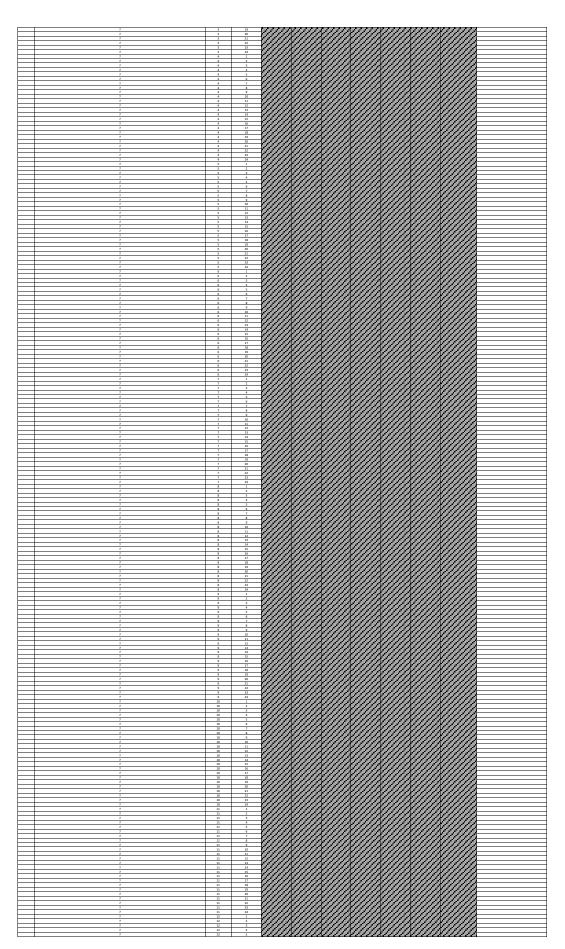
1			3	22	12	97777	/////	07777	///////////////////////////////////////	777	7777	(/////	
1			3	22 22	14 15					990			
1			3	22 22	16 17					990			
1			5	22 22	18 19			9000			9999		
1				22	20 21	9777		VIII (7777			
1			3	22 22	23 24								
1			5	23 23	1 2			<i>0000</i>	999999	//X			
1			3	23 23	4					99X			
1			3	23	6 7	9 <i>999</i>		97777		11X	9777		
1			3	23 23	9			V////	<i>9777</i> 877	99X	999		
1			5	23 23	10 11			9000		77X	9999	<i>//////</i>	
1			3	23 23	12	9777			90000	77X			
1			3	23	15 16				(1111)(1)	97X)			
1			5	23 23	17 18	0000	V	0000	<i>9999</i>	990	999)		
1			5	23 23	19 20			(1))))		M			
1			5	23 23 21	21 22 23	9000				990			
1			3	23 24	24 1			97777		777	/////	<i>//////</i>	
1			5	24 24	3			<i>9000</i>			9999		
1			3	24	5	9777		VIII (7777			
1			3	24 24	7 8								
1			5	24 24	9 10			9 <i>999</i>	999999	//X			
1			5	24 24	11 12			9000		111	999		
1			3	24 24	13	80000		V////	<i>9000800</i>	990			
1			3	24 24 24	15 16 17					///			
1			3	24	18 19					7/%			
1		_	3	24 24	20 21					11/1			—
1			3	24 24	22 23					11/10			
1			5	24 25 25	14 1 2					////			
1			3	25 25	3 4					////			
1			3	25 25	5					1///			
1			5	25 25	7 8					7/1/			
1			5	25 25	10 11					1/1/			
1	E		3	25 25	12					1/10			
1		-	3	25 25	14 15					///			
1			5	25 25	16 17					11/1			
1			3	25 25	19 20	9000		9000		778	9999		
1			3	25 25	21 22		<i>10000</i>		(1111)(1)	99X)			
1			5	25 25	23 24				(1111XII)	990			
1			5	26 26	1 2					990			
1				26 26 26	4	9999				990			
1			5	26 26	6 7	<i>1000</i>		<i>77777</i>		1111	/////	<i>//////</i>	
1			5	26 26	9			9000			9999		
1			3	26 26	10	9000			(1111)(1)	777			
1			3	26 26	13 14								
1			5	26 26	15 16			VIII	999999	//X			
1			5	26 26	17 18			9000		111	999		
1			3	26 26	19 20	9000		V////	V/////////////////////////////////////	<i>99</i> 0	999		
1			3	26 26	22 23	(1111)		9000	8000000	W.	999		
1			5	26 27	24 1			<i>9999</i>		777	9999		
1			5	27 27	2 3	9777			(1111101)	77X			
1				27 27 27	4 5 6					$\mathcal{D}_{\mathcal{N}}$			
1			3	27	7 8		<i>9000</i>	0000	900000	99X)	999)	<i>10000</i>	
1			5	27	9 10			(1))))		M			
1			3	27 27 27	11 12	(1111)				990			
1			3	27	14 15	<i>1777</i>		<i>77777</i>		1111		<i>//////</i>	
1			3	27 27	16 17					1///			
1			3	27 27	18 19	9999			(1111)(1)	777			
1				27 27 27	20 21 27					1/1/			
1			3	27 27	23 24					1/1/			
1		_	5		1 2					///			
1			3	28 28	3 4					11/1			
1			, 5	28 28 28	5 6 7					1/1/			
1			5	28 28	9					7/%			
1			3	28 28	10 11					7/1/			
1				28 28 78	12 13					1110			
1			3	28 28	15 16					11/1			
1			3	28 28	17 18					////			
1	Ξ		3	28	19 20					////			
1				28 28 78	21 22 21					1/1/			
1			3	28 29	24					7/1/			
1			3	29 29	2 3					1/10			
1			5	29 29	4 5					1//			
1			5	29 29 25	7					11/1/			
1			3	29 29	9 10					///			
1			5		11 12					7/%			
1			3		13 14				<i>[[]][][[]</i> []	7/10			
1				29 29 70	15 16 17					1110			
1			3	29 29	18 19					11/1			
1 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2			5		20 21					///			
		-	3	29 29	22 23					///			
			5	29 30	24 1					7/1/			
				30 30	2 3 4					1/10			
1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1			5	30	5 6					1/1/			
			3	30 30	7 8					1//			
			3	30 30	9 10					11/1			
			3	30 30	12 13					///			
1 5 15 15 5 5 15 1 5 15 15 1 5 15 15 1 5 15 15 1 7 15 15 15 1 7 15 15 15 1 7 15 15 15 15 15 15 15 15 15 15 15 15 15			3		14 15					///			
			3	30 30	16 17				<i>[[]][][[]</i> []	7/10			
				30 30	18 19 20					1110			
			3	30	20 21 22					///			

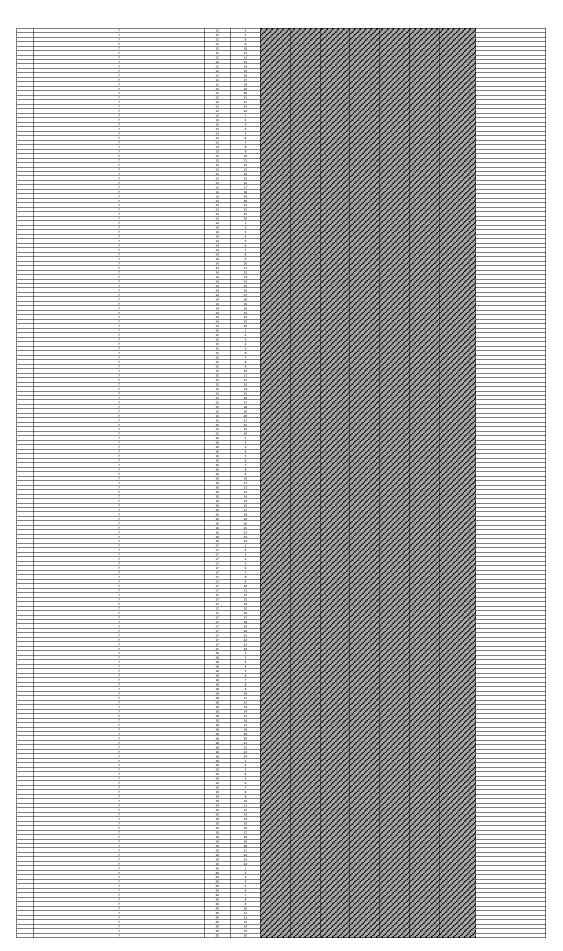
	4
	
	
	
	
	/
	
	
	
	4
	
	<u> </u>
	
	4
	
	1
	<u> </u>
	
	
	1
	
	
	1
	
	4
	
1	
1 1 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2	
	4
	
	1
	<u> </u>
	
	
	<u> </u>
	4
	<u> </u>
	1
: : : : : : : : : : : : : : : : : : : :	<u> </u>
	1
	
	<u> </u>
	
	4
	
<u> </u>	<u></u>
	<u> </u>
	1
	
<u> </u>	4
	
	
<u> </u>	<u></u>
7 2 2 (/////////////////////////////////	
	4
	
<u> </u>	<u></u>
<u> </u>	

	6 4			10	97777	/////	07777	/////	177777	V////	177777	
	6	8		12 13								
	6 6	3 3		14 15								
=	5 6	8		17 18								
	6	-		19 20								
	6	-		22 23								
_	6 6	9		24 1								
_	6	9		3 4								
	6	9		5								
_	6	9		9								
	6	9		10 11								
_	6	9		12 13								
=	6	9		15 16								
	6	9		17 18 19								
	6	9		20 21								
_	6 6	9		22 23 34								
	6	10 10		2					<i>VIII</i>	9999		
_	6 6	10 10		4 5					VIII		<i>111111</i>	
	6 6	10 10		5 7					VIII		<i>111111</i>	
	6 6	10		2 10	9000				VIII			
	6	10		11 12					<i>VIII</i>	9000		
	6 6	10 10	Ħ	13 14 15			<i>[[]]</i>					
	6	10	<u></u>	16 17								
	6 6	10	4	18 19			<i>[[]][]</i>					-
	6	10	<u></u>	21 22			<i>[[]][]</i>					
	6	10 10	1	23 24			<i>[[]][]</i>					-
_	5 6	11 11 11	_	1 2 3								
=	6	11 11	=	4 5								
_	5 5	11 11	=	5 7 8								
=	6	11 11	=	9 10								
=	5 6	11 11 17	#	11 12 13			<i>[[]]</i>					
	6	11		14 15			<i>[[]]</i>					
	6	11		16 17								
	6 6	11 11		19 20								
	6	11 11		21 22								
_	6	11 11 12	=	23 24 1								
	6	12 12		2 3								
_	6	12 12		5 6								
=	6	12 12		7 8								
_	6	12 12		9 10 11								
=	6	12 12		12 13	9777				<i>VIII</i>			
_	6	12 12		14 15			<i>Y/////</i>					
=	6	12 12		17 18			<i>Y/////</i>					
_	6	12 12		19 20 21			9////					
	6	12		22 23			9////					
_	5 6	12 13		1 2			9////					
	5 6	13 13		3 4			9////					
_	6 6	13 13		5 6			9////					
	6 6	13		3 9			9////					
	6	13		10			9////					
_	6	13		13 14			9////					
	6	13		15 16			9////					
_	6 6	13 13		17 18 19			9////					
	6	13 13		20 21								
	5 5	13 13	#	22 23 24								
	5 5	14		1 2								
_	6 6	14 14 14	#	3 4 5								
	6	14		6 7								
=	6	14 14 14	#	9 10							<i>Y/////</i>	
_	6	14 14	#	11								
	6 6	14 14	Ŧ	13 14 15								
_	6 6	14 14	= -	16 17								
	6	14	7	18 19								
_	6 6	14 14 14	#	20 21 22								
	6	14 14		23 24								
	6 6	15 15	#	1 2 3								
	6	15 15		4 5								
	6	15 15	#	5 7 8								
=	6	15	#	9								
	6 6	15 15	Ŧ	11 12			9////					
=	6	15 15	#	14 15								
	6	15 15	7	16 17			9////					
_	5 6	15 15 15	#	19 20								
	6	15 15		21 22								
=	6	15		23 24								
	6	1.6			THE RESERVE OF THE PERSON NAMED IN	11111	V 1 1 1 1 1 1					
	6 5 6	16 16 16	1	2	<i>{/////</i> /							
	5 5 5 5 5 6 6 7 7 7 7 7 7 7 7 7 7 7 7 7	16 16 16		2 3 4 5								
	5 6 6 6 6 6 6 6 6 6 6 6 6 6 6 6 6 6 6 6	16 16 16 16 16 16 16 16		2 3 4 5 6 7								
	5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5	16 16 16 16		2 3 4 5 6 7 8 9								
	5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5	16 16 16 16		2 3 4 5 6 7 8 9 10 11 12 13								
		16 16 16 16 16 16 16 16 16 16 16 16		2 3 4 5 6 7 7 8 9 10 11 12 12 13 24 15								
		16 16 16 16 16 16 16 16 16 16 16		2 3 4 4 5 6 7 7 8 9 20 11 12 22 13 24 15 16 17 18								

	////////	V/////////////////////////////////////	///////////////////////////////////////	21 22	6	
				25 24	6	
	///////////////////////////////////////			2 3	6	
				4 5	5 6	
	///////////////////////////////////////			7	6	
				9	6	
	///////////////////////////////////////			11	6	
				14 15	6 6	
	///////////////////////////////////////			16 17	6	
	///////////////////////////////////////			19 20	6	
				21 22	6	
	///////////////////////////////////////			23 24 1	6	
				2 3	6	
	///////			5 6	6	
				7 8	6 6	
	///////////////////////////////////////			10	6	
				12	6	
	///////////////////////////////////////			14 15	6	
				17 18	6 6	
				19 20	6	
1				22 22 23	6	
1				24 1	6	
1	///X///X///X///X///X///X			3 4	6	
1				5	6	
1	///X///X///X///X///X///X			7 8 9	5 5	
1				10 11	6	
1				12 13	6 6	
1	///X///X///X///X///X///X			15 16	6	
1				17 18	6 6 6	
1	///X///X///X///X///X////X			20 21	5 5	
1	///////////////////////////////////////			22 25	6	
1	///X///X///X///X///X////X			1 2	6	
1				4	6	
1	///////			5 6 7	6	
1				3 9	6 6	
1	///////			10 11	6	
1			//////////////////////////////////////	13 14	6	
1	///////			15 16	6	
1				18 19	6	
1	///////////////////////////////////////			20 21	6	
1				23 24	6 6	
1	///////////////////////////////////////			2	6	
1			///////////////////////////////////////	4 5	6	
1	///////////////////////////////////////		///////////////////////////////////////	7	6	
1			///////////////////////////////////////	9	6	
1	///////////////////////////////////////		///////////////////////////////////////	11 12	6	
1			///////////////////////////////////////	14 15	5 6	
1	///////////////////////////////////////		///////////////////////////////////////	16 17	6	
1			///////////////////////////////////////	19 20	6	
1			///////////////////////////////////////	21 22	6	
1	///////////////////////////////////////		//////////////////////////////////////	23 24 1	6	
1			///////////////////////////////////////	2 3	6	
1	///////////////////////////////////////		//////////////////////////////////////	5 5	6	
1	///////////////////////////////////////			7	6	
1				9 10	5 6 6	
1	///////////////////////////////////////			12 13	6 6	
1				14 15	6 6 5	
1				16 17 18	5 5	
1	///////////////////////////////////////			19 20	6 6	
1	//////////////////////////////////////			21 22 23	6	
1	///////////////////////////////////////			24 1	6	
1				3 4	6	
1	///////////////////////////////////////			5	6	
1 2 3 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4				7 B	6 6	
1 2 3 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4	///////////////////////////////////////			10 11	5 6	
1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1				12 13	6 6	
1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	///////////////////////////////////////			16 15	6 6	
5 2 1				17	6 6	
5 2 1				20 21	6	
5 2 1				22 25	6	
1	///////////////////////////////////////			24 1 2	6	
	///////////////////////////////////////			3 4	6	
				5 6 7	6	
	///////////////////////////////////////			3	6	
				10 11	6 6	
1 21 15 1 21 15 1 21 15 1 21 15 1 21 25 1 2	///X///X///X///X///X////X			12 13 14	6 6	
1 2 2 2 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1				15 16	6	
• • • • • • • • • • • • • • • • • • • •	///X///X///X///X///X////X			17 18 19	6	
2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2				20 21	6	
				22 25 24	6	
: 2 :				1 2	6	
				3 4	6 6	
				6 7	6	<u> </u>

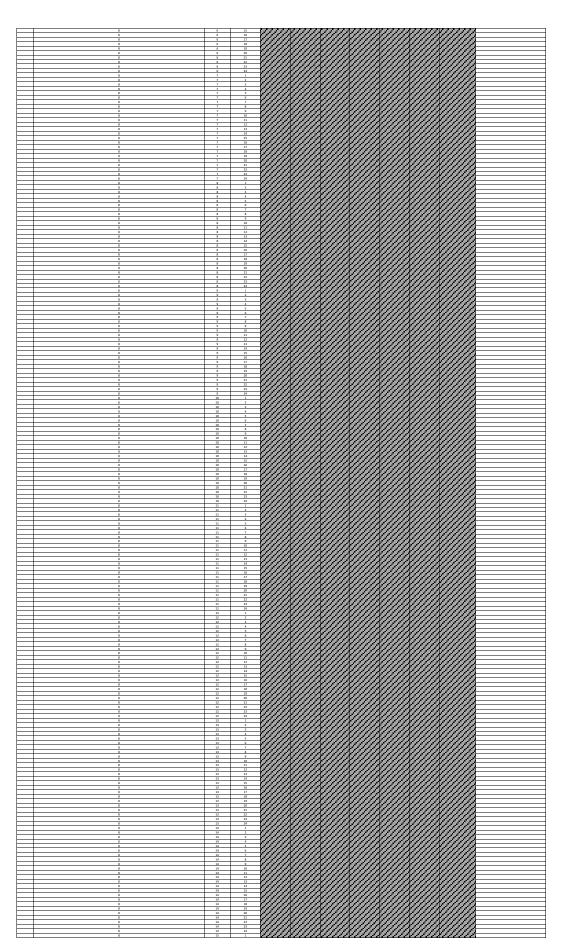
	6	25 25		97777	/////	///////////////////////////////////////		
	6 6	25 25	10 11					
	6	25 25 25	12 13 14					
	5 6	25 25	15 16					
	6	25 25	17 18					
	6	25 25	20 21					
	6	25 25	22 23					
	6	26 26	1 2					
	6	26 26	4					
	6	26 25	6 7					
	6	26 26	9					
	6	26 26 26	10 11 12					
	6	26 26	13 14					
	6	26 26 26	15 16 17					
	6	26 26	18 19				<i>999</i>	
	6	26 26 26	20 21 22	9777				
	6	26 26	25 24				<i>999</i>	
	6 6	27 27 27	2 3					
	6 6	27 27	4 5					
	6 6	27 27 27	7 8	9000				
	6	27	9				<i>000.</i>	
Ė	6 6	27 27 27	11 12					
	6	27	14 15					
E	6 6	27	16 17					
	6	27 27 27	19 20					
E	6	27	21 22					-
E	5 6	27 27 28	23 24 1					
	6	28 28	3				<i>999</i>	
	6 6	28 28 28	5 6					
	6 6	28 28	7 8					
E	5 6	28 28 28	9 10 11					
	6	28 28	12					
	6	28 28	14 15	9777			<i>000</i>	
	6	28 28	17 18				999),	
	6	28 28	19 20	9777			<i>000.</i>	
	6	28 28 28	21 22 23					
	6	28 29	24 1					
	6 6	29 29 29	3 4	9777				
	6	29 29	5 6					
	6	29 29 29	7 8 9					
	6	29 29	10 11	9777			<i>000.</i>	
	6	29 29 29	12 13 14					
	6	29 29	15 16					
	6	29 29 29	17 18 19					
	6	29 29	20 21					
	6 6	29 29 29	22 23 34					
	5 6	30 30	1 2					
	6 6	30 30	4					
	6 6	30	6 7					
	6	30 30	9					
	6	30 30	11 12					
	6	30 30	13 14					
	6 6	30 30	15 16 17					
	6	30 30	18 19					
	5 5	30 30 30	20 21 22					
	5 5	30 30	23 24					
	7 7 7	1 1 1	2 3					
	7	1	4 5					
E	7	1 1	6 7 8					
E	7	1	9					_
E	7	1	11 12					
E	7	1 1	13 14 15					
	7	1	16 17					
	7	1 1	18 19 20					
	7	1	21 22					
	7 7 7 7 7	1 2	23 24 1					
	7	2 2	2					
	7	2 2 2	5 6					
E	7	2 2	7 8					
E	7	2 2 7	9 10					
E	7	2 2	12					
	7	2 2	14 15					
	7	2 2 2	16 17 18					
	7	2 2	19 20					
	7	2 2 2	21 22 23					
	7	2 3	24					
	7 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7	3 1	2 3 4					
	7	3	5 6					
	7	3	7 8					
	7	- 1						
	7 7 7	3 3	9 10 11					
	7 7 7 7 7	3 3 3 3 3	9 10 11 12 13					
	7 7 7 7 7 7 7	3 3 3 3 3 3 3	9 10 11 12 13 14 15 16					



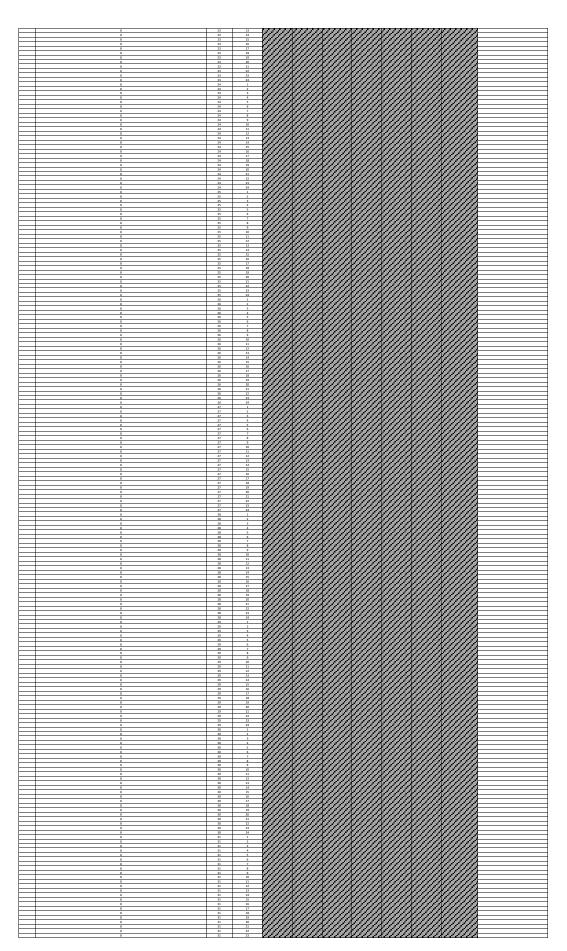


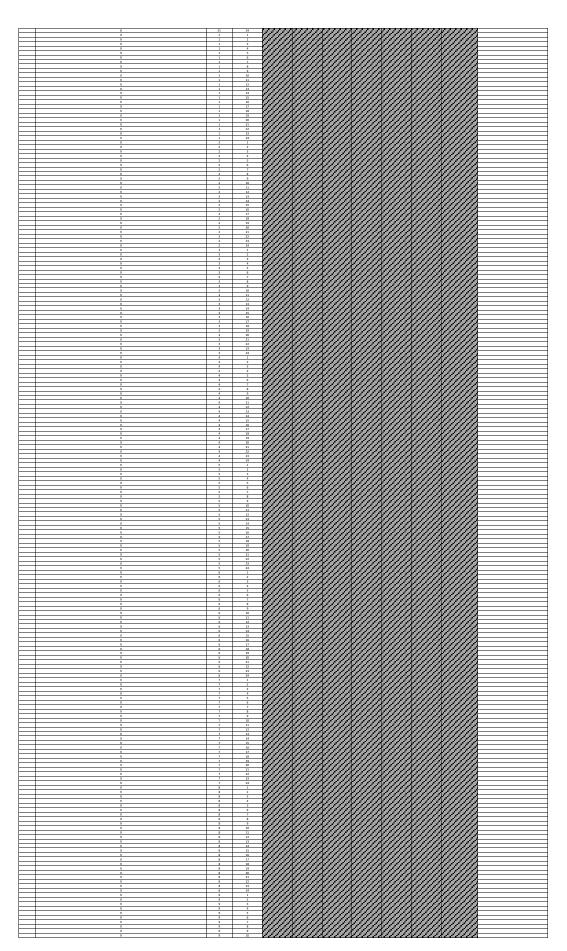
	7		20	17	97777	17777	07777	/////	177777	V////	177777	
	7		20	19 20								
	7		20 20	22 23								
	7 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7		20 21 21	24 1 2								
	7		21 21	3								
	7		21 21 21	6 7								
	7		21 21 21	9 10								
	7		21 21	11 12								
	7		21 21	14 15								
	7		21 21 21	16 17 18								
	7		21 21	19 20								
	7		21 21	22 23								
	7		21 22 22	24 1 2								
	7		22 22	3 4								
	7 7 7 7 7 7		22 22 22	5 6 7					<i>VIII</i>			
	7		22 22 22	9 10								
	7		22 22	11 12								
	7		22 22	13 14 15	<i>/////</i>							
	7		22 22 22	16 17 18								
	7		22 22	19 20								
	7		22 22 22	21 22 23								
	7		22 23 21	24								
	7		23 23	3 4								
	7	·	23 23 23	5 6 7								
	7		23 23	9								
	7	· · · · · · · · · · · · · · · · · · ·	23 23 23	10 11 12								
E	7		23 23 23	13 14 15								
	7		23 23 21	16 17								
	7		23 23	19 20								
	2		23 23 23	21 22 23								
	7		23 24	24 1								
	7		24 24 24	3 4								
	7		24 24 24	5 6 7	<i>11110</i>							
	7		24 24	3					<i>VIII</i>			
	7		24 24 24	10 11 12								
	7		24 24 24	13 14								
	7		24 24	16 17								
	7		24 24 24	18 19 20								
	7		24 24	21 22								
	7		24 25	24 1								
	7		25 25 25	3 4								
	7		25 25	5				9 <i>999</i>				
	7		25 25 25	9								
	7		25 25 25	10 11 12								
	7		25 25	13 14								
	7		25 25	16 17								
	7		25 25 25	18 19 20								(
	7		25 25	21 22						9999		
	7		25 25 26	24 1								
E	7		26 26 26	3 4								
	7		26 26	5 6	<i>(////</i>							
	7		26 26 26	7 8 9								
Ħ	7		26 26 26	10 11 12								
	2		26 26	13								
	7	· · · · · · · · · · · · · · · · · · ·	26 26	15 16 17								
	7		26 26 25	18 19 20								
	7		26 26	21 22	/////							
	7		26 26 27	23 24 1								
	7		27 27 27	2 3 4								
	7		27 27	5 6								
	7	·	27 27 27	7 8 9								_
	7		27 27	10 11								
	7	· · · · · · · · · · · · · · · · · · ·	27 27 27	12 13 14								
	2		27 27 27	15 16 17								
	2		27 27	18 19								
	7		27 27 27	21 22								
	7	· · · · · · · · · · · · · · · · · · ·	27 27 28	23 24 1								
	7		28 28 28	2								
E	7		28 28 28	5 5								
Ė	7	-	28 28 28	7 E 9								
	7		28 28	10 11								
	7 7 7		28 28 28	12 13 14								
	7		28 28 28	15 16								
	,		28 28 28	18 19								
E	7		28 28 28	20 21 22								
	7		28 28 28	23 24								
	7		29 29	2 3								
												· ·

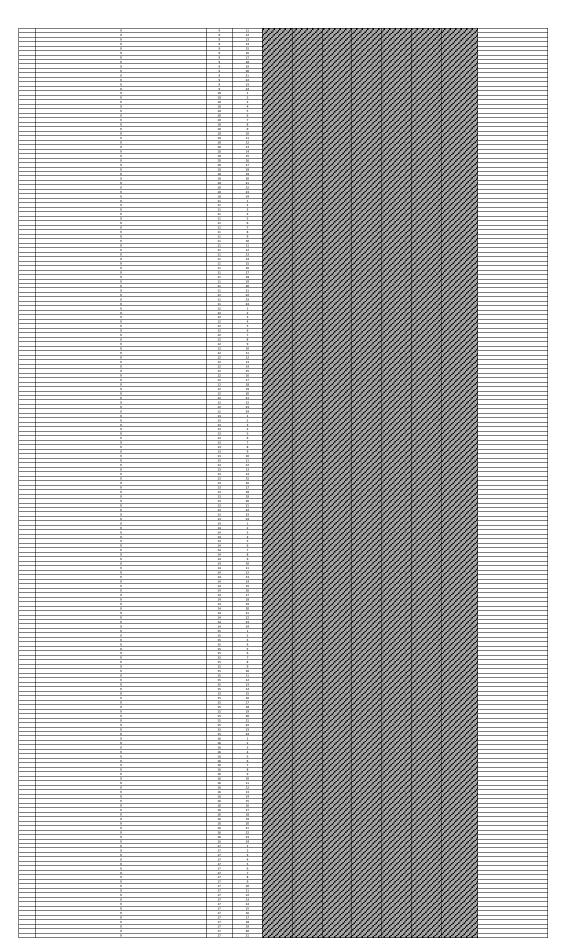
	7 7		29 29	-	4 5	/////	(////	0000	1////	/////	
	7		29 29		6 7			9000.	<i>VIII</i>		
	7		29 29		9	<i>9999.</i>		19 <i>000.</i>	V////	/////	
	7 7 7		29 29 29	#	10 11 12			8000	WW	/////	
	7		29 29		13 14			//////		/////	
	7		29 29		15 16			9////	9////	/////	
	7 7 7		29 29 29		17 18 19			<i>}}}}}</i>	9000	/////	
	7		29 29		20 21			9000		/////	
	7		29 29		22 23	/////				/////	
	7		29 30 30		1 1					/////	
	7		30	=	3 4			9000.	V////	/////	
	7		30 30		5 6			8000			
	7		30 30		7 8			8000		/////	
	7		30	=	10 11	9999		8000.	<i>9000</i>	/////	
	7		30 30		12 13			N////	<i>10000</i>	/////	
	7 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7		30 30		14 15			<i>}}}}}</i>	9000	/////	
	7		30	=	17 18			0////	<i>VIII</i>	(////	
	7		30 30		19 20	/////				/////	
	7		30 30		21 22					(////)	
	7		30 31		24 1	<i>999</i>		9000.	V////	/////	
	7		31 31		3			/////		/////	
	7		31 31		5			/////		/////	
	7		31		7			<i>7000</i>	9000	/////	
	7 7 7 7		31 31 31	#	9			/////		/////	
	7	·	31 31	⇟	11 12					(////)	
Ė	7 7		31 31	#	13 14						
	7		31 31	#	15 16 17					/////	
	7	·	31 31	⇟	18 19					/////	
	7 7		31 31	7	20 21					/////	
	7		31 31	#	22 23 74			/////		/////	
	7 8		1 1	#	1 2			//////	(////	(////	
			1	Ⅎ	3					/////	
ÞΞ	3		1	=[5						
			1	#	, E 9						
			1		10 11			8000.	<i>1000</i>	/////	
			1		12 13			/////		/////	
			1		14 15			<i>7000</i>	9////	/////	
			1	=	17 18			<i>}{}}</i>	MM	/////	
			1 1		19 20	<i>000</i>		0000		/////	
			1		21 22			//////		/////	
			1 2		24 1	/////			V////	/////	
			2 2		2			8000		/////	
			2		5			9977).		/////	
	3		2 2		5 7 8			<i>9000</i>	<i>\\\\\\</i>	/////	
			2 2		9			<i>}}}}}</i>	9000	/////	
	5 5		2 2		11 12			9////	<i>911111</i>	/////	
			2		13	/////		7////	<i>VIII</i>	/////	
			2 2		16 17	9777)		0////		/////	
			2 2		18 19						
			2		20 21	999);		8000	V////	/////	
			2 2		23 24			<i>Y////</i>		/////	
	***		3		1 2			//////		/////	
			3		3 4			9000	9000	/////	
			3	_	6 7			<i>}}}}}</i>	MM	/////	
			3	=	E 9	/////				/////	
			3		10 11					/////	
			3	#	12 13 14					(////	
E	3		3	=	15 16					/////	
		-	3	7	17 18						
			3	#	19 20					/////	
			3	#	21 22 23				(/////	/////	
			3 4	⇟	24 1			0/////		/////	
ÞΞ	3		4	=[3					/////	
			4	#	5 6					(////	
	3		4 4	#	7 8					/////	
			4	1	9					/////	
E	3		4	1	11 12			/////		/////	
			4	#	13 14 35				8/////	/////	
E	3		4	=	16 17					/////	
			4	⇉	18 19						
ÞΞ			4	=[20 21					/////	
			4 4	#	22 23 24					/////	
			5	=	1 2					/////	
			5	Ⅎ	3				(/////	/////	
ÞΞ	3		5	=[5					/////	
			5	#	7 8 9					(////	
	3		5	#	10 11					/////	
	3		5	1	12 13					/////	
	3		5		14 15			//////		/////	
			5	#	16 17 38				8/////	/////	
			5	#	19 20						
			5	⇉	21 22					/////	
ÞΞ			5	=[23 24					/////	
			6 6	#	2 3					/////	
			6	=	4 5					/////	
			6	7	5 7				(/////	/////	
	\$ \$ \$		6		9			//////		/////	
	2 2 3 4 4 5 5		6 6 6 6		9 10 11 12						

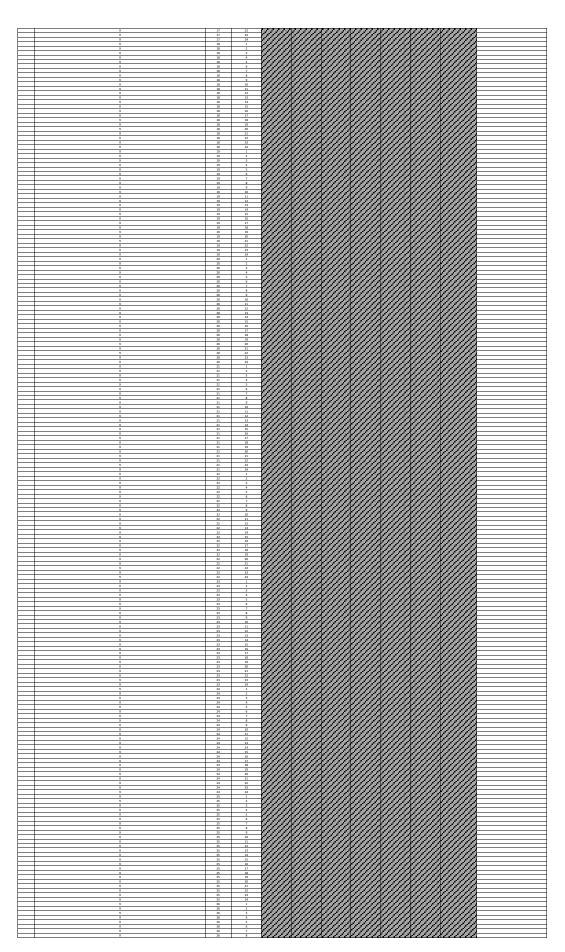


1		
1		
1		
1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1		
1		
1 1 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2		
1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1		<i>\\\\\\\</i>
1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1		*****
		X/////=======
8 35 22 8 36 23		<i>X/////</i>
		8////
	777Y777	8/////
1 17 3 1 17 4		\$(((()))
8 27 5	999099	\$////
1 2 7 1 9 1		<i>(////)</i>
1 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2	/////////	<i>\$/////</i>
8 37 32 8 97 33		<i>\$////</i>
1 27 24 4 27 25		<i>\\\\\\</i>
5 27 23 24 24 24 24 24 24 24 24 24 24 24 24 24		X/////
8 17 19 8 17 20		<i>\(\(\(\(\) \\ \)</i>
8 17 21 8 17 22		<i>*////</i>
5 27 24 3 23 3		8////
3 3 2 3 3 3	////////	8////
3 5	////////	<i>\////</i>
8 33 6 8 33 7		<i>\(\////</i> \)
8 28 9 8 28 10		<i>\$/////</i>
1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	998999	*/////
9 3 9 3		<i>\(\(\(\(\(\)\\\\\\\\\\\\\\\\\\\\\\\\\\</i>
5 35 35 5 33 27		<i>X/////</i>
1 11 12	77X777	8/////
1 1 2 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1		8/////
5 31 23 5 33 24		<i>\$(////</i>)
5 29 1 1 29 2		\$////
9 2	999999	\$////
8 29 6 8 29 7	999999	\$////
1 29 1		<i>\/////</i>
9 11		<i>\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\</i>
1 3 3 1 3 4		X/////
1 39 33 5 39 36		X/////
1 9 3		8////
8 20 20 8 29 21		8////
1 3 2	408411.	*////
5 20 1 5 20 2	44844A	8/////
8 20 3 1 20 4		*////
1 20 3 5 20 6		<i>\$////</i>
5 25 5 5 20 9	999999	\$////
8 20 10 8 20 11		*/////
8 20 12 8 20 13	/////////	<i>\/////</i>
5 25 15 1 22 15	/////////	<i>\/////</i>
1 20 17 5 20 14		<i>\/////</i>
8 20 19 8 20 21	////////	<i>\(\) \\ \</i>
8 20 22 8 20 23		<i>\////</i>
8 20 24 8 21 1		<i>¥////</i>
5 22 3 5 22 4		<i>\(\(\(\)</i>
8 22 5 8 22 6		<i>\(\/ /// \)</i>
5 21 7 8 22 8		X////\
8 21 50 8 21 11		X////X
1 21 12 1 21 13		X/////
2 21 14 1 22 15		<i>/////</i>
8 21 15 8 22 27 8 21 16	/////////	<i>\$/////</i>
8 21 19 8 21 20	/////////	<i>(/////</i>
8 22 23 8 22 22 8 5 22 23		<i>\\\\\\</i>
5 22 24 44 44 44 44 44 44 44 44 44 44 44		<i>X/////</i>
8 22 2 8 22 5		<i>(////</i>)
8 22 4 8 22 5		<i>\$////</i> }
8 22 7 8 22 8		8////
8 22 9 8 22 10	////////	<i>\////</i>
2 21 11 1 22 12		<i>\////</i>
1 22 13 1 22 13	/////////	<i>\/////</i>
8 22 16 8 22 17	/////////	<i>\////</i>
8 22 18 8 22 19 8 22 29		<i>\/////</i>
8 22 20 8 22 21 8 22 22		<i>\\\\\\\</i>
8 22 23 8 22 34		<i>\$////</i>
5 23 1 5 23 2		<i>*////</i>
8 23 3 4 23 4 5 22 5		X////X
8 23 6 6 23 7		<i>\$////</i>
1 23 4 1 23 5		X/////
8 23 10 8 23 11		<i>\$(////)</i>

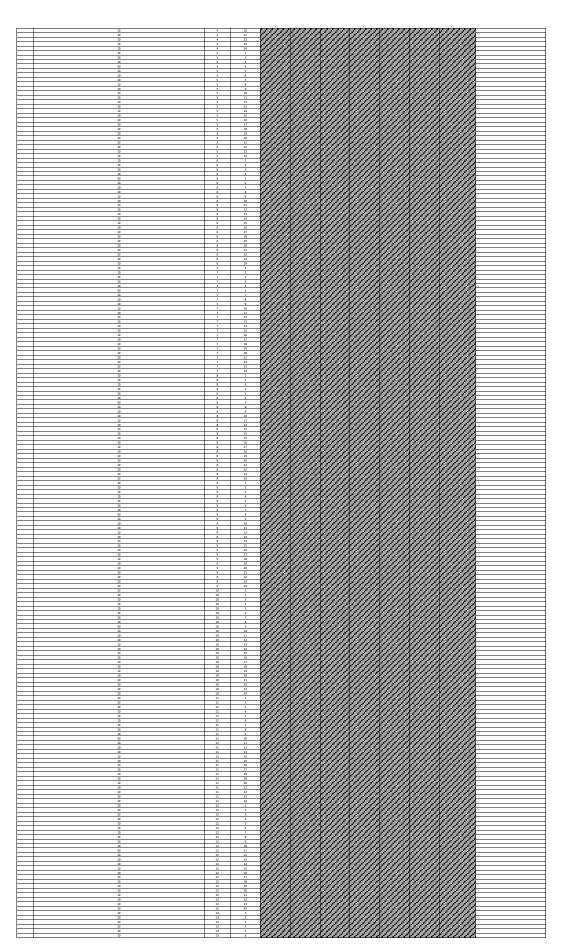








			26 26	9	97777	/////	07777	/////	177777	V////	<i>1111111</i>	
			26 26	10 11 12								
			26 26	13								
)	26 26	15 16 17					<i>(1111)</i>			
)	26 26	18 19								
			26 26 26	20 21 22								
			26 26	23 24	/////			////	V/////		<i>90000</i>	
)	27 27	2 3	<i>01111.</i>			/////	V/////			
)	27 27	5	<i>/////</i>			////	V/////		<i>90000</i>	
			27 27 27	7 8	<i>/////</i>			/////	V////			
			27	9					<i>(1111)</i>			
			27	11 12								
			27	14 15					<i>(1111)</i>			
			27 27 27	16 17								
			27 27	19 20					<i>(1111)</i>			
)	27 27	21 22					MAN			
		1	27 27 28	23 24 1					<i>(1111)</i>			
)	28 28	3					<i>(1111)</i>			
			28 28 28	5 6	W//				<i>(1111)</i>			
)	28 28	7 8								
))	28 28 28	9 10								
			28 28	12					10000			
		-	28 28	14 15								
E		, ,	28 28 28	17 17 18								
Ē			28 28	19 20								
E		1	28 28 28	21 22 23								
			28 29	24								
			29 29 29	2 3 4								
E			29	5 6								
Ξ			29 29	7 8								
E)	29 29	10 11								
	!		29 29	12 13								
			29 29 29	14 15 16								
)	29 29	17 18							<i>VIIII</i>	
			29 29 29	20 21								
			29 29	22 23							<i>VIII</i>	
			29 30	24 1					<i>77777</i>		<i>VIII</i>	
			30	3 4							<i>VIII</i>	
)	30 30	5								
			30 30	7 8 9								
)	30 30	10 11								
))	30 30	12 13								
			30	15 16								
			30	17 18								
			30 30	20 21								
)	30 30	22 23					WWW.	000		
		0	30 1 1	24 1 2					WW.	000		
	1	0	1	3 4					WWW.	000		
		0	1 1	5 6 7								
	1	0	1	9								
		0	1	10 11 12								
	3	0	1	13 14								
		0	1	15 16								
		0	1 1	18 19								
	1	0	1	20 21								
	1	0	1	23 24								
	1	0	2 2	1 2								
		0	2 2 2	3 4 5								
	1	0	2 2	6 7								
		0	2 2 2	9 10								
	1	0	2 2	11 12								
			2 2 2	13 14								
		0	2 2	16 17								
		0	2 2	18 19								
		0	2 2	21 22								
	1	0	2 2	23 24								
	1	0	3	2 3								
		0	3	4 5							(/////	
			3 3	6 7 8	1////						8/////	
		0	3	9							8/////	
		0	3	11 12							8/////	
		0	3	14 15							8/////	
	1	0	3	16 17								
		0	3	18 19 20								
		0	3	21 22								
		0	- 1	23 24								
	1	0		2 3								
	1	0	4	4 5								
		0	4 4	5 7 8								
		0	4	9								
Ξ	1	0	-	11 12								
		0	4	14 14 15								
			_	16	1111111	111111	(11111	11/1/	メノノノブノ	111111		1
	1	0	-	17		17777		/////	1/////	111111		1



		0	13	7 8	V////		/////	X////	/////	<i>1111111</i>	
	1	0	13	9				<i>8000</i>			
	1	0	13	12				<i>\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\</i>			
	1	0	13 13 13	14 15 16			9///				
	1	0	13	17 18							
		0	13 13	20 21							
	1	0	13 13 13	22 23 24				<i>8000</i>			
		0	14	2							
	1	0	14	4 5				<i>VIII</i>			
	1	0	14 14 14	7 8				<i>W////</i>			
		0	14	9 10							
	1	0	14	12							
	3	0	14 14 14	14 15				<i>1000</i>			
	1	0	14	17 18							
	1	0	14 14 14	19 20 21				WW.			
	1	0	14 14 14	22 23 24				<i>W.C.</i>			
		0	15 15	2							
		0	15 15	4 5	<i>/////</i>						
	1	0	15 15 15	6 7 8							
		0	15 15	9				<i>8000</i>			
E	1	0	15 15 15	11 12 13						8/////	
Ė		0	15 15 15	14 15 16							
	1	0	15 15	17 18							
	1	D	15 15 15	19 20 21							
Ė		0	15 15 15	22 23 24							
	3	0	16 16	1 2							
		0	16 16	4 5				<i>}////</i>			
Ė		0	16 16 16	6 7 8							
	3	0	16 16	9							
		0	16 16	12 12							
	1	0	16 16	14 15				<i>1000</i>			
	i	0	16 16	17 18				<i>8000</i>			
	1	0	16 16 16	19 20 21				W///			
	1	0	16 16	22 23 24							
		0	17	1 2							
	1	0	17 17 17	4 5	WW.						
	1	0	17	7				X////			
		0	17	9							
	1	0	17 17 17	11 12 13				<i>\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\</i>			
		0	17	14 15			9 <i>999</i>				
	1	0	17	17 18							
	1	0	17 17 17	19 20 21	W///						
	1	0	17	22 23				<i>1000</i>			
	1	0	15 15	1 2							
	1	0	15 15 15	4 5				<i>VIII</i>			
		0	15	7							
	1	0	15	9							
	1	0	15 15 15	11 12 13							
	1	0	18 18	14 15				<i>8000</i>			
	3	0	15	17 18							
	1	0	15 15 15	20 21							
Ė		0	15	22 23 24							
	1	0	18 19 19 19	1 2							
	1	0	19 19	4 5							
		0	19 19 19	6 7 8							
	3	0	19	9							
	3	0	19 19 19	11 12 13							
		0	19 19 19	14 15 16							
E	1	0	19 19 19	16 17 18							
	1	0	19 19 19	19 20 21	<i>/////.</i>						
		0	19 19	22 23 24							
		0	20 20	1 2							
	1	0	20 20 20	3 4 5							
		0	20 20 20	6 7 8							
	1	0	20 20	9							
	1	0	20 20 20	11 12 13							
			20 20 20	14 15				<i>\\\\\\</i>			
	1	0	20 20	17 18							
	1	0	20 20 20	19 20 21							
	1	0	20 20 20	22 23							
		0	20 21 21	24 1 2							
	-	0	21 21 21	3 4 5							
	1	D D	21 21	7							
		0	21 21 21	9 20							
		0	21 21 21	11 12							
	1	0	21 21	14 15							
	1	0	21 21	16 17	VIIII	V/////	1////		VIIII	X//////	

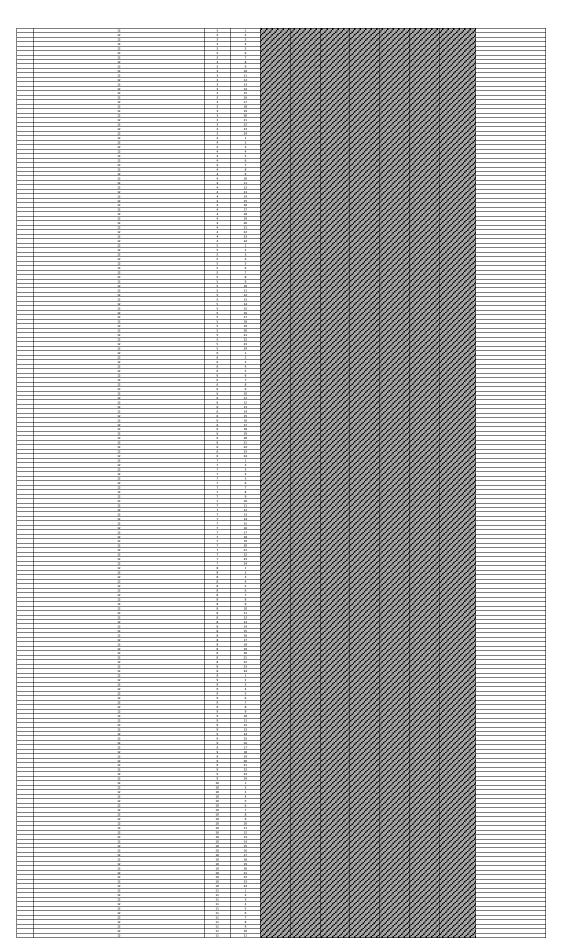
	1	0	21 21	18 19	9////		/////	X////	/////	<i>1111111</i>	ļ
	1	0	21 21	20 21				<i>8000</i>			
	1	0	21 21 21	22 23 24							
	1	0	22 22	2				WWW.			
	1	0	22 22	4 5							
	1	0	22 22 22	6 7 8				<i>W.</i>			
	1	0	22 22	9 10							
	1	0	22 22 22	11 12 13							
	1	0	22 22 23	14 15							
	1	0	22 22	17 18							
	1	0	22 22 23	19 20							
	1	0	22 22	22 23				MAAA			
	1	0	22 23 21	24 1							
	1	0	23 23	3 4				<i>W////</i>			
	1	0	23 23 23	5 6 7				W			
	1	0	23 23	9				<i>VIII</i>			
	1	0	23 23	11 12							
	1	0	23 23 21	13 14							
	1	0	21 21	16 17							
	1	0	23 23 23	18 19 20							
	1 1	0	23 23	21 22							
	2 2 2	0	23 23 24	23 24 1				<i>\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\</i>			
	1	0	24 24	1							
	1	0	24 24 24	5 6							
	1		24 24 24	7 8 9							
	1	0	24 24	10 11							
	1	0	24 24 24	12 13 14							
	1	0	24 24	15 16							
	1	0	24 24 24	17 18 19							
	1	0	24 24 24	20 21 22							
	1	0	24 24	23 24				XIIII			
Ė	1	0	25 25 25	2 3							
	1	0	25 25	4 5				<i>W////</i>			
	1	0	25 25 25	7 8				WW			
	1	0	25 25	9 10				<i>VIII</i> .			
	1	0	25 25	12				<i>W////</i>			
	1	0	25 25 25	14 15 16							
	1	0	25 25	17 18				<i>8000</i>			
	1	0	25 25 25	20 21							
	1	0	25 25	22 23				<i>8000</i>			
	1	0	26 26	1 2				M			
	1	0	26 26 26	4				WW.			
	1	0	25 25	6 7							
	1	0	26 26 26	9 10			9 <i>999</i>	<i>WW.</i>	(1111)		
	1	0	26 26	11 12							
	1	0	26 26	14 15							
	1	0	26 26 26	16 17 18							
	1	0	26 26	19 20				<i>8000</i>			
	1	0	26 26 26	21 22 25				WW			
	1	0	26 27	24				<i>W////</i>			
	1	0	27	3 4							
	1 1	0	27 27 27	5 6 7							
	1	0	27 27	9							
	1	0	27 27 27	10 11 12							
	1	0	27 27 27	13 14 15							
	1	0	27	16 17				1////			
	1	0	27 27	19 20							
	1		27 27 27	21 22 21							
	1	0	27 28	24 1							
	1	0	28 28 28	2 3 4							
	1	0	28 28 28	5 6							
	1 1	0	25 25 25	7 E 9							
	1	0	28 28	10 11							
	1 1	0	28 28 28	12 13 14							
	1		28 28 28	15 16 17							
	1	0	28 28 28	18 19				<i>\////</i>			
	2 2 2	0	28 28 28	20 21 22							
	1	0	28 28 29	23 24							
	1	0	29 29	2 3							
	1	0	29 29 29	4 5							
	1	0	29 29 29	7 8							
	1		29 29 29	9 10							
	1	0	29 29	12 13							
	1 1	0	29 29 29	14 15 16							
	1	0	29 29	17 18							
	2 2 2	0	29 29 29	19 20 21				<i>\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\</i>			
	1		29 29 29	22 23 24							
	1	0	30	1 2							
	1	0	30 30	4	VIIII		111111	X/////	V/////	<i>Y//////</i>	

10	30	3	97777	/////	07777	/////	177777	V////	<i>1111111</i>	
10	30 30	7 8				////				
10	30	9					<i>(1111)</i>			
10	30 30	12 13					<i>(1111)</i>			
10 10	30 30	14 15					MAN			
10 10	30 30 30	16 17 18								
10	30 30	19 20								
10 10	30 30	21 22 23								
10 10	30 31	24 1	<i>000.</i>			<i>/////</i>	V/////		<i>90000</i>	
10 10	31 31 31	3 4	<i>000</i>			<i>/////</i>	V////			
10	31 31	5 6					<i>(1111)</i>			
10	31 31	7 8								
10	31 31	10 11					<i>(1111)</i>			
10	31 31	12 13	<i>000</i>			<i>/////</i>	V/////		<i>90000</i>	
10	31 31	15 16					<i>(1111)</i>			
10 10	31 31	17 18					MAN			
10 10	31 31 31	19 20 21					<i>(1111)</i>			
10 10	31 31	22 23					MAN			
10 11	31 1	24 1 2								
11	1 1	3 4	<i>000</i>				10000			
11 11	1	5 6								
11	 1	5								
11	1	10 11								
11 11 11	 1	13 14								
11	1 1	15 16								
11 11	1 1 1	17 18 19								
11 11	1	20 21								
11	 1 1	22 23 24								
11	 2 2	1 2								
11	 2	4								
11 11	2 2	6 7								
11	2	9								
11 11	2 2 2	10 11 12								
11	2 2	13 14							<i>VIIII</i>	
11 11	2 2 2	15 16								
11	2 2	18 19							<i>VIII</i>	
n n	2 2	20 21	9777				<i>77777</i>		<i>VIII</i>	
11	2 2	23 24	<i>17775</i>				W		V/////	
11	3	2						999		
11	3	4 5								
11	3	6 7								
11 11	3	9								
11	3	11 12								
11 11	3	13 14								
11	- 1	16 17								
11	3	18 19					WWW.			
11 11	3	20 21 22	977				WW.	000		
11	3	23 24					WWW.	(1111)		
11 11	4	2 3								
11	4	5						999		
11	-	7 8								
11	4	9					WWW.	000		
11 11	4	11 12								
11		14 15								
11	4	16 17								
11 11	4	19 20								
11	4	21 22								
11 11	4 4 5	23 24 1								
11	5	3								
11 11	5	3 6							<i>//////</i>	
11	5	7 8								
11 11	5 5	9 10 71								
11	5 5	12								
11	 	14 15								
11 11	 5 5	17 18								
11	 5	19 20								
11 11	5 5	21 22 23								
11	5 6	24 1							(/////	
11 11	6	2 3 4							<i>{/////</i>	
11	6	5							8/////	
11	 6	7 8							8/////	
11 11	6	10 11							8/////	
11	6	12 13								
11 11	6	14 15 16								
11 11	 6	17 18								
11	 6	19 20								
11 11	6	21 22 23								
11	6 7	24 1								
11 11	7 7 7	3 4								
11	7	5 6								
11 11	7 7 7	7 8 9								
11	7	10 11								
11	7	12	111111							
11		34	11111		10000					

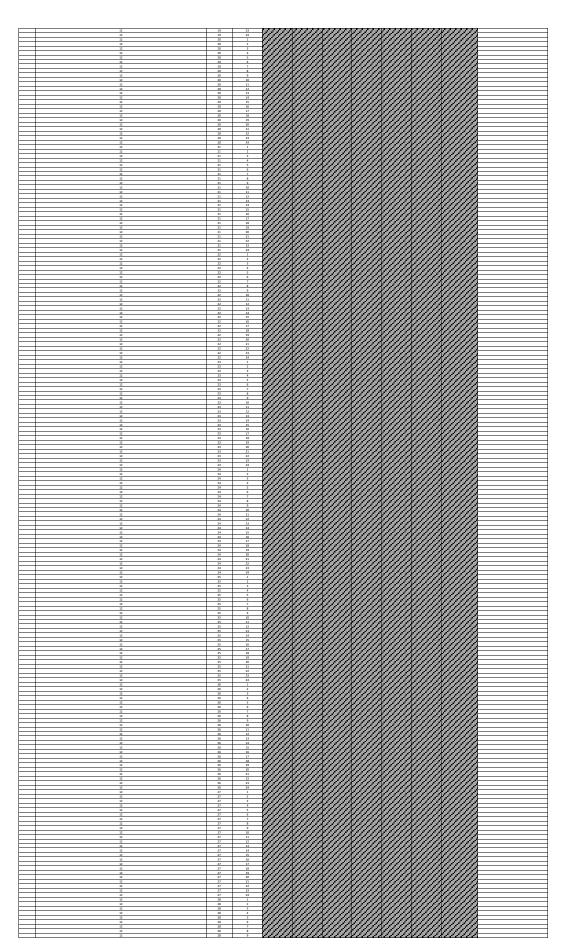
11	7	16 17	97777	(////	07777	/////	(/////	/////	(/////	
11	7	18 19								
11 11	7 7	20 21 22								
11	7 7	23 24					<i>VIII</i>			
11	8	2								
11 11 11	8 8	5 6								
11 11	1	7 8								
11 11	- E	9 10 11	<i>VIII</i>							
11	-	12	<i>\\\\\</i>		(1111)					
11	-	15 16	<i>7777.</i>							
11	-	17 18								
11	-	20 21								
11	-	22 23	<i>11111</i>							
11 11	9	1 2								
11 11	9	4	<i>VIII</i>							
11 11	9	6 7					WWW.			
11 11 11	9	9								
11 11	9	11 12						7777		
11 11 11	9	13 14 15								
11	9	16 17								
11 11	 9	16 19 20								
11	9	21 22								-
11 11	 9	24 1								
11 11	10 10 10	2 3 4								
11 11 11	10 10	5								
11 11	10 10 10	7 8 9								_
11	10	10 11								
11 11 11	 10 10	12 13 14								
11	10	15 16								
11 11 11	 10 10	17 18 19								
11	10	20 21								
11	10	23 24	W		(1111)					
11	11 11	1 2			(1111)					
11 11	11	4 5	9////							
11 11	11	7								
11	11 11	9								
11	11 11	11 12	W//							
11	11	14 15	<i>/////</i>							
11 11	11 11	16 17	<i>11110.</i>		V////		V////	/////		
11 11	11 11	19 20								
11 11 11	11 11	21 22 23								
11	11 12	24 1								
11 11	12	3 4								
11 11	12	5				/////				
11	12 12									
11 11	12 12 12	10 11 12								
11 11	12 12	13 14								
11 11 11	12 12 12	15 16 17	W//		(1111)		<i>1000</i>			
11	12	18 19	<i>0000.</i>	9 0000	VIII.	9999,	V/////	<i>999</i>		
11	12	21 22								
11	12	23								
11 11	13	2 3								
11 11	13 13	4 5 6								
11 11	13 13	7 8								
11 11 11	 13 13 13	9 10 11								
11	13	12 13								
11 11	 13 13	16 15 16								
11	13 13	17 18								-
11 11	 13 13 13	20 21								
11 11	 13 13	22 23 24								
11 11 11	14 14	1 2								
11	 14 14 14	4								
11 11	14 14	6 7								
11 11	14 14 14	9 10								
11 11 11	14 14	11 12								
11 11 11	 14 14 14	13 14 15								
11	14 14	16 17								
11 11	 14 14 14	16 19 20								
11	14 14 14	21 22 27								-
11 11	 14 14	24 1								
11	15 15	3								-
11 11	 15 15 15	5 6								
11 11	15 15 15	7 8								-
11 11	15 15	10 11								
	15 15	12 13								
11	75								0000000	
11 11 11 11 11	15 15 15	15 16								
11 11 11 11 11 11 11 12 12 13	15 15 15 15 15	15 16 17 18								
	15 15 15 15 15 15 15 15	15 16 17 18 19 20 21								
11 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	15 15 15 15 15 15 15 15 15 15 15	15 16 17 18 19 20 21 22 23 24								

1	11	16	3	/////	/////	07777	/////	(////	/////	<i>777777</i> 7	
1	11 11	16 16	5								
1	11 11 11	16 15 16	7 8 9								
1	11 11	16 16	10 11					<i>VIII</i>			
1	11 11	16 16	13 14					<i>VIII</i>			
1	11 11	16 16 16	15 16 17					<i>VIII.</i>			
1	11 11	16 15	18 19								
1	11 11 11	16 15 16	20 21 22								
1	11	16 16	23 24	999							
1	11 11 11	17 17	2	999)							
1	11	17	5								
1	11 11	17 17	7 8	9777)							
1	11 11	17 17	9 10								
1	11 11	17 17	12	9999						8/////	
1	11 11	17 17 17	14 15 16	9999							
1	11 11	17 17	27 28	7777				<i>7777.</i>			
1	11 11	17 17	20 21								
1	11 11	17 17	22 23 24								
1	11	18 18	1 2	9999		(1111)		VIII)			
1	11 11	18 18 18	3 4 5	9999							
1	11 11	18 18	5 7								
1	11 11 11	18 18 18	9 10								
1	11	15	11 12 13								·
1	11 11	18 18	14 15							<i>}/////</i>	
1	11 11 11 11 11 11 11 11 11 11 11 11 11	18 18	16 17 18							<i>\/////</i>	
1	11 11	18 18 18	19								
1	11 11	18 18 18	21 22 23								·
1	11	18 19	24 1								
1	11 11 11	19 19 19	3 4								
1	11 11	19	5 6 7								
1	11 11	19 19	3 9								
1	11 11	19 19 19	10 11 12								
1	11 11	19 19	13 14	41111							
1	11	19 19	15 16								
1	11 11	19 19	18 19	9999						8/////	
1	11 11 11	19 19 19	20 21 22	999							
1	11	19 19	23 24	7777				<i>7777.</i>			
1	11 11 11	20 20	2					<i>WW.</i>		<i>}/////</i>	
1	11	20 20	5								
1	11 11	20 20	7 8	999							
1	11 11	20 20 20	9 10 11	9999)							
1	11	20 20	12 13								
1	11 11	20 20 20	14 15 16								
1	n n	20 20	17 18	7777)							
1	11 11	20 20 20	20 21					<i>VIII</i>			
1	11 11	20 20 20	22 23 24							<i>}/////</i>	
1	11	21 21	1 2								
1	11 11 11	21 21 21	4 5								
1	11 11	21 21 21 21	5 7 8	999		977					
1	11 11	21 21	9								
1	11 11	21 21 21	11 12 13	999							
1	11	21	14 15								
1	11 11	21 21 21	16 17 18								
1	11 11	21 21	19 20 21							<i>\////\</i>	
11	11 11	21 21 21	22 23								
11	11 11	21 22 22	24 1 2								·
11	11	22	3 4								
1	11 11 11	22	6 7								
1	11 11	22	8 9								·
1	11 11	22 22	11 12								
1	11 11 11 11 11 11 11 11 11 11 11 11 11	22 22 22	13 14 15							<i>{/////</i> }	
1	11 11	22 22	16 17								
1	11 11 11	22 22 22	18 19 20							<i>}/////</i>	
1	11 11	22	21 22 23							<i>\/////</i>	
11	11 11	22	24 1								
10 10 10 10 10 10 10 10 10 10 10 10 10 1	11 11 11		3 4								
1	11 11	23 23	5 6								
1	11 11	23	7 8 9								
1	11	23	10 11								
1	11 11	23 23 23	12 13 14								·
11 22 22 22 24 24 24 24 24 24 24 24 24 24	11		15 16								
11 22 22 22 24 24 24 24 24 24 24 24 24 24	11 11	23 23 21	17 18 19								
11 22 24 24 24 24 24 24 24 24 24 24 24 24	11 11	23 23								<i>{/////</i> }	
1 1 2 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	11 11 11	23 23	22 23 24								
11 24 3 11 25 5 11 27 7 11 27 7 11 28 15 11 24 15 11 24 15	11	24 24	1 2								
11 34 5 6 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	11 11 11		3 4 5								
11 34 9 11 24 19 11 24 11	11	24 24	7							<i>}/////</i>	
	11 11	24	9 10								
	11 11	24 24 24	11 12 13								

	1	1	24 24	14 15	V////			/////	/////	
		1	24 24	16 17						
		1	24 24 24	18 19 20					/////	
		1	24 24	21 22						
	1	1	24 24	23 24					/////	
	1	1	25 25	2					/////	
		1	25 25 25	5 6					/////	
		1	25 25	7 8					/////	
		1	25 25	9 10					/////	
		1	25 25	12					/////	
	1	1	25 25	14 15						
		1	25 25 25	16 17 18					/////	
	3	1	25 25	19 20						
		1	25 25 25	21 22 23					/////	
	1	1	25 26	24 1						
		1	26 26 26	3 4		<i>1000</i>			/////	
	1	1	26 26	5		VIII		<i>999</i>	/////	
		1	26 26 26	7 8 9					/////	
	3	1	26 26	10 11	9777	VIII		<i>999</i>		
		1	26 26 26	12 13	<i>9000</i>	<i>1000</i>			/////	
		1	26 26	15 16	9777	VIII		<i>000.</i>	/////	
E		1	26 26 26	17 18 10					/////	
		1	26 26	20 21					/////	
E		1	26 26 24	22 23					/////	
		1	27 27 27	1 2					/////	
E		1	27	1 4					/////	
E		1	27 27 27	5 6 7					/////	
	1	1	27	9		VIII		<i>999</i>	/////	
	1	1	27 27 27	10 11 12					/////	
	1	1	27 27	13 14						
F		1	27 27 27	15 16 17					/////	
		1	27 27	18 19						
		1	27 27 27	20 21 22					/////	
		1	27 27	23 24					/////	
	1	1	28 28	2					/////	
	1	1	28 28	4 5					/////	
		1	28 28	5 7					/////	
	1	1	28 28	9					/////	
	1	1	28 28	11					/////	
		1	28 28	14 15					/////	
	1	1	28 28	16 17					/////	
		1	28 28 28	18 19 20					/////	
	1	1	28 28	21 22					/////	
		1	28 28 29	23 24 1					/////	
	1	1	29 29	1				(1111)	/////	
		1 1 1	29 29 29	5 6				(1111)	/////	
	1	1	29 29	7 8				(1111)	/////	
		1	29 29 29	9 10 11				(1111)	/////	
	1	1	29 29	12 13				(1111)	/////	
		1	29 29 29	14 15 16				(1111)	/////	
		1	29 29	17 18					/////	
		1	29 29 29	19 20 21				(1111)	/////	
		1	29	22 23					/////	
E		1	29 30	24					/////	
		1	30 30	3 4					/////	
	1	1	30	5					/////	
	1	1	30 30 30	7 8 9					/////	
	1	1	30 30	10 11					/////	
	1	1	30 30 30	12 13 14					/////	
	1	1	30 30	15 16					/////	
E		1	30 30 30	17 18 19					/////	
	1	1	30 30	20 21					/////	
E		1	30 30 30	22 23 24					/////	
		2	1 1	1 2					/////	
Ħ		2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2	1 1	3 4					/////	
E	1	2 2	1 1	5 6 7					/////	
E		2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2	1 1	9					/////	
E		2 2	1 1	11 12					/////	
E	1	2	1	13 14					/////	
\vdash	1	2 2	1 1	15 16 17					/////	
-		2	1	18 19					/////	
	1	2	1 1	20 21 22					/////	
	1	2		23					/////	
	1	2 2 2	1	24	AND DESCRIPTION OF THE PERSON NAMED IN COLUMN TWO IS NOT THE PERSON NAMED IN COLUMN TWO IS NAMED IN COLUMN TWO I	アノノノノ	************		2	
	1	2 2 2 2 2	1 2 2 2	24 1 2	111111	17777	XXXXXXXXXXXX	11110	//////	
	1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	2 2 2 2 2 2 2 2 2 2	1 1 2 2 2 2 2 2	24 1 2 3 4 5						
		2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2	1 1 2 2 2 2 2 2 2 2 2 2	26 1 2 3 4 5 6						
		2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2	1 1 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2	24 1 2 3 4 5 6 7 8 9						
		2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2	1 1 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2	24 1 2 3 4 5 6 7 8 9 20 11						
		2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2	1 1 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2	24 1 2 3 4 4 5 6 7 7 8 9 9 10 11 11 12 12 13 14 14 15 15						
		2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2	1 1 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2	24 1 2 3 4 5 6 7 2 20 11 12 13 14 15 16 17 17						
		2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2	1 1 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2	24 1 2 2 3 3 4 4 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5						
		2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2	1 1 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2	244 1 1 2 3 3 4 4 5 6 7 7 8 9 101 111 122 133 144 135 146 136 147 137 148 138 149 149 149 149 149 149 149 149 149 149						



		12	11 11	12 13	97777	/////			/////	//////	
	1	12	11 11	14 15							
		12	11 11 11	16 17 18							
		12	11 11	19 20							
	1	12	11	21 22							
	1	12	11 12	24 1							
		12	12 12	3							
		12	12	3 6							
		12	12 12	7 8							
		12	12 12 12	10 11							
	1	12	12 12	12 13							
		12	12 12 12	14 15 16						<i>(((((</i> (((((((((((((((((((((((((((((((
	3	12	12 12	17 18							
		2	12 12 12	20 21							
	1	12	12 12	22 23							
		12	12 13	24 1 2							
	1	12	13 13	3					<i>000</i>		
	3	12	13 13	5 6 7							
	1	12	13 13	5 9							
	1	12	13 13	10 11	9000					<i>{/////</i> //	
	1	12	13 13	13 14					<i>000.</i>		
Ė		12	13 13	15 16							
		12	13	18 19							
E		12	13 13	20 21							
		12	13 13	23 24							
E	1	12	14 14	1 2							-
E	1	12	14 14 14	3 4 5							
	1	12	14 14	6 7					<i>999</i>		
	3	2 2	14 14 14	9 10							
	1	12	14 14	11 12							
E		12 12	14 14 14	13 14 15							
	1	12	14	16 17							
		12	14	18 19	9777				<i>000.</i>	<i>{/////</i> }=	
		12	14	20 21 22							
	1	12	14	23 24							
		2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2	15 15	2 3							
	1	12	15 15	4 5							
		12	15 15	7 8							
	3	12	15 15	9 10							
	1	12	15 15	11 12							
	3	12	15 15	14 15	9777				<i>000.</i>		
	1	12	15 15	16 17	9000					<i>{/////</i> //	
	1	12	15 15	19 20					<i>000.</i>		
		12	15 15	21 22	9777				<i>000</i>	<i>{/////</i> }=	
	1	12	15 16	24 1					999),		
		12	16 16	3	9777				<i>000.</i>	<i>{/////</i> }=	
		2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2	16 16	5 6					<i>000.</i>		
	1	12	16 16	7 8							
	3	12	16 16	9 10 11							
	1	12	16 16	12 13					<i>999</i>		
		12	16 16	14 15 16							
	3	12	16 16	17 18	9777				<i>999</i>		
	1	12	16 16	19 20 21	9000					<i>{/////</i> }	
E	1	12	16 16	22 23							
E		12	16 17	24 1							
E		12	17 17	3 4							
E	1	12	17 17	5							-
		12	17 17	5							
E		12	17 17	10 11 12							
		12	17 17	13 14							
	1	12	17 17	15 16							
	1	12	17 17	17 18 19							
	1	2	17	20 21							
	3	2 2	17 17 17	22 23 24							
	1	12	18 18	1 2						/////	
		12 12	18 18 18	3 4							
		12	18 18	6 7							
		12	18 18 18	9 10						//////	
	i	12	18 18	11 12						/////	
E		12	18 18	13 14							
E		12	18 18 18	16 17							
	1	12	18 18	18 19							
	1	12	18 18	21 22							
	1	2	18 18	23 24							
	3	12	19 19 19	2 3							
	1	12	19 19	4 5							
	1	12	19 19 19	7 8						//////	
		12	19 19	9 10							
E		12	19 19 10	11 12 75							
	1	12	19 19	14 15						/////	
			19	16		11/1/1	とファファスメング		111111	11111111	· ·
	1	12	19	17 78			ロンフンストレン	177777		<i>7777777</i>	
	1	12 12 12 12 12	19 19 19	17 18 19 20							



12	28	10	
22	28	11	V////X////////////////////////////////
12	28	12	<i>~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~</i>
12	28 28	13 14	**************************************
12	28	15	<u> </u>
12	28	16	**************************************
12	28	17	~//////////
12	28 28	18 19	**************************************
12	28	20	***************************************
12	28	21	
12	28	22	***************************************
12	28 28	23 24	{////W////X////////////////////////////
12	29	1	*////////////
12	29	2	3////W////X////////////////////////////
12	29 29	3	-{////////////
22	29	5	1/////////////////////////////////////
12	29	6	1//////////////////////////////////////
12	29	7	\$\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\
12	29 29	9	
12	29	10	\$/////\/////\
12	29	11	\$////X////X///X///X////X////X////X////
12	29	12	\$\f\f\f\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\
12	29 29	13 14	-\$/_/
12	29	15	\$////X///// \
12	29	16	<i>\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\</i>
12	29	17	
12	29 29	18 19	\////X////X///X////X////X////X////X///
12	29	20	<i>\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\</i>
12	29	21	<i>\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\</i>
22	29	22 23	<i>\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\</i>
12	29 29	23 24	\////X//////\/////X////X////X////\//////
12	30	1	V////X////////////////////////////////
12	30	2	<i>\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\</i>
12	30 30	3 4	\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\
12	30	3	\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\
12	30	6	V////X////////////////////////////////
12	30	7	200008000000000000000000000000000000000
12	30		**************************************
12	30	10	**************************************
12	30	11	<i>*************************************</i>
12	30	12	
12	30 30	13 14	**************************************
12	30	15	\$0000N0000N000N000N000N000N000N000N00
12	30	16	3//////////////////////////////////////
12	30	17	
12	30 30	18 19	*///////////*
12	30	20	
12	30	21	TEEEEAAEEEEEEEEEEEEEEEEEEEEEEEEEEEEEEE
12	30	22 23	
12	30	24	<i>\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\</i>
12	31	1	\$////X////X///X////X////X////X////X///
12 12	31 31	3	\$\f\f\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\
12	31	3 4	~////X////////////////////////////////
12	31	5	\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\
12	31	6	\$////X////X///X///X////X////X////X////
12	31 31	7 8	47.77.77.87.77.77.87.77.77.77.77.77.77.77
12	31 31	9	~/////X////// /
12	31	10	\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\
12	31	11	<i>\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\</i>
12	31	12	<i>\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\</i>
12	31 31	13 14	\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\
12	31	15	<i>\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\</i>
12	31	16	X////X////////////////////////////////
12	31 31	17 18	\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\
12	31	18 19	\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\
12	31	20	<i>\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\</i>
12	31	21	\$
12	31 31	22 23	~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~
12	31	23 24	~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~
			

30 MMT in 2035									
	2030 GHG Emissions	2035 GHG Emissions	2030 DA		ESP 2030 load within each	ESP 2035 load within each	ESP 2030 benchmark for	ESP 2035 benchmark for	
	Benchmark	Benchmark	Load	Load	IOU territory	IOU territory	each IOU	each IOU	l '
LSEs within Utility Territory	(MMT)	(MMT)	(GWh)	(GWh)	(GWh)	(GWh)	territory (MMT)	territory (MMT)	<u> </u>
Pacific Gas and Electric Company (Direct Access)	1.6214	1.1776	11,393	11,393			0.000	0.000	1
Southern California Edison Company (Direct Access)	1.6376	1.2201	13,421	13,421			0.000	0.000	1
San Diego Gas and Electric Company (Direct Access)	0.6637	0.4982	3,940	3,940			0.000	0.000	1
TOTAL			28,754	28,754	0	0	0.000	0.000	1

Each ESP is required to calculate its own confidential GHG Emissions Benchmark based on its 2030 and 2035 load share within the host IOU's territory. For any ESP that serves load in more than one IOU service territory, that ESP should add up the separate GHG Emissions Benchmarks calculated based on its share of direct access load for each IOU service territory to result in a single benchmark. When filling out Columns F and G -- "ESP 2030 load within each IOU territory" and "ESP 2035 load within each IOU territory" -- each ESP should utilize the confidential load forecast communicated to it by Energy Division staff.

			1		1	
30 MMT in 2035						
Emissions Summary						
Emissions Total		Unit	2024	2026	2030	2035
CO ₂		MMt/yr	0.277	0.380	0.500	0.514
PM2.5		tonnes/yr	39	35	34	31
SO ₂		tonnes/yr	18	15	12	7
NOx		tonnes/yr	137	116	97	68
Emissions by resource type	е					
CO ₂		Unit	2024	2026	2030	2035
Coal		MMt/yr	-	-	-	-
СНР		MMt/yr	0.14	0.14	0.14	0.08
Biogas		MMt/yr	-	-	-	-
Biomass		MMt/yr	-	-	-	-
System Power		MMt/yr	0.13	0.24	0.36	0.43
Asset Controlling Supplier		MMt/yr	-	-	-	-
Total		MMt/yr	0.28	0.38	0.50	0.51
Average emissions intensity		tCO2/MWh	0.048	0.066	0.084	0.084
Oversupply Emissions Credits	5	MMt/yr	0.25	0.24	0.07	0.04
PM2.5		Unit	2024	2026	2030	2035
Coal		tonnes/yr	-	-	-	-
CHP		tonnes/yr	8	8	8	5
Biogas		tonnes/yr	13	13	13	5
Biomass		tonnes/yr	19	11	1	4
System Power		tonnes/yr	(1)	3	12	18
Total		tonnes/yr	39	35	34	31
Average emissions intensity		kg/MWh	0.0068	0.0061	0.0057	0.0052
SO ₂		Unit	2024	2026	2030	2035
Coal		tonnes/yr	-	-	-	-
СНР		tonnes/yr	1	1	1	0
Biogas		tonnes/yr	10	10	10	4
Biomass		tonnes/yr	7	4	0	2
System Power		tonnes/yr	(0)	0	1	2
Total		tonnes/yr	18	15	12	7
Average emissions intensity		kg/MWh	0.0031	0.0026	0.0021	0.0012
NO.		11-15	2024	2026	2030	2025
NOx		Unit	2024	2026	2030	2035
Coal CHP		tonnes/yr	37	36	- 25	- 10
		tonnes/yr			35	18 17
Biogas		tonnes/yr	44	44	44	
Biomass System Boycer		tonnes/yr	58	32	3	13
System Power		tonnes/yr	(1)	4	14	20
Total		tonnes/yr	137 0.0239	0.0202	9 7 0.0162	0.0111
Average emissions intensity		kg/MWh	0.0239	0.0202	0.0162	0.0111
Supply and Demand Balan	nce					
Suppry una Demana Balan			+	+		
Demand Summary		Unit	2024	2026	2030	2035
Managed Retail Sales Forecast	t (assigned to LSF)	GWh	5,759	5,759	5,955	6,099
Baseline Demand, non-C&I	t jassigned to Lot)	GWh	3,607	3,634	3,805	3,861
Baseline Demand, 1611-C&1		GWh	3,405	3,455	3,692	3,904
Electric Vehicle Load		GWh	244	3,433	550	841
Building Electrification		GWh	28	50	101	168
Energy Efficiency		GWh	(96)	(164)	(295)	(431)
LINE BY LINE CITE		GVVII	(30)	(104)	(233)	
BTM PV		GWh	(973)	(1,104)	(1,428)	(1,764

Demand (at generator bus-bar)	GWh	6,217	6,218	6,431	6,587
 Supply Summary	Unit	2024	2026	2030	2035
 Large Hydro	GWh	845	525	525	525
 Imported Hydro	GWh	1,150	766	69	120
 Asset Controlling Supplier	GWh	-	-	-	-
Nuclear	GWh	-	-	-	-
Biogas	GWh	80	80	80	30
Biomass	GWh	65	38	4	16
Geothermal	GWh	332	454	1,753	1,785
Small Hydro	GWh	291	106	37	69
Wind CAISO	GWh	897	1,336	991	1,014
Wind Out Of State	GWh	-	-	250	250
Wind Offshore	GWh	-	-	-	400
Solar Utility Scale	GWh	1,815	1,649	1,451	1,137
Solar Distributed	GWh	32	32	32	31
Hybrid or Paired Solar and Battery	GWh	328	626	614	596
Shed DR	GWh	0.0	0.0	0.0	-
Pumped Storage	GWh	-	-	-	-
Battery Storage	GWh	(36)	(48)	(121)	(122
Storage Resource Custom Profile	GWh			- 1	-
RPS Resource Custom Profile	GWh	-	-	-	-
GHG-free non-RPS Resource Custom Profile	GWh	-	-	-	-
Coal	GWh	-	-	_	_
IFM CHP	GWh	323	315	312	182
Supply Demand Balance Summary	Unit	2024	2026	2030	2035
LSE Supply, before curtailment and exports	GWh	6,122	5,879	5,997	6,033
Net Purchases, before curtailment and exports	GWh	95	339	434	554
Curtailment	GWh	(181)	(182)	(307)	(327)
Exports	GWh	(54)	(51)	(126)	(163)
Zero Emissions Power From System	GWh			0	3
Net System Power (incurs emissions)	GWh	330	572	866	1,041
Check: Supply equals demand		TRUE	TRUE	TRUE	TRUE
Renewable and GHG-Free %	Unit	2024	2026	2030	2035
Retail Sales	GWh	5,759	5,759	5,955	6,099
		3,659	4,139	4,905	5,001
RPS-Eligible Delivered Renewable	GWh	3,035	7,133	4,505	3,001
RPS-Eligible Delivered Renewable GHG free	GWh GWh	5,654	5,430	5,499	
					5,649 82%
GHG free	GWh	5,654	5,430	5,499	5,64

Notes
Includes both in-CAISO and import emissions
Only In-CAISO emissions
Only In-CAISO emissions
Only In-CAISO emissions
Notes
Included in GHG emissions total
Includes emissions from in-CAISO dispatchable gas and unspecified imports
Includes both in-CAISO and import emissions
Emissions per MWh of sales
When hourly supply exceeds hourly load and system power is on the margin, LSE recieves credit at the system power emissions rate. Impact included in Total.
Notes
Information only, not included in total
In-CAISO emissions only - unspecified import emissions excluded
Only In-CAISO emissions
Emissions per MWh of sales
Emissions per mining saids
Notes
Information only, not included in total
In-CAISO emissions only - unspecified import emissions excluded
Only In-CAISO emissions
Emissions per MWh of sales
Notes
Information only, not included in total
In-CAISO emissions only - unspecified import emissions excluded
Only In-CAISO emissions
Emissions per MWh of sales
Selection with the TO Deliver in constitution of the least
Sales forecast (before T&D losses increase demand at generator bus-bar)
Summary of active inputs from Demand Inputs tab

Attachment E - 30 MMT CSP Page 86 of 98

Notes
Wind and solar values represent production potential (pre-curtailment).
Curtailment is calculated at the portfolio level (as opposed to the resource level), and is included as a line item below
Distributed solar generation that is in front of the meter
Negative because storage losses represent net negative energy production
Negative because storage losses represent net negative energy production
Negative because storage losses represent net negative energy production
Notes
Represents LSE's net power production, before curtailment and exports reduce the power available to dispace CAISO dispatchable gas/unspecified imports
The net system power that the LSE would consume (positive = consume from system, negative = supply to system) if dispatchable gas/unspecified imports were on the margin at the system level in all hours. For information only - not directly used to calculate LSE emissions.
Power that, if supplied to the system, would not displace CAISO dispatchable gas and/or unspecified import emissions and would instead be curtailed
Power that, if supplied to the system, would not displace CAISO dispatchable gas and/or unspecified import emissions and would instead be exported
Power supplied to meet LSE demand that does not incur emissions. Oversupply conditions at the system level result in surplus zero emissions power in some hours.
Power supplied by the system (or sent back to the system from if negative) in hours when CAISO dispatchable gas and/or unspecified imports are on the margin. The net system power produced or consumed is multiplied by the system power emissions rate in each hour.
5
Notes
Represents delivered renewable energy. Not directly comparable to production from an LSE's RPS-eligible resources.
A small fraction of Asset Controlling Supplier imports are not counted as GHG-free
Asiman maction or Asset containing Supplied imports are into countied as or continued as or containing as a proper or cont
and the second s

Individual LSE Energy Load Forecast Assignments for Use in 2022 LSE IRPs Assigned per June 15, 2022 ALJ Ruling - https://docs.cpuc.ca.gov/SearchRes.aspx?docformat=ALL&docid=485625915							
Assi	igned per June 15, 202	2 ALJ Ruling - https://docs.cpuc.ca.gov/Searc	hRes.aspx?doc	format=ALL	&docid=485625915		
Service Area	LSE CPUC ID	LSE Name	YEAR	TYPE	Final IRP Sales Forecast (GWH)		
PGE		Pacific Gas and Electric (Direct Access)	2023		11,393.00		
PGE		Pacific Gas and Electric (Direct Access)	2024	ESP	11,393.00		
PGE		Pacific Gas and Electric (Direct Access)	2025	ESP	11,393.00		
PGE		Pacific Gas and Electric (Direct Access)	2026		11,393.00		
PGE		Pacific Gas and Electric (Direct Access)	2027	ESP	11,393.00		
PGE		Pacific Gas and Electric (Direct Access)	2028	ESP	11,393.00		
PGE		Pacific Gas and Electric (Direct Access)	2029	ESP	11,393.00		
PGE		Pacific Gas and Electric (Direct Access)	2030	ESP	11,393.00		
PGE		Pacific Gas and Electric (Direct Access)	2031	ESP	11,393.00		
PGE		Pacific Gas and Electric (Direct Access)	2032	ESP	11,393.00		
PGE		Pacific Gas and Electric (Direct Access)	2033	ESP	11,393.00		
PGE		Pacific Gas and Electric (Direct Access)	2034	ESP	11,393.00		
PGE		Pacific Gas and Electric (Direct Access)	2035	ESP	11,393.00		
SCE		Southern California Edison (Direct Access)	2023	ESP	13,420.85		
SCE		Southern California Edison (Direct Access)	2024	ESP	13,420.85		
SCE		Southern California Edison (Direct Access)	2025	ESP	13,420.85		
SCE		Southern California Edison (Direct Access)	2026	ESP	13,420.85		
SCE		Southern California Edison (Direct Access)	2027	ESP	13,420.85		
SCE		Southern California Edison (Direct Access)	2028	ESP	13,420.85		
SCE		Southern California Edison (Direct Access)	2029	ESP	13,420.85		
SCE		Southern California Edison (Direct Access)	2030	ESP	13,420.85		
SCE		Southern California Edison (Direct Access)	2031	ESP	13,420.85		
SCE		Southern California Edison (Direct Access)	2032	ESP	13,420.85		
SCE		Southern California Edison (Direct Access)	2033	ESP	13,420.85		
SCE		Southern California Edison (Direct Access)	2034	ESP	13,420.85		
SCE		Southern California Edison (Direct Access)	2035		13,420.85		
SDGE		San Diego Gas and Electric (Direct Access)	2023	ESP	3,940.00		
SDGE		San Diego Gas and Electric (Direct Access)	2024		3,940.00		
SDGE		San Diego Gas and Electric (Direct Access)	2025		3,940.00		
SDGE		San Diego Gas and Electric (Direct Access)	2026	ESP	3,940.00		
SDGE		San Diego Gas and Electric (Direct Access)	2027	ESP	3,940.00		
SDGE		San Diego Gas and Electric (Direct Access)	2028		3,940.00		
SDGE		San Diego Gas and Electric (Direct Access)	2029		3,940.00		
SDGE		San Diego Gas and Electric (Direct Access)	2030		3,940.00		
SDGE		San Diego Gas and Electric (Direct Access)	2031		3,940.00		
SDGE		San Diego Gas and Electric (Direct Access)	2032	ESP	3,940.00		
SDGE		San Diego Gas and Electric (Direct Access)	2033	ESP	3,940.00		
SDGE		San Diego Gas and Electric (Direct Access)	2034		3,940.00		
SDGE		San Diego Gas and Electric (Direct Access)	2035		3,940.00		
PGE	PGE	Pacific Gas and Electric (Bundled)	2023		26,903.26		
PGE	PGE	Pacific Gas and Electric (Bundled)	2024		27,098.07		
PGE	PGE	Pacific Gas and Electric (Bundled)	2025		27,256.63		
PGE	PGE	Pacific Gas and Electric (Bundled)	2026		27,398.95		
PGE	PGE	Pacific Gas and Electric (Bundled)	2027		27,549.43		
PGE	PGE	Pacific Gas and Electric (Bundled)	2028		27,650.24		
PGE	PGE	Pacific Gas and Electric (Bundled)	2029		27,879.43		
PGE	PGE	Pacific Gas and Electric (Bundled)	2030		28,019.56		
PGE	PGE	Pacific Gas and Electric (Bundled)	2031		28,355.70		
PGE	PGE	Pacific Gas and Electric (Bundled)	2032		28,612.64		
PGE	PGE	Pacific Gas and Electric (Bundled)	2032		29,044.21		
PGE	PGE	Pacific Gas and Electric (Bundled)	2034		29,434.18		
PGE	PGE	Pacific Gas and Electric (Bundled)	2035		29,851.64		
SCE	SCE	Southern California Edison (Bundled)	2023		51,695.20		
SCE	SCE	Southern California Edison (Bundled)	2023		51,866.12		
SCE	SCE	Southern California Edison (Bundled)	2024		52,196.12		
SCE	SCE	Southern California Edison (Bundled)	2023		52,196.12		
SCE	SCE	Southern California Edison (Bundled)	2020		52,301.93		
SCE	SCE	Southern California Edison (Bundled)	2028		53,251.42		

SCE	SCE	Southern California Edison (Bundled)	2029	liou	F2 C04 02
		` '	_		53,601.83
SCE	SCE	Southern California Edison (Bundled)	2030		53,909.21
SCE	SCE	Southern California Edison (Bundled)			54,293.31
SCE	SCE	Southern California Edison (Bundled)	2032		54,525.33
SCE	SCE	Southern California Edison (Bundled)	2033		54,791.53
SCE	SCE	Southern California Edison (Bundled)	2034		55,033.06
SCE	SCE	Southern California Edison (Bundled)	2035		55,275.88
SDGE	SDGE	San Diego Gas and Electric (Bundled)	2023		4,421.70
SDGE	SDGE	San Diego Gas and Electric (Bundled)	2024		3,637.80
SDGE	SDGE	San Diego Gas and Electric (Bundled)	2025		3,638.92
SDGE	SDGE	San Diego Gas and Electric (Bundled)	2026		3,645.46
SDGE	SDGE	San Diego Gas and Electric (Bundled)	2027	IOU	3,656.22
SDGE	SDGE	San Diego Gas and Electric (Bundled)	2028		3,663.55
SDGE	SDGE	San Diego Gas and Electric (Bundled)	2029		3,677.82
SDGE	SDGE	San Diego Gas and Electric (Bundled)	2030		3,694.02
SDGE	SDGE	San Diego Gas and Electric (Bundled)	2031	IOU	3,716.29
SDGE	SDGE	San Diego Gas and Electric (Bundled)	2032	IOU	3,734.01
SDGE	SDGE	San Diego Gas and Electric (Bundled)	2033	IOU	3,755.70
SDGE	SDGE	San Diego Gas and Electric (Bundled)	2034	IOU	3,772.75
SDGE	SDGE	San Diego Gas and Electric (Bundled)	2035	IOU	3,787.41
PGE	3CE	Central Coast Community Energy	2023	CCA	4,557.05
PGE	3CE	Central Coast Community Energy	2024	CCA	4,594.72
PGE	3CE	Central Coast Community Energy	2025	CCA	4,617.45
PGE	3CE	Central Coast Community Energy	2026	CCA	4,640.88
PGE	3CE	Central Coast Community Energy	2027	CCA	4,672.05
PGE	3CE	Central Coast Community Energy	2028	CCA	4,697.30
PGE	3CE	Central Coast Community Energy	2029	CCA	4,729.19
PGE	3CE	Central Coast Community Energy	2030	CCA	4,760.56
PGE	3CE	Central Coast Community Energy	2031	CCA	4,799.79
PGE	3CE	Central Coast Community Energy	2032	CCA	4,829.14
PGE	3CE	Central Coast Community Energy	2033		4,864.25
PGE	3CE	Central Coast Community Energy	2034	CCA	4,898.33
PGE	3CE	Central Coast Community Energy	2035		4,935.53
PGE	CPSF	CleanPowerSF	2023		2,943.85
PGE	CPSF	CleanPowerSF	2024	CCA	2,969.61
PGE	CPSF	CleanPowerSF	2025		2,992.90
PGE	CPSF	CleanPowerSF	2026		3,015.45
PGE	CPSF	CleanPowerSF	2027		3,039.05
PGE	CPSF	CleanPowerSF			3,061.60
PGE	CPSF	CleanPowerSF	2029		3,089.80
PGE	CPSF	CleanPowerSF	2030		3,119.16
PGE	CPSF	CleanPowerSF	2031		3,152.83
PGE	CPSF	CleanPowerSF	2032		3,132.83
PGE	CPSF	CleanPowerSF	2032		3,215.15
PGE	CPSF	CleanPowerSF	2033		3,247.21
PGE	CPSF	CleanPowerSF	2034		
PGE	EBCE	East Bay Community Energy	2033		3,292.89
PGE	EBCE	East Bay Community Energy	2023		6,651.95
PGE	EBCE	East Bay Community Energy	2024		6,739.80
					6,815.88
PGE	EBCE	East Bay Community Energy	2026		6,887.17
PGE	EBCE	East Bay Community Energy	2027		6,954.65
PGE	EBCE	East Bay Community Energy	2028		7,026.50
PGE	EBCE	East Bay Community Energy	2029		7,100.58
PGE	EBCE	East Bay Community Energy	2030		7,179.74
PGE	EBCE	East Bay Community Energy	2031		7,259.20
PGE	EBCE	East Bay Community Energy	2032		7,326.11
PGE	EBCE	East Bay Community Energy	2033		7,393.58
PGE	EBCE	East Bay Community Energy	2034		7,461.20
PGE	EBCE	East Bay Community Energy	2035		7,539.97
PGE	KCCP	King City Community Power	2023		33.86
PGE	KCCP	King City Community Power	2024	CCA	34.12
PGE	КССР	King City Community Power	2025		34.33

PGE	KCCP	King City Community Power	2026	CCA	34.55
PGE	KCCP	King City Community Power	2027	CCA	34.80
PGE	KCCP	King City Community Power	2028	CCA	35.05
PGE	KCCP	King City Community Power	2029	CCA	35.39
PGE	KCCP	King City Community Power	2030	CCA	35.73
PGE	KCCP	King City Community Power	2031	CCA	36.17
PGE	KCCP	King City Community Power	2032	CCA	36.54
PGE	KCCP	King City Community Power	2033	CCA	37.00
PGE	KCCP	King City Community Power	2034	CCA	37.46
PGE	KCCP	King City Community Power	2035	CCA	37.95
PGE	MCE	Marin Clean Energy	2023	CCA	5,728.63
PGE	MCE	Marin Clean Energy	2024	CCA	5,758.94
PGE	MCE	Marin Clean Energy	2025	CCA	5,755.61
PGE	MCE	Marin Clean Energy	2026	CCA	5,759.26
PGE	MCE	Marin Clean Energy	2027	CCA	5,766.74
PGE	MCE	Marin Clean Energy	2028	CCA	5,795.21
PGE	MCE	Marin Clean Energy	2029	CCA	5,827.36
PGE	MCE	Marin Clean Energy	2030		5,955.34
PGE	MCE	Marin Clean Energy	2031	CCA	5,982.79
PGE	MCE	Marin Clean Energy	2032	CCA	6,039.93
PGE	MCE	Marin Clean Energy	2033		6,040.19
PGE	MCE	Marin Clean Energy	2034	CCA	6,066.94
PGE	MCE	Marin Clean Energy	2035		6,098.58
PGE	PCEA	Peninsula Clean Energy Authority	2023		3,424.82
PGE	PCEA	Peninsula Clean Energy Authority	2024		3,455.72
PGE	PCEA	Peninsula Clean Energy Authority	2025		3,461.01
PGE	PCEA	Peninsula Clean Energy Authority	2026		3,495.78
PGE	PCEA	Peninsula Clean Energy Authority	2027		3,554.01
PGE	PCEA	Peninsula Clean Energy Authority	2028		3,620.17
PGE	PCEA	Peninsula Clean Energy Authority	2029		3,666.17
PGE	PCEA	Peninsula Clean Energy Authority	2030		3,721.49
PGE	PCEA	Peninsula Clean Energy Authority	2031		
PGE	PCEA	Peninsula Clean Energy Authority	2031		3,780.66
PGE	PCEA	Peninsula Clean Energy Authority	2032		3,847.92
PGE	PCEA	Peninsula Clean Energy Authority	2033		3,897.29
PGE	PCEA	Peninsula Clean Energy Authority	2034		3,960.71
PGE	PIONEER	Pioneer Community Energy	2023		4,032.71
PGE	PIONEER	, ,,	2023		1,888.43
PGE	PIONEER	Pioneer Community Energy Pioneer Community Energy	2024		1,904.69
PGE	PIONEER	Pioneer Community Energy	2023		1,916.17
					1,926.85
PGE PGE	PIONEER	Pioneer Community Energy	2027		1,938.95
PGE	PIONEER PIONEER	Pioneer Community Energy	2028		1,951.69
PGE	PIONEER	Pioneer Community Energy	2029		1,968.03
		Pioneer Community Energy	2030		1,986.47
PGE	PIONEER	Pioneer Community Energy	2031		2,006.21
PGE	PIONEER	Pioneer Community Energy			2,023.27
PGE	PIONEER	Pioneer Community Energy	2033		2,044.07
PGE	PIONEER	Pioneer Community Energy	2034		2,065.07
PGE	PIONEER	Pioneer Community Energy	2035		2,089.92
PGE	RCEA	Redwood Coast Energy Authority	2023		674.13
PGE	RCEA	Redwood Coast Energy Authority	2024		677.92
PGE	RCEA	Redwood Coast Energy Authority	2025		678.67
PGE	RCEA	Redwood Coast Energy Authority	2026		680.61
PGE	RCEA	Redwood Coast Energy Authority	2027		682.11
PGE	RCEA	Redwood Coast Energy Authority	2028		683.33
PGE	RCEA	Redwood Coast Energy Authority	2029		684.37
PGE	RCEA	Redwood Coast Energy Authority	2030	-	685.27
PGE	RCEA	Redwood Coast Energy Authority	2031		686.06
PGE	RCEA	Redwood Coast Energy Authority	2032		686.77
PGE	RCEA	Redwood Coast Energy Authority	2033		687.38
PGE	RCEA	Redwood Coast Energy Authority	2034		687.96
PGE	RCEA	Redwood Coast Energy Authority	2035	ICCA	688.50

PGE SICE San Load Clean Enterpy 2024 (CCA 3.3 PGE SICE San Load Clean Enterpy 2025 (CCA 3.3 PGE SICE San Load Clean Enterpy 2026 (CCA 3.3 PGE SICE San Load Clean Enterpy 2028 (CCA 3.3 PGE SICE San Load Clean Enterpy 2028 (CCA 3.3 PGE SICE San Load Clean Enterpy 2028 (CCA 3.3 PGE SICE San Load Clean Enterpy 2030 (CA 3.2 PGE SICE San Load Clean Enterpy 2030 (CA 3.4 PGE SICE San Load Clean Enterpy 2031 (CA 4.4 PGE SICE San Load Clean Enterpy 2031 (CA 4.4 PGE SICE San Load Clean Enterpy 2031 (CA 4.4 PGE SICE San Load Clean Enterpy 2031 (CA 4.4 PGE SICE San Load Clean Enterpy 2031 (CA 4.4 PGE SICE San Load Clean Enterpy <	PGE	SJCE	San José Clean Energy	2022	ICCA I	2 790 74
SICE San José Clann Energy 2025 CCA 3.3 PGE SICE San José Clann Energy 2026 CCA 3.3 PGE SICE San José Clann Energy 2027 CCA 3.3 PGE SICE San José Clann Energy 2028 CCA 3.3 PGE SICE San José Clann Energy 2028 CCA 3.3 PGE SICE San José Clann Energy 2029 CCA 3.3 PGE SICE San José Clann Energy 2029 CCA 3.3 PGE SICE San José Clann Energy 2029 CCA 3.4 PGE SICE San José Clann Energy 2021 CCA 4.4 PGE SICE San José Clann Energy 2023 CCA 4.4 PGE SICE San José Clann Energy 2023 CCA 4.4 PGE SICE San José Clann Energy 2023 CCA 4.4 PGE SICE San José Clann Energy 2023 CCA 4.4 PGE SICE San José Clann Energy 2023 CCA 4.4 PGE SICE San José Clann Energy 2023 CCA 4.4 PGE SICE San José Clann Energy 2023 CCA 4.4 PGE SICE San José Clann Energy 2023 CCA 4.4 PGE SICE San José Clann Energy 2024 CCA 4.4 PGE SICE San José Clann Energy 2024 CCA 4.4 PGE SICE San José Clann Energy 2024 CCA 4.4 PGE SICE San José Clann Energy 2024 CCA 4.4 PGE SICE San José Clann Energy 2024 CCA 4.4 PGE SICE San José Clann Energy 2024 CCA 4.4 PGE SICE SICE San José Clann Energy 2024 CCA 3.3 PGE SICE S						3,789.74
PGE SICE San Jose Cleam Energy 2026 CCA 3.3 PGE SICE San Jose Cleam Energy 2027 CCA 3.3 PGE SICE San Jose Cleam Energy 2028 CCA 3.3 PGE SICE San Jose Cleam Energy 2029 CCA 3.3 PGE SICE San Jose Cleam Energy 2031 CCA 4.4 PGE SICE San Jose Cleam Energy 2031 CCA 4.4 PGE SICE San Jose Cleam Energy 2032 CCA 4.4 PGE SICE San Jose Cleam Energy 2033 CCA 4.4 PGE SICE San Jose Cleam Energy 2034 CCA 4.4 PGE SICE San Jose Cleam Energy 2034 CCA 4.4 PGE SICE San Jose Cleam Energy 2034 CCA 4.4 PGE SICE San Jose Cleam Energy Watthority 2032 CCA 4.4 PGE SICEA SILICON Valley Cleam Energy Authority 2032 CCA 3.3 PGE SVECA SILICON Valley Cleam Energy			C.			3,820.79
PGE SICE San José Clean Entergy 2027 (CCA 3.3 PGE SICE San José Clean Entergy 2028 (CCA 3.3 PGE SICE San José Clean Entergy 2029 (CCA 3.2 PGE SICE San José Clean Entergy 2031 (CCA 3.4 PGE SICE San José Clean Entergy 2031 (CCA 4.4 PGE SICE San José Clean Entergy 2033 (CCA 4.4 PGE SICE San José Clean Entergy 2034 (CCA 4.4 PGE SICE San José Clean Entergy 2035 (CCA 4.4 PGE SICE San José Clean Entergy 2035 (CCA 4.4 PGE SICE San José Clean Entergy 2035 (CCA 4.2 PGE SICE San José Clean Entergy 2035 (CCA 4.2 PGE SICEA SILICON VAILEY Clean Entergy Authority 2031 (CCA 3.3 PGE SVEEA SILICON VAILEY Clean Entergy Authority 2027 (CCA 3.3 PGE SVEEA			<u>.</u>			3,844.49
PGE SICE San Losé Clain Energy 2028 CCA 3.3 PGE SICE San Losé Clain Energy 2030 CCA 3.3 PGE SICE San Losé Clain Energy 2030 CCA 3.2 PGE SICE San Losé Clain Energy 2031 CCA 4.4 PGE SICE San Losé Clain Energy 2032 CCA 4.4 PGE SICE San Losé Clain Energy 2033 CCA 4.4 PGE SICE San Losé Clain Energy 2033 CCA 4.4 PGE SICE San Losé Clain Energy 2035 CCA 4.4 PGE SICE San Losé Clain Energy 2035 CCA 4.4 PGE SICEA Sillion Valley Clain Energy Authority 2024 CCA 3.3 PGE SIVCEA Sillion Valley Clain Energy Authority 2026 CCA 3.3 PGE SIVCEA Sillion Valley Clain Energy Authority 2026 CCA 3.3 PGE SIVCEA Sillion Valley Clain Energy Authority 2026 CCA 3.3 PGE SIVCEA<			<u>.</u>			3,867.62
PGE				_		3,894.50
PGE SICE San Losé Clean Energy 2030 CA 3.3 PGE SICE San Losé Clean Energy 2031 CA 4.4 PGE SICE San Losé Clean Energy 2032 CCA 4.4 PGE SICE San Losé Clean Energy 2033 CCA 4.4 PGE SICE San Losé Clean Energy 2034 CCA 4.4 PGE SICE San Losé Clean Energy 2035 CCA 4.4 PGE SICE San Losé Clean Energy 2035 CCA 4.4 PGE SICEA SILICON Valley Clean Energy Authority 2023 CCA 3.3 PGE SIVEA SILICON Valley Clean Energy Authority 2026 CCA 3.3 PGE SIVEA SILICON Valley Clean Energy Authority 2027 CCA 3.3 PGE SIVEA SILICON Valley Clean Energy Authority 2029 CCA 3.3 PGE SIVEA SILICON Valley Clean Energy Authority 2030 CCA						3,921.64
POE SICE San José Clean Energy 2031 CCA 4_4 POE SICE San José Clean Energy 2032 CCA 4_4 POE SICE San José Clean Energy 2034 CCA 4_4 POE SICE San José Clean Energy 2034 CCA 4_4 POE SICE San José Clean Energy 2034 CCA 4_4 POE SICE San José Clean Energy 2033 CCA 4_4 POE SICEA SILICON Valley Clean Energy Authority 2023 CCA 3_2 POE SIVEA SILICON Valley Clean Energy Authority 2025 CCA 3_3 POE SIVEA SILICON Valley Clean Energy Authority 2026 CCA 3_3 POE SIVEA SILICON Valley Clean Energy Authority 2020 CCA 3_3 POE SIVEA SILICON Valley Clean Energy Authority 2020 CCA 3_3 POE SIVEA SILICON Valley Clean Energy Authority 2031 CC			C.			3,957.58
POE			<u> </u>			3,995.71
PGE SICE San José Clean Energy 2033 (CAA 4, 9 PGE SICE San José Clean Energy 2034 (CCA 4, 9 PGE SICEA SILCE San José Clean Energy 2035 (CAA 4, 4, 9 PGE SICEA SILCON Valley Clean Energy Authority 2024 (CCA 3, 1 PGE SIVCEA SILCON Valley Clean Energy Authority 2024 (CCA 3, 1 PGE SIVCEA SILCON Valley Clean Energy Authority 2025 (CCA 3, 2 PGE SIVCEA SILCON Valley Clean Energy Authority 2027 (CCA 3, 3 PGE SVEEA SILCON Valley Clean Energy Authority 2029 (CCA 3, 3 PGE SVEEA SILCON Valley Clean Energy Authority 2029 (CCA 3, 3 PGE SVEEA SILCON Valley Clean Energy Authority 2031 (CCA 3, 3 PGE SVEEA SILCON Valley Clean Energy Authority 2031 (CCA 3, 3 PGE SVEEA SILCON Valley Clean Energy Authority 2032 (CCA 3, 3 PGE SVEEA SILCON Valley Clean En			<u> </u>			4,040.38
PGE SICE San José Clean Energy 2034 CCA 4, PGE SICE San José Clean Energy 2035 CCA 4, PGE SVCEA Slicon Valley Clean Energy Authority 2023 CCA 3, PGE SVCEA Slicon Valley Clean Energy Authority 2024 CCA 3, PGE SVCEA Slicon Valley Clean Energy Authority 2025 CCA 3, PGE SVCEA Slicon Valley Clean Energy Authority 2026 CCA 3, PGE SVCEA Slicon Valley Clean Energy Authority 2028 CCA 3, PGE SVCEA Slicon Valley Clean Energy Authority 2029 CCA 3, PGE SVCEA Slicon Valley Clean Energy Authority 2032 CCA 3, PGE SVCEA Slicon Valley Clean Energy Authority 2033 CCA 3, PGE SVCEA Slicon Valley Clean Energy Authority 2033 CCA 3, PGE SVCEA Slicon Valley Clean Energy Authority 2033 CCA 3, PGE SVCEA Slicon Valley Clean Energy Authority 2			<u> </u>			4,079.40
PGE SICE San José Clean Energy 2035 CCA 4, PGE SVECA Silicon Valley Clean Energy Authority 2023 CCA 3, PGE SVCEA Silicon Valley Clean Energy Authority 2024 CCA 3, PGE SVCEA Silicon Valley Clean Energy Authority 2025 CCA 3, PGE SVCEA Silicon Valley Clean Energy Authority 2027 CCA 3, PGE SVCEA Silicon Valley Clean Energy Authority 2027 CCA 3, PGE SVCEA Silicon Valley Clean Energy Authority 2029 CCA 3, PGE SVCEA Silicon Valley Clean Energy Authority 2031 CCA 3, PGE SVCEA Silicon Valley Clean Energy Authority 2031 CCA 3, PGE SVCEA Silicon Valley Clean Energy Authority 2032 CCA 3, PGE SVCEA Silicon Valley Clean Energy Authority 2032 CCA 3, PGE SVCEA Silicon Valley Clean Energy Authority 2032 CCA 3, PGE SVCEA Silicon Valley Clean Energy			<u> </u>			4,126.86
PGE			C.	_		4,174.19
PGE SVCEA Silicon Valley Clean Energy Authority 2024 CCA 3,1 PGE SVCEA Silicon Valley Clean Energy Authority 2025 CCA 3,2 PGE SVCEA Silicon Valley Clean Energy Authority 2026 CCA 3,2 PGE SVCEA Silicon Valley Clean Energy Authority 2027 CCA 3,3 PGE SVCEA Silicon Valley Clean Energy Authority 2029 CCA 3,3 PGE SVCEA Silicon Valley Clean Energy Authority 2029 CCA 3,3 PGE SVCEA Silicon Valley Clean Energy Authority 2031 CCA 3,3 PGE SVCEA Silicon Valley Clean Energy Authority 2031 CCA 3,1 PGE SVCEA Silicon Valley Clean Energy Authority 2031 CCA 3,1 PGE SVCEA Silicon Valley Clean Energy Authority 2032 CCA 3,2 PGE SVCEA Silicon Valley Clean Energy Authority 2034 CCA 3,3 PGE SVCEA Silicon Valley Clean Energy Authority 2034 CCA 3,3 PGE SVCEA <td< td=""><td>· ·</td><td></td><td><u>.</u></td><td>_</td><td></td><td>4,227.40</td></td<>	· ·		<u>.</u>	_		4,227.40
PGE SVCEA SIlicon Valley Clean Energy Authority 2025 (CA 3; PGE SVCEA Silicon Valley Clean Energy Authority 2027 (CA 3; PGE SVCEA Silicon Valley Clean Energy Authority 2027 (CA 3; PGE SVCEA Silicon Valley Clean Energy Authority 2029 (CA 3; PGE SVCEA Silicon Valley Clean Energy Authority 2030 (CA 3, PGE SVCEA Silicon Valley Clean Energy Authority 2031 (CA 3, PGE SVCEA Silicon Valley Clean Energy Authority 2031 (CA 3, PGE SVCEA Silicon Valley Clean Energy Authority 2031 (CA 3, PGE SVCEA Silicon Valley Clean Energy Authority 2031 (CA 3, PGE SVCEA Silicon Valley Clean Energy Authority 2032 (CA 3, PGE SVCEA Silicon Valley Clean Energy Authority 2035 (CA 3, PGE SVCEA Silicon Valley Clean Energy Authority 2035 (CA 3, PGE SVCEA Silicon Val				_		3,654.29
PGE SVCEA Silicon Valley Clean Energy Authority 2026 CCA 3; PGE SVCEA Silicon Valley Clean Energy Authority 2027 CCA 3; PGE SVCEA Silicon Valley Clean Energy Authority 2028 CCA 3; PGE SVCEA Silicon Valley Clean Energy Authority 2009 CCA 3; PGE SVCEA Silicon Valley Clean Energy Authority 2031 CCA 3; PGE SVCEA Silicon Valley Clean Energy Authority 2031 CCA 3; PGE SVCEA Silicon Valley Clean Energy Authority 2032 CCA 3; PGE SVCEA Silicon Valley Clean Energy Authority 2033 CCA 3; PGE SVCEA Silicon Valley Clean Energy Authority 2034 CCA 3; PGE SVCEA Silicon Valley Clean Energy Authority 2034 CCA 3; PGE SVCEA Silicon Valley Clean Energy Authority 2034 CCA 3; PGE SVCEA Silicon Valley Clean Energy Authority 2034 CCA 3; PGE SOMA Sonoma Clean				_		3,681.47
PGE SVCEA Silicon Valley Clean Energy Authority 2027 CCA 3, PGE SVCEA Silicon Valley Clean Energy Authority 2028 CCA 3, PGE SVCEA Silicon Valley Clean Energy Authority 2029 CCA 3, PGE SVCEA Silicon Valley Clean Energy Authority 2031 CCA 3, PGE SVCEA Silicon Valley Clean Energy Authority 2032 CCA 3, PGE SVCEA Silicon Valley Clean Energy Authority 2032 CCA 3, PGE SVCEA Silicon Valley Clean Energy Authority 2033 CCA 3, PGE SVCEA Silicon Valley Clean Energy Authority 2033 CCA 4, PGE SVCEA Silicon Valley Clean Energy Authority 2033 CCA 4, PGE SVCEA Silicon Valley Clean Energy Authority 2033 CCA 4, PGE SVCEA Silicon Valley Clean Energy Authority 2033 CCA 4, PGE SOMA Sonoma Clean Power 2023 CCA 2, PGE SOMA Sonoma Clean Power	PGE	SVCEA		2025	CCA	3,700.66
PGE	PGE	SVCEA		2026	CCA	3,720.83
PGE SVCEA Silicon Valley Clean Energy Authority 2020 CCA 3,3 PGE SVCEA Silicon Valley Clean Energy Authority 2030 CCA 3,3 PGE SVCEA Silicon Valley Clean Energy Authority 2031 CCA 3,3 PGE SVCEA Silicon Valley Clean Energy Authority 2032 CCA 3,3 PGE SVCEA Silicon Valley Clean Energy Authority 2033 CCA 3,3 PGE SVCEA Silicon Valley Clean Energy Authority 2033 CCA 4,4 PGE SVCEA Silicon Valley Clean Energy Authority 2035 CCA 4,4 PGE SVCEA Silicon Valley Clean Energy Authority 2035 CCA 4,4 PGE SOMA Sonoma Clean Power 2023 CCA 2,2 PGE SOMA Sonoma Clean Power 2023 CCA 2,2 PGE SOMA Sonoma Clean Power 2025 CCA 2,2 PGE SOMA Sonoma Clean Power 2027 CCA 2,2 PGE SOMA Sonoma Clean Power 2028 CCA 2,2	PGE	SVCEA	, .,	2027	CCA	3,744.51
PGE	PGE	SVCEA	Silicon Valley Clean Energy Authority			3,767.83
PGE SVCEA Silicon Valley Clean Energy Authority 2031 CCA 3,1 PGE SVCEA Silicon Valley Clean Energy Authority 2032 CCA 3,2 PGE SVCEA Silicon Valley Clean Energy Authority 2033 CCA 3,7 PGE SVCEA Silicon Valley Clean Energy Authority 2035 CCA 4,4 PGE SVCEA Silicon Valley Clean Energy Authority 2035 CCA 4,4 PGE SOMA Sonoma Clean Power 2023 CCA 2,2 PGE SOMA Sonoma Clean Power 2025 CCA 2,2 PGE SOMA Sonoma Clean Power 2026 CCA 2,2 PGE SOMA Sonoma Clean Power 2027 CCA 2,2 PGE SOMA Sonoma Clean Power 2029 CCA 2,2 PGE SOMA Sonoma Clean Power 2030 CCA 2,2 PGE SOMA Sonoma Clean Power 2031 CCA 2,2	PGE	SVCEA	Silicon Valley Clean Energy Authority	2029	CCA	3,799.80
PGE SVCEA Silicon Valley Clean Energy Authority 2032 CCA 3,1 PGE SVCEA Silicon Valley Clean Energy Authority 2034 CCA 3,2 PGE SVCEA Silicon Valley Clean Energy Authority 2034 CCA 3,3 PGE SVCEA Silicon Valley Clean Energy Authority 2035 CCA 4,4 PGE SOMA Sonoma Clean Power 2024 CCA 2,2 PGE SOMA Sonoma Clean Power 2025 CCA 2,2 PGE SOMA Sonoma Clean Power 2025 CCA 2,2 PGE SOMA Sonoma Clean Power 2027 CCA 2,2 PGE SOMA Sonoma Clean Power 2027 CCA 2,2 PGE SOMA Sonoma Clean Power 2029 CCA 2,2 PGE SOMA Sonoma Clean Power 2030 CCA 2,2 PGE SOMA Sonoma Clean Power 2031 CCA 2,2 <td< td=""><td>PGE</td><td>SVCEA</td><td>Silicon Valley Clean Energy Authority</td><td>2030</td><td>CCA</td><td>3,833.43</td></td<>	PGE	SVCEA	Silicon Valley Clean Energy Authority	2030	CCA	3,833.43
PGE SVCEA Silicon Valley Clean Energy Authority 2032 CCA 3,9 PGE SVCEA Silicon Valley Clean Energy Authority 2033 CCA 3,1 PGE SVCEA Silicon Valley Clean Energy Authority 2034 CCA 3,1 PGE SVCEA Silicon Valley Clean Energy Authority 2035 CCA 4,1 PGE SOMA Sonoma Clean Power 2024 CCA 2,2 PGE SOMA Sonoma Clean Power 2025 CCA 2,2 PGE SOMA Sonoma Clean Power 2026 CCA 2,2 PGE SOMA Sonoma Clean Power 2027 CCA 2,2 PGE SOMA Sonoma Clean Power 2027 CCA 2,2 PGE SOMA Sonoma Clean Power 2030 CCA 2,2 PGE SOMA Sonoma Clean Power 2031 CCA 2,2 PGE SOMA Sonoma Clean Power 2031 CCA 2,2 <td< td=""><td>PGE</td><td>SVCEA</td><td>Silicon Valley Clean Energy Authority</td><td>2031</td><td>CCA</td><td>3,874.42</td></td<>	PGE	SVCEA	Silicon Valley Clean Energy Authority	2031	CCA	3,874.42
PGE	PGE	SVCEA	Silicon Valley Clean Energy Authority	2032	CCA	3,909.98
PGE	PGE	SVCEA		2033	CCA	3,953.07
PGE SVCEA Silicon Valley Clean Energy Authority 2035 CCA 4 J PGE SOMMA Sonoma Clean Power 2023 CCA 2. PGE SOMA Sonoma Clean Power 2024 CCA 2. PGE SOMA Sonoma Clean Power 2026 CCA 2. PGE SOMA Sonoma Clean Power 2026 CCA 2. PGE SOMA Sonoma Clean Power 2027 CCA 2. PGE SOMA Sonoma Clean Power 2029 CCA 2. PGE SOMA Sonoma Clean Power 2030 CCA 2. PGE SOMA Sonoma Clean Power 2031 CCA 2. PGE SOMA Sonoma Clean Power 2031 CCA 2. PGE SOMA Sonoma Clean Power 2032 CCA 2. PGE SOMA Sonoma Clean Power 2033 CCA 2. PGE SOMA Sonoma Clean Power	PGE	SVCEA		2034	CCA	3,995.93
PGE SOMA Sonoma Clean Power 2023 CCA 2, PGE SOMA Sonoma Clean Power 2024 CCA 2, PGE SOMA Sonoma Clean Power 2025 CCA 2, PGE SOMA Sonoma Clean Power 2026 CCA 2, PGE SOMA Sonoma Clean Power 2027 CCA 2, PGE SOMA Sonoma Clean Power 2028 CCA 2, PGE SOMA Sonoma Clean Power 2030 CCA 2, PGE SOMA Sonoma Clean Power 2031 CCA 2, PGE SOMA Sonoma Clean Power 2031 CCA 2, PGE SOMA Sonoma Clean Power 2032 CCA 2, PGE SOMA Sonoma Clean Power 2033 CCA 2, PGE SOMA Sonoma Clean Power 2033 CCA 2, PGE SOMA Sonoma Clean Power 2033 CCA 2, PGE SOMA Sonoma Clean Power 2032 CCA 2, PGE <td></td> <td></td> <td></td> <td></td> <td></td> <td>4,043.64</td>						4,043.64
PGE SOMA Sonoma Clean Power 2024 CCA 2,7 PGE SOMA Sonoma Clean Power 2025 CCA 2,7 PGE SOMA Sonoma Clean Power 2026 CCA 2,7 PGE SOMA Sonoma Clean Power 2027 CCA 2,7 PGE SOMA Sonoma Clean Power 2029 CCA 2,7 PGE SOMA Sonoma Clean Power 2030 CCA 2,7 PGE SOMA Sonoma Clean Power 2031 CCA 2,7 PGE SOMA Sonoma Clean Power 2031 CCA 2,7 PGE SOMA Sonoma Clean Power 2032 CCA 2,2 PGE SOMA Sonoma Clean Power 2033 CCA 2,2 PGE SOMA Sonoma Clean Power 2034 CCA 2,7 PGE SOMA Sonoma Clean Power 2033 CCA 2,7 PGE SOMA Sonoma Clean Power						2,208.14
PGE SOMA Sonoma Clean Power 2025 CCA 2; PGE SOMA Sonoma Clean Power 2026 CCA 2; PGE SOMA Sonoma Clean Power 2027 CCA 2, PGE SOMA Sonoma Clean Power 2028 CCA 2, PGE SOMA Sonoma Clean Power 2030 CCA 2, PGE SOMA Sonoma Clean Power 2031 CCA 2, PGE SOMA Sonoma Clean Power 2031 CCA 2, PGE SOMA Sonoma Clean Power 2031 CCA 2, PGE SOMA Sonoma Clean Power 2033 CCA 2, PGE VCEA Valley Clean Energy Alliance 20						2,227.09
PGE SOMA Sonoma Clean Power 2026 CCA 2; PGE SOMA Sonoma Clean Power 2027 CCA 2; PGE SOMA Sonoma Clean Power 2028 CCA 2; PGE SOMA Sonoma Clean Power 2029 CCA 2; PGE SOMA Sonoma Clean Power 2030 CCA 2; PGE SOMA Sonoma Clean Power 2031 CCA 2; PGE SOMA Sonoma Clean Power 2033 CCA 2; PGE SOMA Sonoma Clean Power 2033 CCA 2; PGE SOMA Sonoma Clean Power 2034 CCA 2; PGE SOMA Sonoma Clean Power 2035 CCA 2; PGE SOMA Sonoma Clean Power 2035 CCA 2; PGE VCEA Valley Clean Energy Alliance 2023 CCA 2; PGE VCEA Valley Clean Energy Alliance						2,241.23
PGE SOMA Sonoma Clean Power 2027 CCA 2; PGE SOMA Sonoma Clean Power 2028 CCA 2, PGE SOMA Sonoma Clean Power 2029 CCA 2, PGE SOMA Sonoma Clean Power 2030 CCA 2, PGE SOMA Sonoma Clean Power 2031 CCA 2, PGE SOMA Sonoma Clean Power 2031 CCA 2, PGE SOMA Sonoma Clean Power 2033 CCA 2, PGE SOMA Sonoma Clean Power 2033 CCA 2, PGE SOMA Sonoma Clean Power 2035 CCA 2, PGE SOMA Sonoma Clean Power 2035 CCA 2, PGE VCEA Valley Clean Energy Alliance 2024 CCA 2, PGE VCEA Valley Clean Energy Alliance 2024 CCA 2, PGE VCEA Valley Clean Energy Alliance 2026 CCA 2, PGE VCEA Valley Clean Energy Alliance 2028 CCA 2, <td></td> <td></td> <td></td> <td>_</td> <td></td> <td>2,254.51</td>				_		2,254.51
PGE SOMA Sonoma Clean Power 2028 CCA 2, PGE SOMMA Sonoma Clean Power 2029 CCA 2, PGE SOMA Sonoma Clean Power 2031 CCA 2, PGE SOMA Sonoma Clean Power 2031 CCA 2, PGE SOMA Sonoma Clean Power 2033 CCA 2, PGE SOMA Sonoma Clean Power 2033 CCA 2, PGE SOMA Sonoma Clean Power 2035 CCA 2, PGE VCEA Valley Clean Energy Alliance 2024 CCA 2, PGE VCEA Valley Clean Energy Alliance						2,269.72
PGE SOMA Sonoma Clean Power 2029 CCA 2, PGE SOMMA Sonoma Clean Power 2031 CCA 2, PGE SOMA Sonoma Clean Power 2031 CCA 2, PGE SOMA Sonoma Clean Power 2032 CCA 2, PGE SOMA Sonoma Clean Power 2033 CCA 2, PGE SOMA Sonoma Clean Power 2035 CCA 2, PGE SOMA Sonoma Clean Power 2035 CCA 2, PGE SOMA Sonoma Clean Power 2035 CCA 2, PGE VCEA Valley Clean Energy Alliance 2023 CCA 2, PGE VCEA Valley Clean Energy Alliance 2025 CCA 2, PGE VCEA Valley Clean Energy Alliance 2027 CCA 2, PGE VCEA Valley Clean Energy Alliance 2029 CCA 2, PGE VCEA Valley						·
PGE SOMA Sonoma Clean Power 2030 CCA 2, PGE SOMMA Sonoma Clean Power 2031 CCA 2, PGE SOMMA Sonoma Clean Power 2033 CCA 2, PGE SOMA Sonoma Clean Power 2033 CCA 2, PGE SOMA Sonoma Clean Power 2034 CCA 2, PGE SOMA Sonoma Clean Power 2035 CCA 2, PGE SOMA Sonoma Clean Power 2035 CCA 2, PGE VCEA Valley Clean Energy Alliance 2023 CCA 2, PGE VCEA Valley Clean Energy Alliance 2025 CCA 2 PGE VCEA Valley Clean Energy Alliance 2027 CCA 2 PGE VCEA Valley Clean Energy Alliance 2029 CCA 2 PGE VCEA Valley Clean Energy Alliance 2030 CCA 2 PGE VCEA				_		2,285.47
PGE SOMA Sonoma Clean Power 2031 CCA 2,7 PGE SOMA Sonoma Clean Power 2032 CCA 2,9 PGE SOMA Sonoma Clean Power 2033 CCA 2,9 PGE SOMA Sonoma Clean Power 2034 CCA 2,7 PGE SOMA Sonoma Clean Power 2035 CCA 2,7 PGE VCEA Valley Clean Energy Alliance 2023 CCA 2,7 PGE VCEA Valley Clean Energy Alliance 2024 CCA 2,7 PGE VCEA Valley Clean Energy Alliance 2025 CCA 2,7 PGE VCEA Valley Clean Energy Alliance 2026 CCA 2,7 PGE VCEA Valley Clean Energy Alliance 2027 CCA 2,7 PGE VCEA Valley Clean Energy Alliance 2029 CCA 2,7 PGE VCEA Valley Clean Energy Alliance 2030 CCA 2,7 PGE VCEA Valley Clean Energy Alliance 2031 CCA 2,7 PGE VCEA Valley Clean En				_		2,305.87
PGE SOMA Sonoma Clean Power 2032 CCA 2,7 PGE SOMMA Sonoma Clean Power 2033 CCA 2,7 PGE SOMMA Sonoma Clean Power 2034 CCA 2,7 PGE SOMMA Sonoma Clean Power 2035 CCA 2,7 PGE VCEA Valley Clean Energy Alliance 2023 CCA 2,7 PGE VCEA Valley Clean Energy Alliance 2024 CCA 2,7 PGE VCEA Valley Clean Energy Alliance 2025 CCA 2,7 PGE VCEA Valley Clean Energy Alliance 2026 CCA 2,7 PGE VCEA Valley Clean Energy Alliance 2028 CCA 2,7 PGE VCEA Valley Clean Energy Alliance 2030 CCA 2,7 PGE VCEA Valley Clean Energy Alliance 2031 CCA 2,7 PGE VCEA Valley Clean Energy Alliance 2031 CCA 2,7				_		2,328.20
PGE SOMA Sonoma Clean Power 2033 CCA 2,7 PGE SOMA Sonoma Clean Power 2034 CCA 2,7 PGE SOMA Sonoma Clean Power 2035 CCA 2,7 PGE VCEA Valley Clean Energy Alliance 2023 CCA 2,7 PGE VCEA Valley Clean Energy Alliance 2025 CCA 2,7 PGE VCEA Valley Clean Energy Alliance 2025 CCA 2,7 PGE VCEA Valley Clean Energy Alliance 2026 CCA 2,7 PGE VCEA Valley Clean Energy Alliance 2027 CCA 2,7 PGE VCEA Valley Clean Energy Alliance 2028 CCA 2,7 PGE VCEA Valley Clean Energy Alliance 2030 CCA 2,7 PGE VCEA Valley Clean Energy Alliance 2031 CCA 2,7 PGE VCEA Valley Clean Energy Alliance 2032 CCA 2,7						2,353.02
PGE SOMA Sonoma Clean Power 2034 CCA 2,7 PGE SOMA Sonoma Clean Power 2035 CCA 2,7 PGE VCEA Valley Clean Energy Alliance 2023 CCA PPGE PGE VCEA Valley Clean Energy Alliance 2024 CCA CCA PGE VCEA Valley Clean Energy Alliance 2025 CCA CCA PGE VCEA Valley Clean Energy Alliance 2026 CCA CCA PGE VCEA Valley Clean Energy Alliance 2028 CCA CCA PGE VCEA Valley Clean Energy Alliance 2030 CCA CCA PGE VCEA Valley Clean Energy Alliance 2031 CCA CCA PGE VCEA Valley Clean Energy Alliance 2031 CCA CCA PGE VCEA Valley Clean Energy Alliance 2033 CCA CCA PGE VCEA Valley Clean Energy Alliance 2033 CCA CCA						2,374.63
PGE SOMA Sonoma Clean Power 2035 CCA 2, PGE VCEA Valley Clean Energy Alliance 2023 CCA 2, PGE VCEA Valley Clean Energy Alliance 2024 CCA CCA PGE VCEA Valley Clean Energy Alliance 2026 CCA CCA PGE VCEA Valley Clean Energy Alliance 2027 CCA CCA PGE VCEA Valley Clean Energy Alliance 2028 CCA CCA PGE VCEA Valley Clean Energy Alliance 2029 CCA CCA PGE VCEA Valley Clean Energy Alliance 2030 CCA CCA PGE VCEA Valley Clean Energy Alliance 2031 CCA CCA PGE VCEA Valley Clean Energy Alliance 2032 CCA CCA PGE VCEA Valley Clean Energy Alliance 2033 CCA CCA PGE VCEA Valley Clean Energy Alliance 2034 CCA CCA						2,400.97
PGE VCEA Valley Clean Energy Alliance 2023 CCA PGE VCEA Valley Clean Energy Alliance 2024 CCA PGE VCEA Valley Clean Energy Alliance 2025 CCA PGE VCEA Valley Clean Energy Alliance 2026 CCA PGE VCEA Valley Clean Energy Alliance 2027 CCA PGE VCEA Valley Clean Energy Alliance 2028 CCA PGE VCEA Valley Clean Energy Alliance 2029 CCA PGE VCEA Valley Clean Energy Alliance 2030 CCA PGE VCEA Valley Clean Energy Alliance 2031 CCA PGE VCEA Valley Clean Energy Alliance 2032 CCA PGE VCEA Valley Clean Energy Alliance 2033 CCA PGE VCEA Valley Clean Energy Alliance 2033 CCA PGE VCEA Valley Clean Energy Alliance 2034 CCA PGE VCEA Valley Clean Energy Alliance 2035 CCA PGE VCEA Valley Clean Energy Alliance 2035 CCA SCE						2,427.39
PGE VCEA Valley Clean Energy Alliance 2024 CCA PGE VCEA Valley Clean Energy Alliance 2025 CCA PGE VCEA Valley Clean Energy Alliance 2026 CCA PGE VCEA Valley Clean Energy Alliance 2028 CCA PGE VCEA Valley Clean Energy Alliance 2029 CCA PGE VCEA Valley Clean Energy Alliance 2030 CCA PGE VCEA Valley Clean Energy Alliance 2030 CCA PGE VCEA Valley Clean Energy Alliance 2031 CCA PGE VCEA Valley Clean Energy Alliance 2032 CCA PGE VCEA Valley Clean Energy Alliance 2032 CCA PGE VCEA Valley Clean Energy Alliance 2033 CCA PGE VCEA Valley Clean Energy Alliance 2034 CCA PGE VCEA Valley Clean Energy Alliance 2034 CCA PGE VCEA Valley Clean Ener				_		2,457.92
PGE VCEA Valley Clean Energy Alliance 2025 CCA PGE VCEA Valley Clean Energy Alliance 2026 CCA PGE VCEA Valley Clean Energy Alliance 2027 CCA PGE VCEA Valley Clean Energy Alliance 2028 CCA PGE VCEA Valley Clean Energy Alliance 2030 CCA PGE VCEA Valley Clean Energy Alliance 2031 CCA PGE VCEA Valley Clean Energy Alliance 2032 CCA PGE VCEA Valley Clean Energy Alliance 2032 CCA PGE VCEA Valley Clean Energy Alliance 2033 CCA PGE VCEA Valley Clean Energy Alliance 2034 CCA PGE VCEA Valley Clean Energy Alliance 2035 CCA PGE VCEA Valley Clean Energy Alliance 2035 CCA PGE VCEA Valley Clean Energy Alliance 2035 CCA PGE VCEA Valley Clean Ener			I.			727.31
PGE VCEA Valley Clean Energy Alliance 2026 CCA PGE VCEA Valley Clean Energy Alliance 2027 CCA PGE VCEA Valley Clean Energy Alliance 2028 CCA PGE VCEA Valley Clean Energy Alliance 2029 CCA PGE VCEA Valley Clean Energy Alliance 2030 CCA PGE VCEA Valley Clean Energy Alliance 2031 CCA PGE VCEA Valley Clean Energy Alliance 2032 CCA PGE VCEA Valley Clean Energy Alliance 2033 CCA PGE VCEA Valley Clean Energy Alliance 2034 CCA PGE VCEA Valley Clean Energy Alliance 2035 CCA PGE VCEA Valley Clean Energy Alliance 2035 CCA SCE AVCE Apple Valley Choice Energy 2023 CCA SCE AVCE Apple Valley Choice Energy 2023 CCA SCE AVCE Apple Valley Choice Energy 2024 CCA SCE AVCE Apple Valley Choice Energy 2025 CCA SCE						718.40
PGE VCEA Valley Clean Energy Alliance 2027 CCA PGE VCEA Valley Clean Energy Alliance 2028 CCA PGE VCEA Valley Clean Energy Alliance 2029 CCA PGE VCEA Valley Clean Energy Alliance 2030 CCA PGE VCEA Valley Clean Energy Alliance 2031 CCA PGE VCEA Valley Clean Energy Alliance 2032 CCA PGE VCEA Valley Clean Energy Alliance 2033 CCA PGE VCEA Valley Clean Energy Alliance 2034 CCA PGE VCEA Valley Clean Energy Alliance 2034 CCA PGE VCEA Valley Clean Energy Alliance 2035 CCA SCE AVCE Apple Valley Choice Energy 2023 CCA SCE AVCE Apple Valley Choice Energy 2023 CCA SCE AVCE Apple Valley Choice Energy 2026 CCA SCE AVCE Apple Valley Choice Ene						729.10
PGE VCEA Valley Clean Energy Alliance 2028 CCA PGE VCEA Valley Clean Energy Alliance 2029 CCA PGE VCEA Valley Clean Energy Alliance 2030 CCA PGE VCEA Valley Clean Energy Alliance 2031 CCA PGE VCEA Valley Clean Energy Alliance 2032 CCA PGE VCEA Valley Clean Energy Alliance 2033 CCA PGE VCEA Valley Clean Energy Alliance 2034 CCA PGE VCEA Valley Clean Energy Alliance 2035 CCA SCE AVCE Apple Valley Choice Energy 2023 CCA SCE AVCE Apple Valley Choice Energy 2023 CCA SCE AVCE Apple Valley Choice Energy 2024 CCA SCE AVCE Apple Valley Choice Energy 2025 CCA SCE AVCE Apple Valley Choice Energy 2025 CCA SCE AVCE Apple Valley Choice Energy 2026 CCA SCE AVCE Apple Valley Choice Energy 2028 CCA SCE AVCE </td <td></td> <td></td> <td></td> <td></td> <td></td> <td>740.65</td>						740.65
PGE VCEA Valley Clean Energy Alliance 2029 CCA PGE VCEA Valley Clean Energy Alliance 2030 CCA PGE VCEA Valley Clean Energy Alliance 2031 CCA PGE VCEA Valley Clean Energy Alliance 2032 CCA PGE VCEA Valley Clean Energy Alliance 2033 CCA PGE VCEA Valley Clean Energy Alliance 2034 CCA PGE VCEA Valley Clean Energy Alliance 2035 CCA SCE AVCE Apple Valley Choice Energy 2023 CCA SCE AVCE Apple Valley Choice Energy 2023 CCA SCE AVCE Apple Valley Choice Energy 2024 CCA SCE AVCE Apple Valley Choice Energy 2025 CCA SCE AVCE Apple Valley Choice Energy 2025 CCA SCE AVCE Apple Valley Choice Energy 2026 CCA SCE AVCE Apple Valley Choice Energy 2027 CCA SCE AVCE Apple Valley Choice Energy 2028 CCA SCE AVCE <td></td> <td></td> <td></td> <td></td> <td></td> <td>751.72</td>						751.72
PGE VCEA Valley Clean Energy Alliance 2030 CCA PGE VCEA Valley Clean Energy Alliance 2031 CCA PGE VCEA Valley Clean Energy Alliance 2032 CCA PGE VCEA Valley Clean Energy Alliance 2033 CCA PGE VCEA Valley Clean Energy Alliance 2034 CCA PGE VCEA Valley Clean Energy Alliance 2035 CCA SCE AVCE Apple Valley Choice Energy 2023 CCA SCE AVCE Apple Valley Choice Energy 2023 CCA SCE AVCE Apple Valley Choice Energy 2024 CCA SCE AVCE Apple Valley Choice Energy 2025 CCA SCE AVCE Apple Valley Choice Energy 2026 CCA SCE AVCE Apple Valley Choice Energy 2027 CCA SCE AVCE Apple Valley Choice Energy 2028 CCA SCE AVCE Apple Valley Choice Energy 2029 CCA SCE AVCE Apple Valley Choice Energy 2029 CCA						764.61
PGE VCEA Valley Clean Energy Alliance 2031 CCA PGE VCEA Valley Clean Energy Alliance 2032 CCA PGE VCEA Valley Clean Energy Alliance 2033 CCA PGE VCEA Valley Clean Energy Alliance 2034 CCA PGE VCEA Valley Clean Energy Alliance 2035 CCA SCE AVCE Apple Valley Choice Energy 2023 CCA SCE AVCE Apple Valley Choice Energy 2024 CCA SCE AVCE Apple Valley Choice Energy 2025 CCA SCE AVCE Apple Valley Choice Energy 2025 CCA SCE AVCE Apple Valley Choice Energy 2026 CCA SCE AVCE Apple Valley Choice Energy 2027 CCA SCE AVCE Apple Valley Choice Energy 2028 CCA SCE AVCE Apple Valley Choice Energy 2029 CCA SCE AVCE Apple Valley Choice Energy 2029 CCA	PGE	VCEA				774.12
PGE VCEA Valley Clean Energy Alliance 2032 CCA PGE VCEA Valley Clean Energy Alliance 2033 CCA PGE VCEA Valley Clean Energy Alliance 2034 CCA PGE VCEA Valley Clean Energy Alliance 2035 CCA SCE AVCE Apple Valley Choice Energy 2023 CCA SCE AVCE Apple Valley Choice Energy 2024 CCA SCE AVCE Apple Valley Choice Energy 2025 CCA SCE AVCE Apple Valley Choice Energy 2025 CCA SCE AVCE Apple Valley Choice Energy 2026 CCA SCE AVCE Apple Valley Choice Energy 2027 CCA SCE AVCE Apple Valley Choice Energy 2028 CCA SCE AVCE Apple Valley Choice Energy 2029 CCA SCE AVCE Apple Valley Choice Energy 2029 CCA SCE AVCE Apple Valley Choice Energy 2030 CCA						786.37
PGE VCEA Valley Clean Energy Alliance 2033 CCA PGE VCEA Valley Clean Energy Alliance 2034 CCA PGE VCEA Valley Clean Energy Alliance 2035 CCA SCE AVCE Apple Valley Choice Energy 2023 CCA SCE AVCE Apple Valley Choice Energy 2024 CCA SCE AVCE Apple Valley Choice Energy 2025 CCA SCE AVCE Apple Valley Choice Energy 2026 CCA SCE AVCE Apple Valley Choice Energy 2027 CCA SCE AVCE Apple Valley Choice Energy 2028 CCA SCE AVCE Apple Valley Choice Energy 2029 CCA SCE AVCE Apple Valley Choice Energy 2029 CCA SCE AVCE Apple Valley Choice Energy 2030 CCA	PGE	VCEA				798.81
PGE VCEA Valley Clean Energy Alliance 2034 CCA PGE VCEA Valley Clean Energy Alliance 2035 CCA SCE AVCE Apple Valley Choice Energy 2023 CCA SCE AVCE Apple Valley Choice Energy 2024 CCA SCE AVCE Apple Valley Choice Energy 2025 CCA SCE AVCE Apple Valley Choice Energy 2026 CCA SCE AVCE Apple Valley Choice Energy 2027 CCA SCE AVCE Apple Valley Choice Energy 2028 CCA SCE AVCE Apple Valley Choice Energy 2029 CCA SCE AVCE Apple Valley Choice Energy 2029 CCA SCE AVCE Apple Valley Choice Energy 2030 CCA	PGE	VCEA		2032	CCA	812.46
PGE VCEA Valley Clean Energy Alliance 2035 CCA SCE AVCE Apple Valley Choice Energy 2023 CCA SCE AVCE Apple Valley Choice Energy 2024 CCA SCE AVCE Apple Valley Choice Energy 2025 CCA SCE AVCE Apple Valley Choice Energy 2026 CCA SCE AVCE Apple Valley Choice Energy 2027 CCA SCE AVCE Apple Valley Choice Energy 2028 CCA SCE AVCE Apple Valley Choice Energy 2029 CCA SCE AVCE Apple Valley Choice Energy 2030 CCA	PGE	VCEA		2033	CCA	822.41
SCE AVCE Apple Valley Choice Energy 2023 CCA SCE AVCE Apple Valley Choice Energy 2024 CCA SCE AVCE Apple Valley Choice Energy 2025 CCA SCE AVCE Apple Valley Choice Energy 2026 CCA SCE AVCE Apple Valley Choice Energy 2027 CCA SCE AVCE Apple Valley Choice Energy 2028 CCA SCE AVCE Apple Valley Choice Energy 2029 CCA SCE AVCE Apple Valley Choice Energy 2030 CCA	PGE	VCEA	Valley Clean Energy Alliance	2034	CCA	833.95
SCE AVCE Apple Valley Choice Energy 2023 CCA SCE AVCE Apple Valley Choice Energy 2024 CCA SCE AVCE Apple Valley Choice Energy 2025 CCA SCE AVCE Apple Valley Choice Energy 2026 CCA SCE AVCE Apple Valley Choice Energy 2027 CCA SCE AVCE Apple Valley Choice Energy 2028 CCA SCE AVCE Apple Valley Choice Energy 2029 CCA SCE AVCE Apple Valley Choice Energy 2030 CCA	PGE	VCEA	Valley Clean Energy Alliance	2035	CCA	846.61
SCE AVCE Apple Valley Choice Energy 2024 CCA SCE AVCE Apple Valley Choice Energy 2025 CCA SCE AVCE Apple Valley Choice Energy 2026 CCA SCE AVCE Apple Valley Choice Energy 2027 CCA SCE AVCE Apple Valley Choice Energy 2028 CCA SCE AVCE Apple Valley Choice Energy 2029 CCA SCE AVCE Apple Valley Choice Energy 2030 CCA	SCE	AVCE	Apple Valley Choice Energy	2023	CCA	257.34
SCE AVCE Apple Valley Choice Energy 2025 CCA SCE AVCE Apple Valley Choice Energy 2026 CCA SCE AVCE Apple Valley Choice Energy 2027 CCA SCE AVCE Apple Valley Choice Energy 2028 CCA SCE AVCE Apple Valley Choice Energy 2029 CCA SCE AVCE Apple Valley Choice Energy 2030 CCA	SCE	AVCE	Apple Valley Choice Energy	2024	CCA	260.33
SCE AVCE Apple Valley Choice Energy 2026 CCA SCE AVCE Apple Valley Choice Energy 2027 CCA SCE AVCE Apple Valley Choice Energy 2028 CCA SCE AVCE Apple Valley Choice Energy 2029 CCA SCE AVCE Apple Valley Choice Energy 2030 CCA						262.17
SCE AVCE Apple Valley Choice Energy 2027 CCA SCE AVCE Apple Valley Choice Energy 2028 CCA SCE AVCE Apple Valley Choice Energy 2029 CCA SCE AVCE Apple Valley Choice Energy 2030 CCA						263.86
SCE AVCE Apple Valley Choice Energy 2028 CCA SCE AVCE Apple Valley Choice Energy 2029 CCA SCE AVCE Apple Valley Choice Energy 2030 CCA						266.23
SCE AVCE Apple Valley Choice Energy 2029 CCA SCE AVCE Apple Valley Choice Energy 2030 CCA			<u> </u>			268.11
SCE AVCE Apple Valley Choice Energy 2030 CCA			,			269.93
						271.62
post proposition p						271.02
						274.01

	1	1			
SCE	AVCE	Apple Valley Choice Energy			275.00
SCE	AVCE	Apple Valley Choice Energy	2034	CCA	275.88
SCE	AVCE	Apple Valley Choice Energy			276.96
SCE	3CE	Central Coast Community Energy	2023		553.70
SCE	3CE	Central Coast Community Energy	2024		551.01
SCE	3CE	Central Coast Community Energy			548.29
SCE	3CE	Central Coast Community Energy	2026	CCA	545.56
SCE	3CE	Central Coast Community Energy	2027	CCA	542.84
SCE	3CE	Central Coast Community Energy	2028	CCA	540.12
SCE	3CE	Central Coast Community Energy	2029	CCA	537.41
SCE	3CE	Central Coast Community Energy	2030	CCA	534.72
SCE	3CE	Central Coast Community Energy	2031	CCA	532.07
SCE	3CE	Central Coast Community Energy	2032	CCA	529.42
SCE	3CE	Central Coast Community Energy	2033	CCA	533.00
SCE	3CE	Central Coast Community Energy	2034	CCA	536.46
SCE	3CE	Central Coast Community Energy	2035		540.25
SCE	CPASC	Clean Power Alliance	2023		10,901.82
SCE	CPASC	Clean Power Alliance	2024		11,015.38
SCE	CPASC	Clean Power Alliance	2025	CCA	11,087.48
SCE	CPASC	Clean Power Alliance	2026	CCA	11,154.57
SCE	CPASC	Clean Power Alliance			11,134.37
SCE	CPASC	Clean Power Alliance			· ·
SCE	CPASC	Clean Power Alliance			11,321.00
SCE	CPASC	Clean Power Alliance			11,397.82
SCE	CPASC	Clean Power Alliance	2030	CCA	11,466.83
					11,543.04
SCE	CPASC	Clean Power Alliance	2032	CCA	11,589.56
SCE	CPASC	Clean Power Alliance			11,643.36
SCE	CPASC	Clean Power Alliance	2034		11,692.24
SCE	CPASC	Clean Power Alliance	2035	CCA	11,744.26
SCE	DCE	Desert Community Energy	2023		444.00
SCE	DCE	Desert Community Energy			456.45
SCE	DCE	Desert Community Energy	2025	CCA	459.91
SCE	DCE	Desert Community Energy	2026		461.33
SCE	DCE	Desert Community Energy		CCA	462.99
SCE	DCE	Desert Community Energy	2028	CCA	464.89
SCE	DCE	Desert Community Energy	2029	CCA	467.04
SCE	DCE	Desert Community Energy	2030	CCA	469.42
SCE	DCE	Desert Community Energy	2031	CCA	472.05
SCE	DCE	Desert Community Energy	2032	CCA	474.93
SCE	DCE	Desert Community Energy	2033	CCA	478.04
SCE	DCE	Desert Community Energy	2034	CCA	481.40
SCE	DCE	Desert Community Energy	2035	CCA	485.00
SCE	PALMDALE	Energy for Palmdale's Independent Choice	2023	CCA	552.80
SCE	PALMDALE	Energy for Palmdale's Independent Choice	2024	CCA	610.35
SCE	PALMDALE	Energy for Palmdale's Independent Choice	2025		615.01
SCE	PALMDALE	Energy for Palmdale's Independent Choice	2026		619.34
SCE	PALMDALE	Energy for Palmdale's Independent Choice	2027		625.16
SCE	PALMDALE	Energy for Palmdale's Independent Choice	2028		630.11
SCE	PALMDALE	Energy for Palmdale's Independent Choice	2029		635.50
SCE	PALMDALE	Energy for Palmdale's Independent Choice	2030		640.32
SCE	PALMDALE	Energy for Palmdale's Independent Choice	2031		645.45
SCE	PALMDALE	Energy for Palmdale's Independent Choice	2032		648.93
SCE	PALMDALE	Energy for Palmdale's Independent Choice	2032		652.90
SCE	PALMDALE	Energy for Palmdale's Independent Choice	2033		
SCE	PALMDALE	Energy for Palmdale's Independent Choice	2034		656.53
			2035		660.25
SCE	LCE	Lancaster Choice Energy			589.26
SCE	LCE	Lancaster Choice Energy	2024		595.74
SCE	LCE	Lancaster Choice Energy	2025		599.86
SCE	LCE	Lancaster Choice Energy	2026		603.66
SCE	LCE	Lancaster Choice Energy	2027		608.98
SCE	LCE	Lancaster Choice Energy	2028		613.16
SCE	LCE	Lancaster Choice Energy	2029	CCA	617.43

	1	1	1		
SCE	LCE	Lancaster Choice Energy	2030		621.33
SCE	LCE	Lancaster Choice Energy	2031	CCA	625.23
SCE	LCE	Lancaster Choice Energy	2032		627.58
SCE	LCE	Lancaster Choice Energy	2033		630.28
SCE	LCE	Lancaster Choice Energy	2034		632.71
SCE	LCE	Lancaster Choice Energy	2035		635.45
SCE	OCPA	Orange County Power Authority	2023		3,581.79
SCE	OCPA	Orange County Power Authority	2024		3,942.95
SCE	OCPA	Orange County Power Authority	2025		3,973.07
SCE	OCPA	Orange County Power Authority	2026		4,001.06
SCE	OCPA	Orange County Power Authority	2027	CCA	4,038.60
SCE	OCPA	Orange County Power Authority	2028		4,070.64
SCE	OCPA	Orange County Power Authority	2029		4,105.44
SCE	OCPA	Orange County Power Authority	2030		4,136.55
SCE	OCPA	Orange County Power Authority	2031		4,169.66
SCE	OCPA	Orange County Power Authority	2032	CCA	4,192.14
SCE	OCPA	Orange County Power Authority	2033	CCA	4,217.79
SCE	OCPA	Orange County Power Authority	2034	CCA	4,241.19
SCE	OCPA	Orange County Power Authority	2035	CCA	4,265.26
SCE	PRIME	Pico Rivera Innovative Municipal Energy	2023	CCA	225.46
SCE	PRIME	Pico Rivera Innovative Municipal Energy	2024	CCA	227.74
SCE	PRIME	Pico Rivera Innovative Municipal Energy	2025	CCA	229.23
SCE	PRIME	Pico Rivera Innovative Municipal Energy	2026	CCA	230.63
SCE	PRIME	Pico Rivera Innovative Municipal Energy	2027	CCA	232.58
SCE	PRIME	Pico Rivera Innovative Municipal Energy	2028	CCA	234.09
SCE	PRIME	Pico Rivera Innovative Municipal Energy	2029	CCA	235.74
SCE	PRIME	Pico Rivera Innovative Municipal Energy	2030	CCA	237.21
SCE	PRIME	Pico Rivera Innovative Municipal Energy	2031	CCA	238.91
SCE	PRIME	Pico Rivera Innovative Municipal Energy	2032	CCA	239.98
SCE	PRIME	Pico Rivera Innovative Municipal Energy	2033	CCA	241.22
SCE	PRIME	Pico Rivera Innovative Municipal Energy	2034	CCA	242.35
SCE	PRIME	Pico Rivera Innovative Municipal Energy	2035		243.51
SCE	POMONA	Pomona Choice Energy	2023		386.84
SCE	POMONA	Pomona Choice Energy	2024		390.80
SCE	POMONA	Pomona Choice Energy	2025		393.61
SCE	POMONA	Pomona Choice Energy	2026		396.20
SCE	POMONA	Pomona Choice Energy	2027	CCA	399.73
SCE	POMONA	Pomona Choice Energy	2028		402.69
SCE	POMONA	Pomona Choice Energy	2029		405.84
SCE	POMONA	Pomona Choice Energy	2030		408.68
SCE	POMONA	Pomona Choice Energy	2031		411.58
SCE	POMONA	Pomona Choice Energy	2032		413.48
SCE	POMONA	Pomona Choice Energy	2033		415.67
SCE	POMONA	Pomona Choice Energy	2034		417.66
SCE	POMONA	Pomona Choice Energy	2035		419.77
SCE	RMEA	Rancho Mirage Energy Authority	2023		280.26
SCE	RMEA	Rancho Mirage Energy Authority	2024		283.27
SCE	RMEA	Rancho Mirage Energy Authority	2024		284.97
SCE	RMEA	Rancho Mirage Energy Authority	2025		286.55
SCE	RMEA	Rancho Mirage Energy Authority	2020		288.84
SCE	RMEA	Rancho Mirage Energy Authority	2027		290.47
SCE	RMEA	Rancho Mirage Energy Authority	2028		290.47
SCE	RMEA	Rancho Mirage Energy Authority	2029		
SCE	RMEA	Rancho Mirage Energy Authority	2030		293.58 295.16
SCE	RMEA	Rancho Mirage Energy Authority	2031		
SCE	RMEA	Rancho Mirage Energy Authority Rancho Mirage Energy Authority	2032		295.99
					296.96
SCE	RMEA	Rancho Mirage Energy Authority	2034		297.83
SCE	RMEA	Rancho Mirage Energy Authority	2035		298.85
SCE	SJP	San Jacinto Power	2023		167.99
SCE	SJP	San Jacinto Power	2024		169.89
SCE	SJP	San Jacinto Power	2025		171.04
SCE	SJP	San Jacinto Power	2026	CCA	172.08

SCE	SJP	San Jacinto Power	2027	CCA	173.57
SCE	SJP	San Jacinto Power	2028	CCA	174.71
SCE	SJP	San Jacinto Power	2029	CCA	175.82
SCE	SJP	San Jacinto Power	2030	CCA	176.85
SCE	SJP	San Jacinto Power	2031	CCA	177.82
SCE	SJP	San Jacinto Power	2032		178.35
SCE	SJP	San Jacinto Power	2033		178.97
SCE	SJP	San Jacinto Power	2034		179.52
SCE	SJP	San Jacinto Power	2035		180.19
SCE	SBCE	Santa Barbara Clean Energy	2023		340.61
SCE	SBCE	Santa Barbara Clean Energy	2024		344.03
SCE	SBCE	Santa Barbara Clean Energy	2025		346.43
SCE	SBCE	Santa Barbara Clean Energy	2026		348.65
SCE	SBCE	Santa Barbara Clean Energy	2027	CCA	351.69
SCE	SBCE	Santa Barbara Clean Energy	2027		
SCE	SBCE	Santa Barbara Clean Energy	2028		354.17
					356.88
SCE	SBCE	Santa Barbara Clean Energy	2030	CCA	359.30
SCE	SBCE	Santa Barbara Clean Energy	2031		361.93
SCE	SBCE	Santa Barbara Clean Energy	2032		363.67
SCE	SBCE	Santa Barbara Clean Energy	2033		365.65
SCE	SBCE	Santa Barbara Clean Energy	2034		367.47
SCE	SBCE	Santa Barbara Clean Energy	2035		369.34
SDGE	CEA	Clean Energy Alliance	2023		1,266.71
SDGE	CEA	Clean Energy Alliance	2024		1,487.19
SDGE	CEA	Clean Energy Alliance	2025		1,496.06
SDGE	CEA	Clean Energy Alliance	2026	CCA	1,504.22
SDGE	CEA	Clean Energy Alliance	2027	CCA	1,512.16
SDGE	CEA	Clean Energy Alliance	2028	CCA	1,520.15
SDGE	CEA	Clean Energy Alliance	2029	CCA	1,528.80
SDGE	CEA	Clean Energy Alliance	2030	CCA	1,538.83
SDGE	CEA	Clean Energy Alliance	2031	CCA	1,551.38
SDGE	CEA	Clean Energy Alliance	2032	CCA	1,560.79
SDGE	CEA	Clean Energy Alliance	2033	CCA	1,571.53
SDGE	CEA	Clean Energy Alliance	2034	CCA	1,580.06
SDGE	CEA	Clean Energy Alliance	2035	CCA	1,589.35
SDGE	OCPA	Orange County Power Authority	2023	CCA	22.45
SDGE	ОСРА	Orange County Power Authority			169.46
SDGE	OCPA	Orange County Power Authority			170.47
SDGE	OCPA	Orange County Power Authority	2026		171.40
SDGE	OCPA	Orange County Power Authority	2027		172.31
SDGE	OCPA	Orange County Power Authority	2028		173.22
SDGE	OCPA	Orange County Power Authority	2029		174.20
SDGE	OCPA	Orange County Power Authority	2030		175.35
SDGE	OCPA	Orange County Power Authority Orange County Power Authority	2031		176.78
SDGE	OCPA	Orange County Power Authority Orange County Power Authority	2032		177.85
SDGE	OCPA	Orange County Power Authority Orange County Power Authority	2032		177.83
SDGE	OCPA	Orange County Power Authority Orange County Power Authority	2033		
SDGE	OCPA	Orange County Power Authority Orange County Power Authority	2034		180.04
SDGE	SDCP		2033		181.10
		San Diego Community Power			7,422.00
SDGE	SDCP	San Diego Community Power	2024		7,932.00
SDGE	SDCP	San Diego Community Power	2025		7,979.31
SDGE	SDCP	San Diego Community Power	2026		8,022.80
SDGE	SDCP	San Diego Community Power	2027		8,065.19
SDGE	SDCP	San Diego Community Power	2028		8,107.78
SDGE	SDCP	San Diego Community Power	2029		8,153.91
SDGE	SDCP	San Diego Community Power	2030		8,207.38
SDGE	SDCP	San Diego Community Power	2031		8,274.38
SDGE	SDCP	San Diego Community Power	2032		8,324.52
SDGE	SDCP	San Diego Community Power	2033		8,381.84
SDGE	SDCP	San Diego Community Power	2034		8,427.34
SDGE	SDCP	San Diego Community Power	2035	CCA	8,476.83
Bear Valley Electric Se	rvice BEAR	Bear Valley Electric Service	2023	CNAL	132.48

Bear Valley Electric Service		Bear Valley Electric Service	2024		132.48
Bear Valley Electric Service	BEAR	Bear Valley Electric Service	2025		133.49
	BEAR	Bear Valley Electric Service	2026		134.42
Bear Valley Electric Service	BEAR	Bear Valley Electric Service	2027	SMJ	135.68
Bear Valley Electric Service	BEAR	Bear Valley Electric Service	2028	SMJ	136.74
Bear Valley Electric Service	BEAR	Bear Valley Electric Service	2029	SMJ	137.83
Bear Valley Electric Service	BEAR	Bear Valley Electric Service	2030	SMJ	138.82
Bear Valley Electric Service	BEAR	Bear Valley Electric Service	2031	SMJ	139.78
Bear Valley Electric Service	BEAR	Bear Valley Electric Service	2032	SMJ	140.39
Bear Valley Electric Service	BEAR	Bear Valley Electric Service	2033	SMJ	141.09
Bear Valley Electric Service	BEAR	Bear Valley Electric Service	2034	SMJ	141.72
Bear Valley Electric Service	BEAR	Bear Valley Electric Service	2035	SMJ	142.42
Liberty Utilities	LIB	Liberty Utilities	2023	SMJ	557.67
Liberty Utilities	LIB	Liberty Utilities	2024	SMJ	557.67
Liberty Utilities	LIB	Liberty Utilities	2025	SMJ	561.20
Liberty Utilities	LIB	Liberty Utilities	2026	SMJ	564.80
Liberty Utilities	LIB	Liberty Utilities	2027	SMJ	568.80
Liberty Utilities	LIB	Liberty Utilities	2028	SMJ	571.91
Liberty Utilities I	LIB	Liberty Utilities	2029	SMJ	575.63
Liberty Utilities I	LIB	Liberty Utilities	2030	SMJ	579.47
Liberty Utilities	LIB	Liberty Utilities	2031	SMJ	583.93
Liberty Utilities	LIB	Liberty Utilities	2032	SMJ	587.55
Liberty Utilities	LIB	Liberty Utilities	2033	SMJ	591.50
Liberty Utilities I	LIB	Liberty Utilities	2034	SMJ	595.24
Liberty Utilities I	LIB	Liberty Utilities	2035	SMJ	599.16
PacifiCorp I	PCORP	PacifiCorp	2023	SMJ	871.48
PacifiCorp I	PCORP	PacifiCorp	2024	SMJ	874.56
PacifiCorp I	PCORP	PacifiCorp	2025	SMJ	873.57
PacifiCorp I	PCORP	PacifiCorp	2026	SMJ	876.03
PacifiCorp I	PCORP	PacifiCorp	2027	SMJ	879.11
PacifiCorp I	PCORP	PacifiCorp	2028	SMJ	884.04
PacifiCorp I	PCORP	PacifiCorp	2029	SMJ	884.19
PacifiCorp I	PCORP	PacifiCorp	2030	SMJ	886.08
PacifiCorp I	PCORP	PacifiCorp	2031	SMJ	887.88
PacifiCorp I	PCORP	PacifiCorp	2032	SMJ	892.46
PacifiCorp I	PCORP	PacifiCorp	2033	SMJ	892.14
PacifiCorp I	PCORP	PacifiCorp	2034	SMJ	894.41
PacifiCorp I	PCORP	PacifiCorp	2035	SMJ	896.63

Individual LSE Behind-the-Meter Photovoltaic (BTM PV) Assigned per June 15, 2022 ALJ Ruling - https://docs.cpuc.ca.gov. Generation (GWh) (measured at customer, not grossed up for Service A_I Type **LSE CPUC LSE Name** 2023 2024 2025 2026 2027 4,240 **PGE** IOU **PGE** Pacific Gas 3,907 4,552 4,867 5.198 PGE 1,655 1,783 1,903 2,024 2,149 **ESP** Pacific Gas **PGE** 771 3CE 719 824 881 **CCA** Central Coas 662 428 465 500 **536** 573 **PGE** CCA **CPSF** CleanPowers 1,223 PGE CCA **EBCE** East Bay Co 966 1,055 1,138 1,312 5 5 6 7 **PGE** CCA **KCCP** 6 King City Co 901 1,023 1,088 **PGE** CCA MCE Marin Clean 832 961 **PGE** CCA **PCEA** Peninsula C 497 541 578 621 671 274 298 320 342 366 PGE CCA **PIONEER** Pioneer Con 98 106 113 121 129 **PGE** CCA **RCEA** Redwood Co 550 598 642 687 735 PGE CCA SJCE San José Cl **PGE** CCA **SVCEA** 531 576 618 661 706 Silicon Valle 348 428 PGE 321 374 401 CCA **SOMA** Sonoma Cle 142 106 112 122 132 **PGE CCA VCEA** Valley Clean SCE IOU SCE Southern Ca 4,975 5,374 5,783 6,212 6,661 424 457 489 **522** 555 SCE **ESP** Southern Ca **AVCE** SCE CCA Apple Valley 49 53 57 61 66 SCE COBP CCA Baldwin Parl -----68 SCE CCA 3CE Central Coas 53 **57** 61 65 795 SCE **CPASC** 731 856 919 986 CCA Clean Power 64 71 SCE CCA DCE **76** 82 87 Desert Com SCE PALMDALE Energy for F 53 63 68 **73** 79 CCA 119 130 150 161 SCE CCA LCE Lancaster C 140 345 409 440 473 508 SCE CCA **OCPA** Orange Cou 14 16 **17** 18 19 SCE CCA **PRIME** Pico Rivera 12 13 14 15 16 SCE CCA **POMONA** Pomona Cho 72 78 84 90 97 SCE CCA **RMEA** Rancho Mira 38 41 48 51 SCE CCA SJP San Jacinto 44 33 44 36 38 41 SCE **CCA SBCE** Santa Barba SCE CCA **WCE** Western Cor 772 **SDGE** IOU **SDGE** San Diego G 875 823 877 934 779 836 SDGE **ESP** San Diego G 891 948 1,006 Clean Energ 316 338 362 386 **SDGE** CCA CEA 251 44 SDGE 4 36 39 41 CCA **OCPA** Orange Cou 1,468 1,684 1,805 1,931 2,060 **SDGE** CCA **SDCP** San Diego C

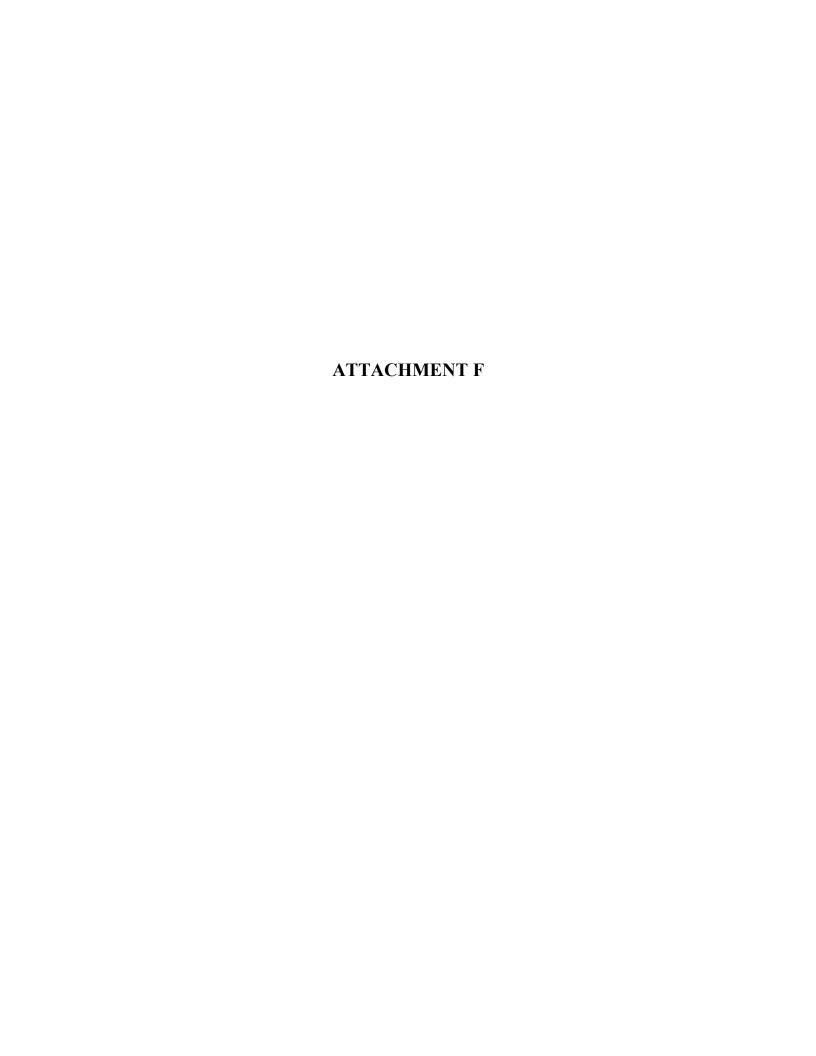
Forecast Assignments for Use in 2022 LSE IRPs							
/SearchRes.aspx?docformat=ALL&docid=485625915							
T&D losses)							
2028	2029	2030	2031	2032	2033	2034	2035
5,536	5,893	6,226	6,588	6,935	7,309	7,663	8,006
2,281	2,408	2,531	2,647	2,761	2,867	2,966	3,055
941	1,000	1,058	1,115	1,170	1,224	1,275	1,324
613	653	693	733	771	809	845	883
1,407	1,501	1,595	1,687	1,776	1,861	1,942	2,022
7	7	8	8	9	9	10	10
1,160	1,232	1,323	1,390	1,464	1,520	1,579	1,636
725	775	827	878	933	981	1,031	1,081
391	416	441	466	490	514	538	560
137	145	152	159	166	173	179	185
785	837	888	939	989	1,039	1,087	1,134
754	803	852	900	948	995	1,040	1,084
458	487	517	547	576	604	632	659
153	164	175	186	197	207	217	227
7,123	7,603	8,099	8,615	9,142	9,679	10,225	10,774
590	625	663	700	739	779	819	860
71	75	80	85	90	96	101	106
-	-	-	-	-	-	-	-
72	76	80	84	89	94	100	105
1,055	1,126	1,200	1,276	1,354	1,433	1,513	1,595
93	99	106	112	119	127	134	142
84	90	96	102	109	115	122	129
172	184	196	208	221	234	247	260
544	582	621	662	703	745	788	831
21	22	24	25	27	28	30	32
17	18	19	21	22	23	25	26
103	110	117	125	132	140	147	155
55	58	62	66	70	74	78	82
47	51	54	57	61	65	68	72
-	-	-	-	-	-	-	-
990	1,048	1,106	1,165	1,223	1,281	1,338	1,393
1,065	1,123	1,180	1,235	1,290	1,344	1,397	1,449
411	436	461	486	511	536	560	585
47	50	53	55	58	61	64	67
2,192	2,324	2,458	2,593	2,726	2,859	2,989	3,118

25 MMT in 2035					
	! g - https://docs.cpuc.ca.gov/SearchRes.aspx?docformat=ALL&docid=4856259	15			
ono benefitiano assignea per sune 13, 2022 no nami	nttps:// does.cpuc.cu.gov/ scuremes.uspx.usejonnut /teeauodu 4050255	15			
	LOT - MAN II - A LINDS - T MAN	Proportion of Total			Proportion of 2030 Load
Utility	LSEs within Host Utility Territory	Emissions	2030 Load (GWh)	2035 Load (GWh)	within EDU
Bear Valley Electric Service	N/A	0.000587773	138.8195	142.4237	N/A
Liberty Utilities	N/A	0.002547815	579.4708	599.1643	
	Pacific Gas and Electric (Bundled)		28,019.5589	29,851.6421	0.360148471
	Pacific Gas and Electric (Direct Access)		11,393.0000	11,393.0000	0.146439548
	Central Coast Community Energy		4,760.5600	4,935.5300	0.061189700
	CleanPowerSF		3,119.1600	3,292.8900	0.040092020
	East Bay Community Energy		7,179.7353	7,539.9690	0.092284489
	King City Community Power		35.7300	37.9500	0.000459254
	Marin Clean Energy		5,955.3400	6,098.5800	0.076546765
Pacific Gas and Electric Company	Peninsula Clean Energy Authority	0.338367402	3,721.4857	4,032.7067	0.047833993
	Pioneer Community Energy		1,986.4700	2,089.9200	0.025533026
	Redwood Coast Energy Authority		685.2700	688.5000	0.008808095
	San José Clean Energy		3,995.7100	4,227.4000	0.051358726
	Silicon Valley Clean Energy Authority		3,833.4300	4,043.6400	0.049272865
	Sonoma Clean Power		2,328.2000	2,457.9200	0.029925442
	Valley Clean Energy Alliance		786.3719	846.6143	0.010107605
PacifiCorp	N/A	0.007461402	886.0800	896.6300	N/A
	Southern California Edison (Bundled)		53,909.2120	55,275.8803	0.620027603
	Southern California Edison (Direct Access)		13,420.8510	13,420.8510	0.154357628
	Apple Valley Choice Energy		271.6200	276.9600	0.003123991
	Baldwin Park, City of		0.0000	0.0000	0.000000000
	Central Coast Community Energy		534.7200	540.2500	0.006149991
	Clean Power Alliance		11,466.8300	11,744.2600	0.131883789
	Desert Community Energy		469.4200	485.0000	0.005398954
	Energy for Palmdale's Independent Choice		640.3184	660.2467	0.007364513
Southern California Edison Company	Lancaster Choice Energy	0.331706007	621.3300	635.4500	0.007146121
	Orange County Power Authority		4,136.5522	4,265.2616	0.047575850
	Pico Rivera Innovative Municipal Energy		237.2100	243.5100	0.002728230
	Pomona Choice Energy		408.6800	419.7700	0.004700363
	Rancho Mirage Energy Authority		293.5800	298.8500	0.003376560
	San Jacinto Power		176.8500	180.1900	0.002034010
	Santa Barbara Clean Energy		359.2973	369.3414	0.004132397
	Western Community Energy		0.0000	0.0000	0.000000000
	San Diego Gas and Electric (Bundled)		3,694.0194	3,787.4129	0.210418652
	San Diego Gas and Electric (Direct Access)		3,940.0000	3,940.0000	0.224430195
San Diego Gas & Electric Company	Clean Energy Alliance	0.088426808	1,538.8253	1,589.3452	0.087654532
San Diego Gas & Electric Company	Orange County Power Authority	0.000420808	175.3453	181.1020	0.009988018
	Solana Energy Alliance		0.0000	0.0000	0.000000000
	San Diego Community Power		8,207.3800	8,476.8300	0.467508603
TOTAL		0.7690972	183,906.4331758	189,964.9911526	

D	2020 CHC First 1	2025 CHC 5
Proportion of 2035 Load	2030 GHG Emissions	2035 GHG Emissions
within EDU	Benchmark (MMT)	Benchmark (MMT)
N/A	0.014	0.012
N/A	0.063	0.051
0.366114920	3.013	2.466
0.139729241	1.225	0.941
0.060531718	0.512	0.408
0.040385589	0.335	0.272
0.092473813	0.772	0.623
0.000465437	0.004	0.003
0.074795923	0.640	0.504
0.049459058	0.400	0.333
0.025631786	0.214	0.173
0.008444096	0.074	0.057
0.051846870	0.430	0.349
0.049593149	0.412	0.334
0.030145115	0.250	0.203
0.010383286	0.085	0.070
N/A	0.204	0.168
0.622365246	4.933	3.993
0.151108788	1.228	0.969
0.003118363	0.025	0.020
0.000000000	0.000	0.000
0.006082813	0.049	0.039
0.132231621	1.049	0.848
0.005460739	0.043	0.035
0.007433886	0.043	0.048
0.007453886	0.059	0.046
0.048023669	0.378	0.308
0.002741741		
0.002741741	0.022 0.037	0.018
0.003364828 0.002028805	0.027 0.016	0.022 0.013
0.004158510 0.000000000	0.033 0.000	0.027
0.210708105	0.473	0.386
0.219197104 0.088421283	0.505	0.401
0.088421283	0.197 0.022	0.162 0.018
0.000000000	0.000	0.000
0.471598119	1.052	0.863
0.471530113	18.852	15.213
	10.032	15.215

Attachment E - 30 MMT CSP Page 98 of 98

GHG Benchmarks





MARIN COUNTY | NAPA COUNTY | UNINCORPORATED CONTRA COSTA COUNTY | UNINCORPORATED SOLANO COUNTY BENICIA | CONCORD | DANVILLE | EL CERRITO | FAIRFIELD | LAFAYETTE | MARTINEZ | MORAGA | OAKLEY PINOLE | PITTSBURG | PLEASANT HILL | RICHMOND | SAN PABLO | SAN RAMON | VALLEJO | WALNUT CREEK

Board of Directors Meeting Thursday, October 20, 2022 7:00 P.M.

This Meeting will be conducted via teleconference pursuant to the requirements of <u>Assembly Bill No. 361</u>. By using teleconference for this meeting, MCE continues to promote social distancing measures recommended by local officials.

Members of the public who wish to observe the Meeting and/or offer public comment may do so telephonically via the following teleconference call-in number and meeting ID:

For Viewing Access Join Zoom Meeting:

https://us02web.zoom.us/j/82085254745?pwd=dWs0b1NTbWNYbjRJbVZLMVZzZjZrUT09

Dial: (669) 900-9128 Webinar ID: 820 8525 4745 Meeting Passcode: 205749

Agenda Page 1 of 2

- 1. Roll Call/Quorum
- 2. Board Announcements (Discussion)
- 3. Public Open Time (Discussion)
- 4. Resolution No. 2022-12 Authorizing Continued Remote Teleconference Meetings for the Board of Directors and Every Committee of the Board of Directors Pursuant to Government Code 54953(e) (Action)
- 5. Report from Chief Executive Officer (Discussion)
- 6. Consent Calendar (Discussion/Action)
 - C.1 Approval of 8.18.22 Board Meeting Minutes
 - C.2 Approval of 9.29.22 Board Retreat Minutes
 - C.3 Approved Contracts for Energy Update

Agenda Page 2 of 2

- 7. Addition of Board Members to Committees (Discussion/Action)
- 8. Approval of CPUC Integrated Resource Plan (Discussion/Action)
- **9.** Approval of Power Purchase Agreement with Mayacma Geothermal, LLC (Discussion/Action)
- **10.** Implementation of Electrification Rate Schedule E-ELEC (Discussion/Action)
- 11. Proposed Amendments to MCE Policy 014: Investment Policy (Discussion/Action)
- **12.** Budget Update and Possible Rate Increase in FY 2022/23 (Discussion)
- 13. Board Matters & Staff Matters (Discussion)
- 14. Adjourn

The Board may discuss and/or take action on any or all of the items listed on the agenda irrespective of how the items are described.

DISABLED ACCOMMODATION: If you are a person with a disability which requires an accommodation, or an alternative format, please contact the Clerk of the Board at (925) 378-6732 as soon as possible to ensure arrangements for accommodation.