MCE

Kathrin Sears, Chair
County of Marin

Tom Butt, Vice Chair
City of Richmond

Bob McCaskill
City of Belvedere

Alan Schwartzman
City of Benicia

Sloan C. Bailey
Town of Corte Madera

Greg Lyman
City of El Cerrito

Barbara Coler
Town of Fairfax

Brandt Andersson
City of Lafayette

Kevin Haroff
City of Larkspur

Sashi McEntee
City of Mill Valley

Brad Wagenknecht
County of Napa

Denise Athas
City of Novato

P. Rupert Russell
Town of Ross

Ford Greene
Town of San Anselmo

Genoveva Calloway
City of San Pablo

Andrew McCullough
City of San Rafael

Ray Withy
City of Sausalito

Emmett O'Donnell
Town of Tiburon

Bob Simmons
City of Walnut Creek

1125 Tamalpais Avenue
San Rafael, CA 94901

1 (888) 632-3674

MCE
Special Meeting
Thursday, September 29, 2016
9:00 A.M.

Marin Art and Garden Center, Livermore Pavilion
30 Sir Francis Drake Blvd., Ross, CA 94957

Agenda Page 1 of 2

Swearing In of New Board Member (Discussion/Action)

9:00	1.	Welcome, Introductions, Opening Remarks & Board Announcements (Discussion)
9:10	2.	Prior Year Highlights & Goals for the Coming Year (Discussion)
9:45	3.	Overview & Case Studies of MCE's Local Renewable Energy Projects (Discussion)
10:00	4.	California Community Choice Association & Statewide Policy Role (Discussion)
10:30		**--Break--**
10:40	5.	Board Member Assignment to Committees (Discussion/Action)
10:45	6.	Update from MCE Lafayette's Community Leadership Advisory Group (Discussion)
11:00	7.	Invitation Period for Contra Costa County (Discussion/Action)
12:00		**--Lunch--**

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Agenda Page 2 of 2

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1:15   8. MCE Power Content Label & Attestation
              (Discussion/Action)

1:30   9. Emerging Technology & Innovative Programs
              (Discussion)
              A. SunVerge Presentation on Solar Generation Tied to
                 Battery Storage
              B. Update from American Canyon on Zero Water
                 Footprint Initiative
              C. eMotorWerks Presentation on MCE Electric Vehicle
                 Charging Pilot Program

3:00   10. Complete any Unfinished Items

4:00   11. Adjourn

Agenda material can be inspected at 1125 Tamalpais Avenue, San Rafael, CA 94901 on the Mission Avenue side of the building. The meeting facilities are in accessible locations. If you are a person with a disability and require this document in an alternate format (example: Braille, Large Print, Audiotape, CD-ROM), you may request it by using the contact information below. If you require accommodation (example: ASL Interpreter, reader, note taker) to participate in any MCE program, service or activity, you may request an accommodation by calling (415) 464-6032 (voice) or 711 for the California Relay Service or by e-mail at djackson@mceCleanEnergy.org not less than four work days in advance of the event.

N E W S Release

Office of Richmond Mayor Tom Butt

For Immediate Release   **September 8, 2016**

Click here for a downloadable version

Contact:
Alex Knox – Dir. of Policy and Strategy
Direct: (510) 621-1302
Mobile: (510) 407-1926

Richmond receives gold level awards for sustainability initiatives through Institute for Local Government's Beacon Program

RICHMOND, Calif. – Richmond Mayor Tom Butt announced on Thursday, September 8th that the City of Richmond has earned two gold awards from the Institute for Local Government's Beacon Program. The City is a Spotlight Award winner and received a Gold Level Award for 14% Agency Energy Savings and the Gold Level Award in Sustainability Best Practices.

The Beacon Program highlights innovative practices of local governments through awards and information sharing to that contribute to developing greener, healthier, and more sustainable communities. "I'm proud of the City's longstanding commitment to sustainability practices and combatting climate change," said Mayor Tom Butt. "All of the initiatives that helped us earn these awards were voluntary policies and practices that directly improve the quality of life for our residents."

Sustainability practices featured in Richmond's Beacon Program application include the recently redesigned Mathieu Court Alley, water conservation initiatives at City Hall, Richmond's partnership with MCE Clean Energy and the City Council's adoption of a Single-Use Bag Ordinance in 2013.

"Participation in the Beacon Program allows us to highlight our sustainability policies and programs as a model for other communities throughout the state," Mayor Butt stated. "Receiving gold brings noteworthy attention to Richmond. We've set out to be a leader in developing a green city and I'm pleased that years of creative practices are being recognized throughout California."

The Richmond City Council approved participation in the Beacon Program in April 2015 through a resolution sponsored by the Mayor's Office. This is the first year that the city participated in the program and the award application was prepared by Christopher Whitmore, Director of Community Engagement of the Mayor's Office. City of Richmond officials have been invited to accept the awards at a special ceremony in Long Beach, California in October during the League of California Cities Annual Conference.

More information about to Beacon Program and details about the City of Richmond's awards can be found at the following link: http://www.ca-ilg.org/beacon-participant-profile/city-richmond.

Project	Type*	Size (MW)	Year 1 Output (MWHs)	Estimated Completion
Buck Institute	Solar / Local PPA	1	1,800	Online
Cost Plus	Solar / FIT	0.265	540	Online
Richmond Parkway	Solar / FIT	1	1,800	Q4 2016
NWC Goodrick	Solar / FIT	1	1,800	Q4 2016
Redwood Landfill	Landfill Gas / Local PPA	3.6	30,000	Q4 2016
Cooley Quarry 1	Solar / Local Sol	1	1,800	Q1 2017
Cooley Quarry 2	Solar / FIT	0.5	900	Q1 2017
MCE Solar One	Solar / Local PPA	10.5	23,500	Q3 2017
Novato Self Storage	Solar / FIT	1	1,800	Q4 2017
	TOTAL	**19.86 MW**	**63,940 MWH**	

*PPA = Power Purchase Agreement;
 FIT = MCE Feed-in Tariff

Summary of Projects

Energy Generation

Enough to power
10,657 homes
every year

Buck Institute

1 MW
Local Solar

- **Completed:** Q2 2016
- **Contract:** Power Purchase Agreement
- **Term:** 25 years
- **Location:** Novato
- **Annual Energy:** 1,800 MWh
- **Power for:** 300 average homes every year

Cost Plus

265kW
FIT Solar Project

- **Completed:** Q3 2016

- **Contract:** Feed in Tariff

- **Term:** 20 years

- **Location:** Larkspur

- **Annual Energy:** 540 MWh

- **Power for:** 90 average homes every year

Redwood Landfill

3.6 MW
Landfill Gas

- **Expected Completion:** Q4 2016

- **Contract:** Power Purchase Agreement

- **Term:** 20 years

- **Location:** Novato

- **Annual Energy:** 30,000 MWh

- **Power for:** 5,000 average homes every year

QUESTIONS?

Agenda Item #03: Overview & Case Studies of MCE's Local Renewable Energy Project

Thank You

David Potovsky

Power Supply Contracts Manager

<u>**FOR IMMEDIATE RELEASE**</u>
September 21, 2016

Contact:
Charles Sheehan: csheehan@sfwater.org I 415.554.1548

California Community Choice Association Launches to Advance Local Energy Control and Green Electricity Options

California – Today, California's six Community Choice Aggregators (CCAs), CleanPowerSF, Lancaster Choice Energy, MCE, Peninsula Clean Energy, Silicon Valley Clean Energy Authority, and Sonoma Clean Power announce the launch of the California Community Choice Association, or CalCCA. With CalCCA as the preeminent statewide voice for these organizations, the Association will advocate for legislative and regulatory policies that support local control over electricity supply and promote cleaner energy choices.

Established by law in seven states, CCA is an energy supply model that allows local government entities to aggregate the electricity load of their residents, businesses, and municipal accounts to source electricity supplies that meet local objectives. California has the strongest collection of climate-friendly CCAs in the nation, providing pollution-reducing renewable energy options. All CCAs partner with their region's existing utility, which continues to deliver the power, maintain the grid, and bill customers. Today, California's CCAs are proliferating because they have a proven track record of success and are providing local communities with:

- consumer choice;
- community control through local governance;
- competitive and often lower electricity rates; and,
- an aggressive transition to clean energy sources.

Cumulatively, California's CCAs are already creating demand for more than 340 megawatts of new California renewables, investing in more than $1.6 billion of renewables, reducing greenhouse gas emissions by nearly 308,000 metric tons, and supporting over 2,500 California jobs.

Since the launch of California's first CCA in 2010, community choice has become a key tool for local governments striving to reduce community greenhouse gas emissions and contribute to California's climate action goals. Over 500,000 customers buy CCA energy supply which guarantees more renewables. The number of customers served is expected to more than double in the next year as new CCAs start service throughout the state.

A Board of Directors, consisting of Chief Executive Officers or General Managers of California's operational CCAs, manages CalCCA.

For information about CalCCA, please visit www.cal-cca.org.

###

Overview of MCE Board Offices and Committees
(Updated 9.22.16)

Board Offices
Kate Sears, Chair
Tom Butt, Vice Chair
Denise Athas, Auditor/Treasurer
Dawn Weisz, Secretary

Executive Committee
1. Tom Butt, Chair
2. Denise Athas
3. Sloan Bailey
4. Ford Greene
5. Kevin Haroff
6. Bob McCaskill
7. Kate Sears
8. *Available: Bob Simmons*

Technical Committee
1. Kate Sears, Chair
2. Kevin Haroff
3. Ford Greene
4. Emmett O'Donnell
5. Ray Withy
6. Greg Lyman
7. *Available: Brandt Anderson*

Ad Hoc 2016 Contracts Committee
1. Sloan Bailey
2. Barbara Coler
3. Ford Greene
4. Kevin Haroff
5. Brad Wagenknecht
6. Greg Lyman
7. Alan Schwartzman

Ad Hoc 2016 Audit Committee
1. Bob McCaskill
2. Sashi McEntee
3. Ray Withy

Ad Hoc Expansion Committee
1. Barbara Coler
2. Andrew McCullough
3. Brad Wagenknecht
4. Ray Withy

Ad Hoc 2016 Ratesetting Committee
1. Bob McCaskill
2. Sloan Bailey
3. Kevin Haroff
4. Emmett O'Donnell
5. Andrew McCullough

MCE Executive Committee

Maximum Membership: 8

Current Members: Tom Butt, City of Richmond (Chair)
                               Denise Athas, City of Novato
                               Sloan Bailey, Town of Corte Madera
                               Ford Greene, Town of San Anselmo
                               Kevin Haroff, City of City of Larkspur
                               Bob McCaskill, City of Belvedere
                               Kate Sears, County of Marin

New Members: MCE strives to assemble an Executive Committee comprised of at least
                               one county representative and one city/town representative from each
                               county in the MCE service area. Available seats on the Executive
                               Committee are therefore first offered to any interested and applicable
                               Board member whose county is not yet represented by one county and
                               one city member.

Current meeting date: First Wednesday of each month at 10:00am

Scope
The scope of the MCE Executive Committee is to explore, discuss and provide direction or approval on general issues related to MCE including legislation, regulatory compliance, strategic planning, outreach and marketing, contracts with vendors, human resources, finance and budgeting, and agenda setting for the regular MCE Board meetings and annual Board retreat.

Authority of Executive Committee
- Approval of legislative positions outside of Board-approved legislative plan
- Approval of contracts with vendors within the Board-approved budget
- Approval of new staff positions within Board-approved budget
- Approval of Ad Hoc Committee that serve in a temporary role and function (such as Ad Hoc Contracts Committee, Audit Committee or Inclusion Committee)
- Approval of Recipient of McGlashan Advocacy Award
- Recommendations to Board regarding annual budget and any budget adjustments
- Recommendations to Board regarding rate setting

- Recommendation to Board to enter into debt
- Recommendations to Board regarding adjustments to staff compensation ranges
- Recommendations to Board regarding Policies (such as Operating Reserve Policy, Financing Policy

MCE Clean Energy
My community. My choice.

MCE Technical Committee Overview

Maximum Membership:	8

Current Members: Kate Sears, County of Marin (Chair)
Kevin Haroff, City of Larkspur
Ford Greene, Town of San Anselmo
Emmett O'Donnell, City of Tiburon
Ray Withy, City of Sausalito
Greg Lyman, City of El Cerrito

New Members:

MCE strives to assemble a Technical Committee comprised of at least one county representative and one city/town representative from each county in the MCE service area. Available seats on the Technical Committee are therefore first offered to any interested and applicable Board member whose county is not yet represented by one county and one city member.

Current meeting date: First Monday of each month at 5:00pm

Scope

The scope of the MCE Technical Committee is to explore, discuss and provide direction or approval on issues related to electricity supply, distributed generation, greenhouse gas emissions, energy efficiency, and other topics of a technical nature.

Frequent topics include electricity generation technology and procurement, greenhouse gas accounting and reporting, energy efficiency programs and technology, energy storage technology, net energy metering tariff, local solar rebates, electric vehicle programs and technology, Feed-in Tariff activity and other local development, Light Green, Deep Green and Local Sol power content planning, long term integrated resource planning, regulatory compliance, and other activity related to the energy sector.

Authority of Technical Committee
- Review and discuss new technologies and potential application within MCE
- Approval of and changes to MCE's Net Energy Metering Tariff
- Approval of and changes to MCE's Feed in Tariff
- Approval of annual GHG emissions level and related reporting
- Approval of contracts with vendors for technical programs or services, energy efficiency program or services and procurement functions or services within the Board approved budget

- Approval of power purchase agreement within Board-approved budget
- Approval of adjustments to power supply product offerings
- Approval of updates to the Integrated Resource Plan
- Recommendation to Board for approval of contracts with technical vendors outside of Board approved budget.
- Recommendation to Board for approval of power purchase agreements outside of Board-approved budget

September 29, 2016

TO: Marin Clean Energy Board

FROM: Kirby Dusel, Technical Consultant

RE: MCE 2015 Power Content Label and Attestation (Agenda Item #8)

ATTACHMENT: A) Customer Communication: 2015 Power Content Label
                          B) Presentation: CY 2015 Power Resource Statistical Highlights

Dear Board Members:

SUMMARY:

California Public Utilities Code requires all retail sellers of electric energy, including Marin Clean Energy, to disclose "accurate, reliable, and simple-to-understand information on the sources of energy" that are delivered to their respective customers.[1] Applicable regulations direct retail sellers to provide such communications no later than October 1st.   The format for requisite communications is highly prescriptive, offering little flexibility to retail sellers when presenting such information to customers.   This format has been termed the "Power Content Label" by the California Energy Commission (CEC).

Information presented in the Power Content Label includes the proportionate share of total energy supply attributable to various resource types, including both renewable and conventional fuel sources. In the event that a retail seller meets a certain percentage of its supply obligation from unspecified resources, the report must identify such purchases as "unspecified sources of power." As your Board is aware, certain of MCE's supply agreements allow for the use of such unspecified purchases to satisfy a portion of MCE's energy requirements – these purchases have been appropriately identified as "unspecified sources of power" in the Power Content Label.

During the 2015 calendar year, MCE successfully delivered a substantial portion of its electric energy supply from various renewable energy sources, including wind, solar, geothermal, hydroelectricity, biomass and biogas – for Light Green customers, the percentage of supply attributable to renewable energy sources approximated 52 percent;

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[1] California Public Utilities Code Section 398.1(b)

1

for Deep Green customers, renewable energy comprised 100 percent of the supply portfolio. A copy of MCE's 2015 Power Content Label is presented below:

POWER CONTENT LABEL			
ENERGY RESOURCES	2015 LIGHT GREEN Power Mix	2015 DEEP GREEN Power Mix	2015 CA Power Mix
Eligible Renewable	**52%**	**100%**	**22%**
-- Biomass & waste	5%	0%	3%
-- Geothermal	2%	0%	4%
-- Small hydroelectric	4%	0%	1%
-- Solar	5%	25%	6%
-- Wind	36%	75%	8%
Coal	0%	0%	6%
Large Hydroelectric	12%	0%	5%
Natural Gas	12%	0%	44%
Nuclear	0%	0%	9%
Other	0%	0%	0%
Unspecified sources of power*	25%	0%	14%
TOTAL	100%	100%	100%

Consistent with applicable regulations, MCE will complete requisite customer communications in accordance with the October 1st deadline. Customers receiving Power Content Label communications will include those enrolled in the MCE program as of December 31, 2015 – the distribution list was derived based on prior discussions with designated CEC staff. The entirety of the communication provided to the aforementioned group of MCE customers is attached for your review.

While developing MCE's 2015 Power Content Label, staff performed a detailed review of all power purchases completed for the 2015 calendar year. This review included an inventory of all renewable energy transfers within MCE's Western Renewable Energy Generation Information System (WREGIS) accounts, pertinent transaction records, and a requisite independent audit for MCE's voluntary Deep Green, 100% renewable energy program.[2] Based on staff's review of available data and findings of the independent auditor (related to the Deep Green product offering), the information presented in the Power Content Label was determined to be accurate.

To fulfill its Power Content Label reporting obligation, MCE must also provide the CEC with your Board's attestation regarding the accuracy of information included in the Power Content Label – this internally administered process is permitted under the regulations pertaining to California's Power Source Disclosure Program (PSDP), which allow public entities, including MCE, to self-certify the accuracy of one retail electricity product, so

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[2] MCE's Deep Green retail service option is a Green-e Energy certified product, conforming to guidelines established by the Center for Resource Solutions, the Green-e Energy program administrator. As part of this certification, MCE must successfully complete an annual independent audit of power sources, ensuring the delivery of qualifying renewable energy to participating Deep Green customers.

2

long as other retail offerings are subject to third-party audit. Because MCE's Deep Green product offering was independently audited (a process that was completed in June 2016 for the 2015 operating year), MCE proceeded with self-certification of its Light Green product offering, consistent with PSDP regulations.

In consideration of the aforementioned internal review, independent audit and applicable regulations, staff requests that your Board accept this determination and attest to the accuracy of information included in MCE's 2015 Power Content Label, which will soon be distributed to MCE customers. Should your Board endorse staff's recommendation, a copy of this staff report, related meeting minutes and a copy of MCE's 2015 Audit Report for the Deep Green product offering will be forwarded to the CEC, thereby completing MCE's Power Content Label reporting obligation for the 2015 calendar year.

Recommendation: Endorse the accuracy of information presented in MCE's 2015 Power Content Label based on staff's review.

MCE

1125 Tamalpais Avenue
San Rafael, CA 94901

Stay in touch: @mceCleanEnergy

IMPORTANT: You are receiving this notice because on December 31, 2015 you were an MCE customer. Receiving this notice does not mean that you are currently an MCE customer.

HELLO
CHANGEMAKER
Your energy has made a difference!

MCE CUSTOMERS LIKE YOU PLAY AN IMPORTANT ROLE IN IMPROVING OUR ENVIRONMENT

Light Green
50% renewable homes

Deep Green
100% renewable homes

POLLUTION **FREE**

561 lbs of polluting greenhouse gas emissions **eliminated** in a year*

2,417 lbs of polluting greenhouse gas emissions **eliminated** in a year*

That's like avoiding 610 miles in traffic!**

That's like avoiding 2,628 miles in traffic!**

* Based on a typical residential usage of 5,556 kilowatt–hours/year and the most recently reported greenhouse gas (GHG) emission factors for MCE and PG&E.

** Based on the EPA's GHG equivalencies: epa.gov/energy/greenhouse-gas-equivalencies-calculator

Printed on recycled paper with soy ink.

Together we're creating a cleaner energy future for California.

POWER CONTENT LABEL

ENERGY RESOURCES	2015 MCE LIGHT GREEN POWER MIX	2015 MCE DEEP GREEN POWER MIX	2015 CA POWER MIX** (for comparison)
Eligible Renewable	**52%**	**100%**	**22%**
Biomass & biowaste	5%	0%	3%
Geothermal	2%	0%	4%
Eligible hydroelectric	4%	0%	1%
Solar	5%	25%	6%
Wind	36%	75%	8%
Coal	**0%**	**0%**	**6%**
Large Hydroelectric	**12%**	**0%**	**5%**
Natural Gas	**12%**	**0%**	**44%**
Nuclear	**0%**	**0%**	**9%**
Other	**0%**	**0%**	**0%**
Unspecified sources of power*	**25%**	**0%**	**14%**
TOTAL	**100%**	**100%**	**100%**

* "Unspecified sources of power" means electricity from transactions that are not traceable to specific generation sources.

** Percentages are estimated annually by the California Energy Commission based on the electricity sold to California consumers during the previous year.

For specific information about these electricity products, contact **MCE** at **1 (888) 632–3674** or **info@mceCleanEnergy.org**. For general information about the Power Content Label, contact the California Energy Commission at 1 (844) 421–6229 or www.energy.ca.gov/pcl.

POWERED BY
DEEP
GREEN
100%
RENEWABLE

~$5/mo.
more for the average household

1/2
of the premium is reinvested in building local solar projects

CHOOSE 100% RENEWABLE
mceCleanEnergy.org/dg-enroll
1 (888) 632–3674
info@mceCleanEnergy.org

MCE Power Statistics Update: 2015

Annual Board Retreat | September 29, 2016

MCE 2015 Power Content Label

POWER CONTENT LABEL			
ENERGY RESOURCES	**2015 MCE TOTAL POWER MIX** (Actual)	**2015 LIGHT GREEN POWER MIX** (Actual)	**2015 DEEP GREEN POWER MIX** (Actual)
Eligible Renewable	**53%**	**52%**	**100%**
-- Biomass & waste	5%	5%	0%
-- Geothermal	2%	2%	0%
-- Small hydroelectric	4%	4%	0%
-- Solar	6%	5%	25%
-- Wind	37%	36%	75%
Coal	0%	0%	0%
Large Hydroelectric	11%	12%	0%
Natural Gas	11%	12%	0%
Nuclear	0%	0%	0%
Other	0%	0%	0%
Unspecified sources of power*	**24%**	**25%**	**0%**
TOTAL	**100%**	**100%**	**100%**

MCE vs. PG&E: 2015 Power Content Label

POWER CONTENT LABEL			
ENERGY RESOURCES	**2015 LIGHT GREEN POWER MIX** (Actual)	**2015 DEEP GREEN POWER MIX** (Actual)	**2015 PG&E POWER MIX** (Actual)
Eligible Renewable	**52%**	**100%**	**30%**
-- Biomass & waste	5%	0%	4%
-- Geothermal	2%	0%	5%
-- Small hydroelectric	4%	0%	1%
-- Solar	5%	25%	11%
-- Wind	36%	75%	8%
Coal	0%	0%	0%
Large Hydroelectric	12%	0%	6%
Natural Gas	12%	0%	25%
Nuclear	0%	0%	23%
Other	0%	0%	0%
Unspecified sources of power*	**25%**	**0%**	**17%**
TOTAL	**100%**	**100%**	**100%**

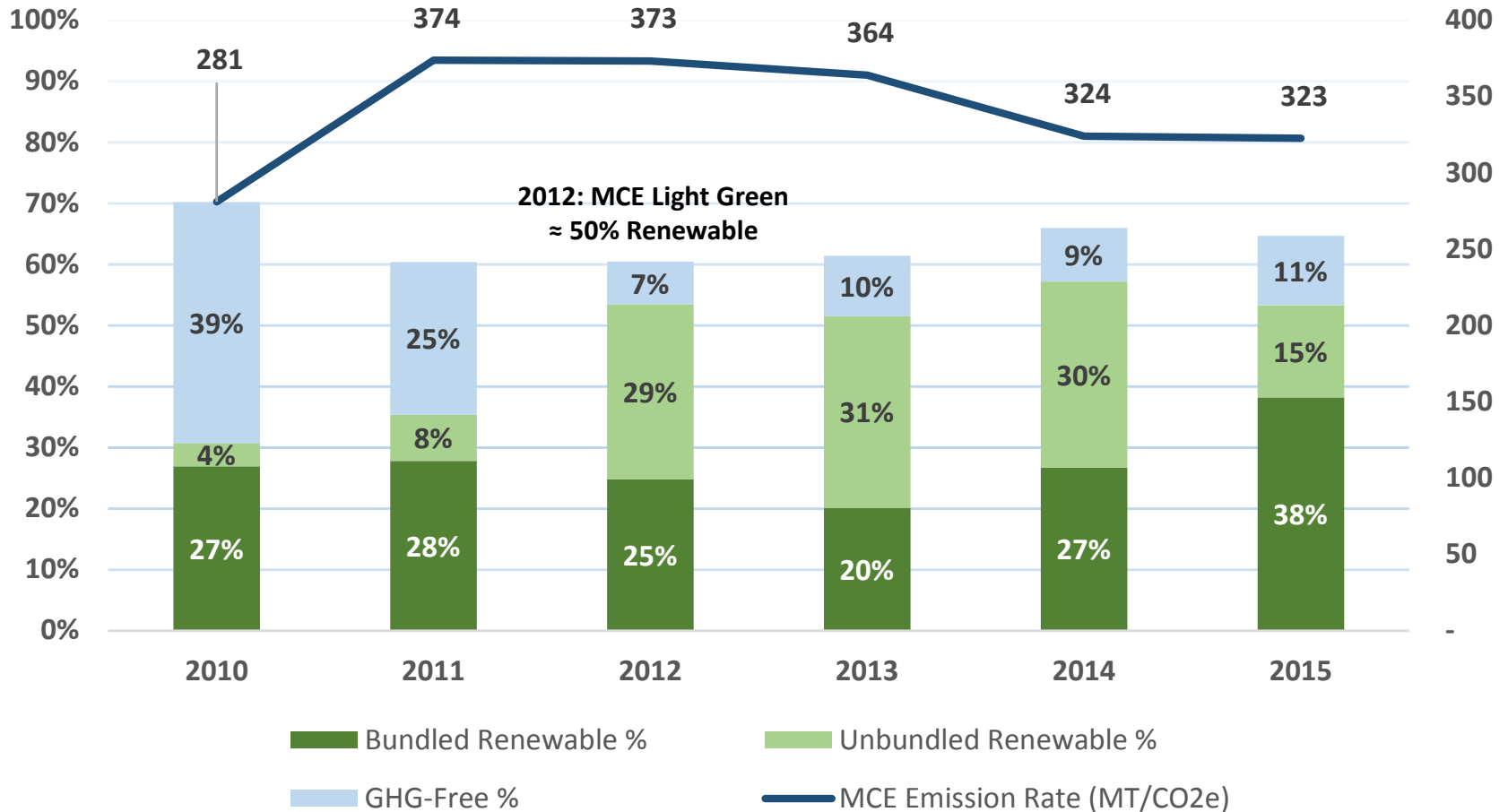Source: PG&E 2015 Power Source Disclosure Annual Report

MCE Supplier Inventory (2015)

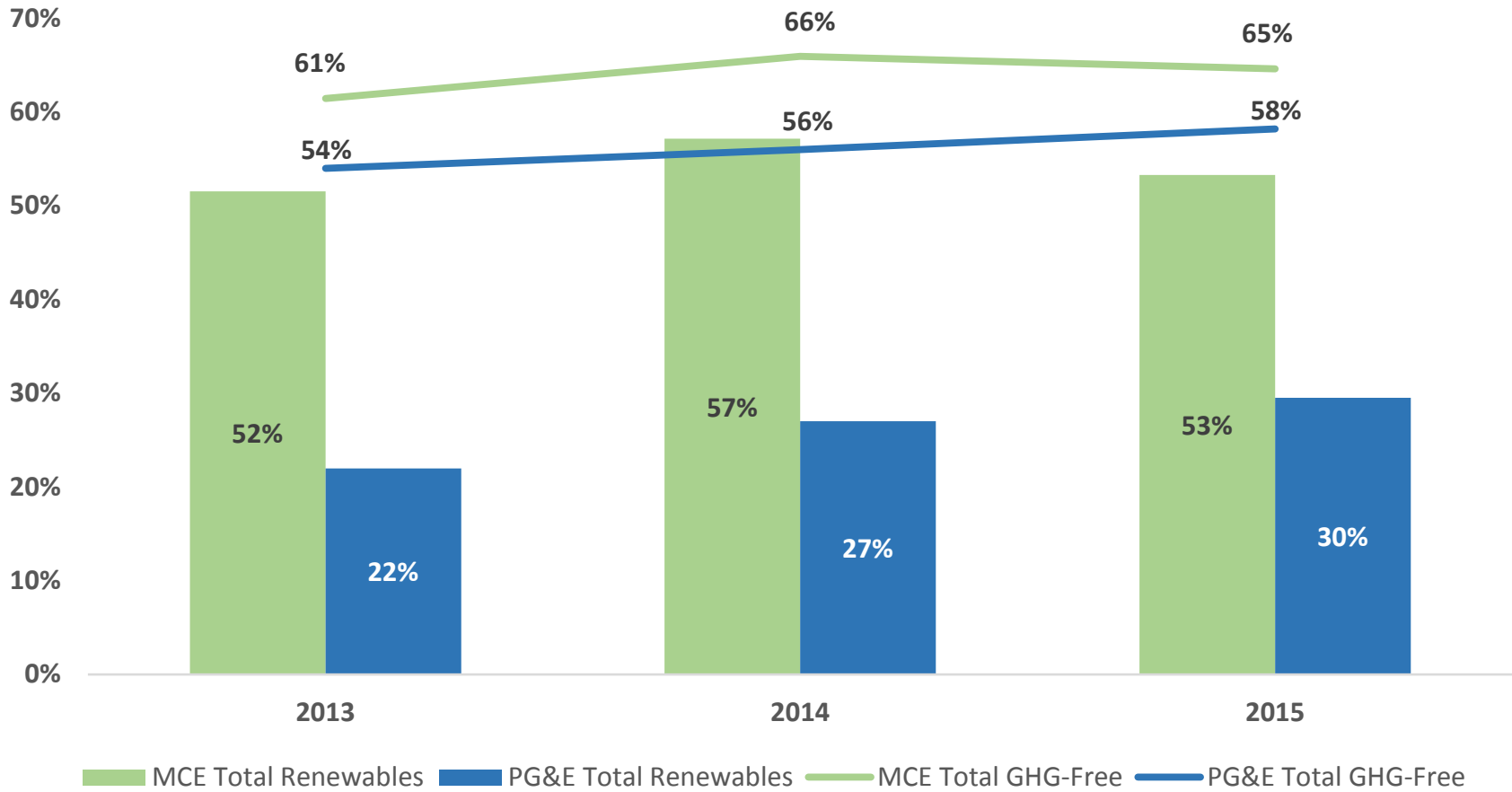*MCE received energy products from 15 unique suppliers in 2015*
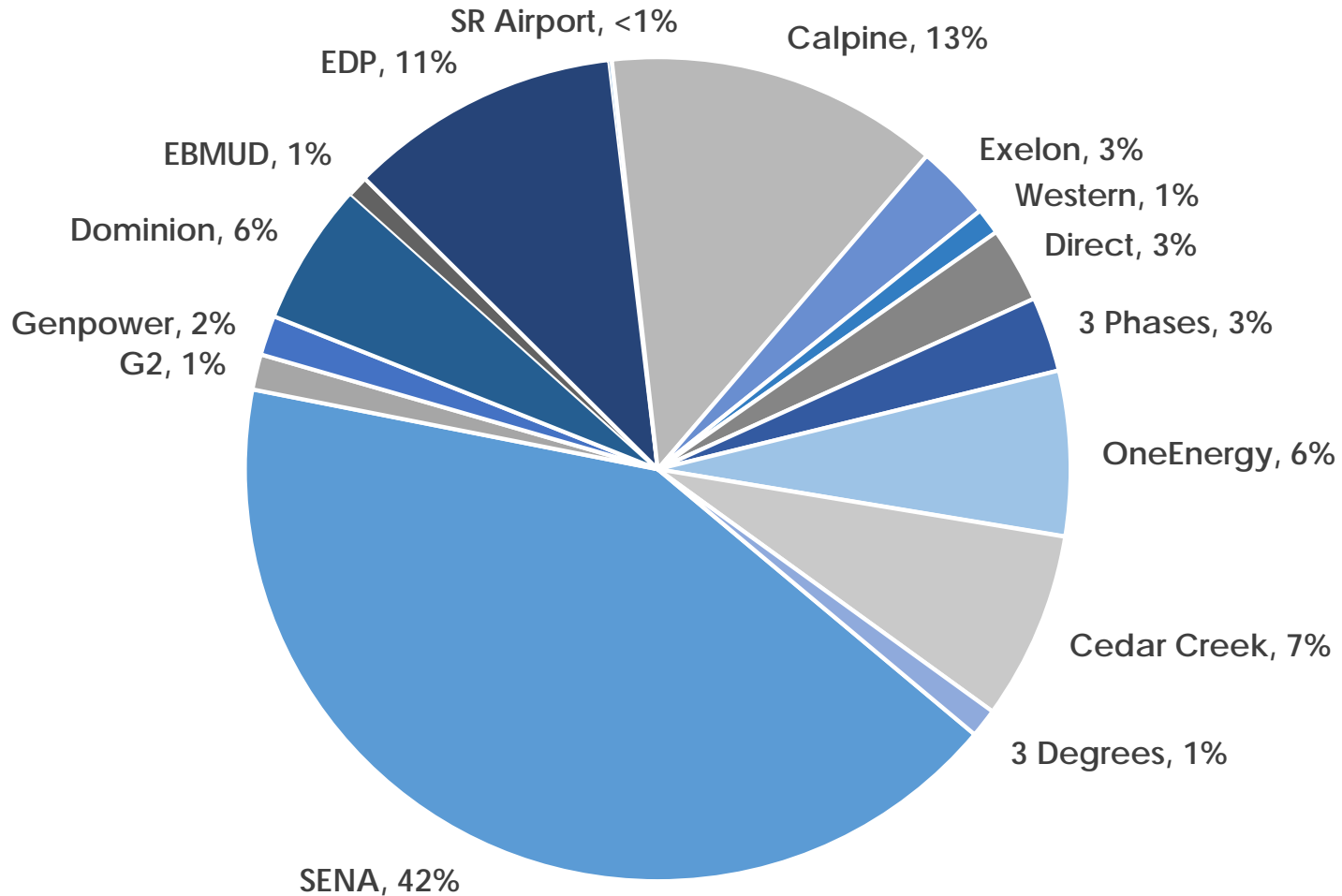
MCE Historical Power Content


MCE Historical Power Content

2012: MCE Light Green ≈ 50% Renewable

Legend:
- Bundled Renewable %
- Unbundled Renewable %
- GHG-Free %
- MCE Emission Rate (MT/CO2e)

Year	Bundled Renewable %	Unbundled Renewable %	GHG-Free %	MCE Emission Rate (MT/CO2e)
2010	27%	4%	39%	281
2011	28%	8%	25%	374
2012	25%	29%	7%	373
2013	20%	31%	10%	364
2014	27%	30%	9%	324
2015	38%	15%	11%	323

MCE vs. PG&E: Three-Year Summary

Clean Energy Comparison: MCE vs. PG&E

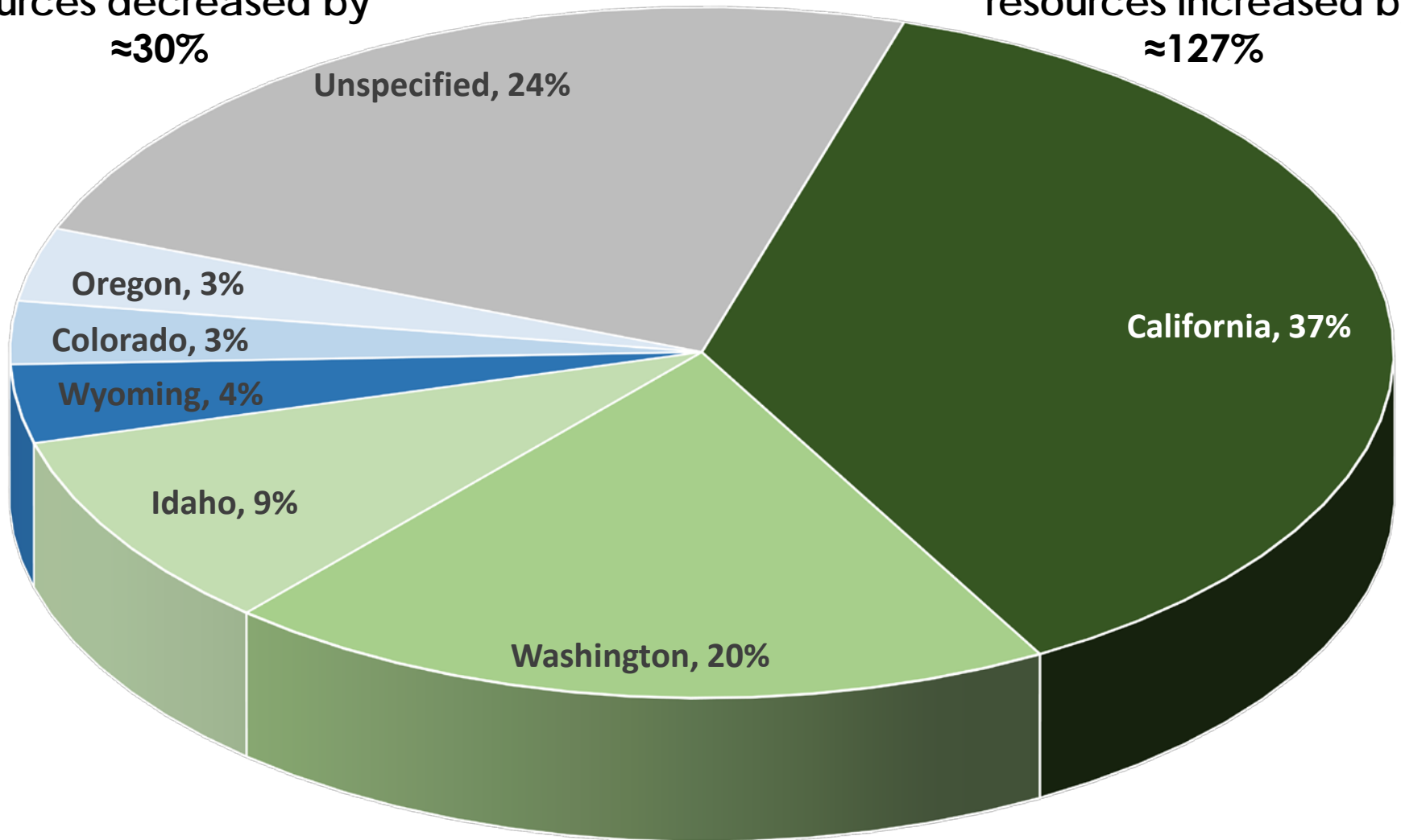Source: Annual Power Source Disclosure Reports and Power Content Labels
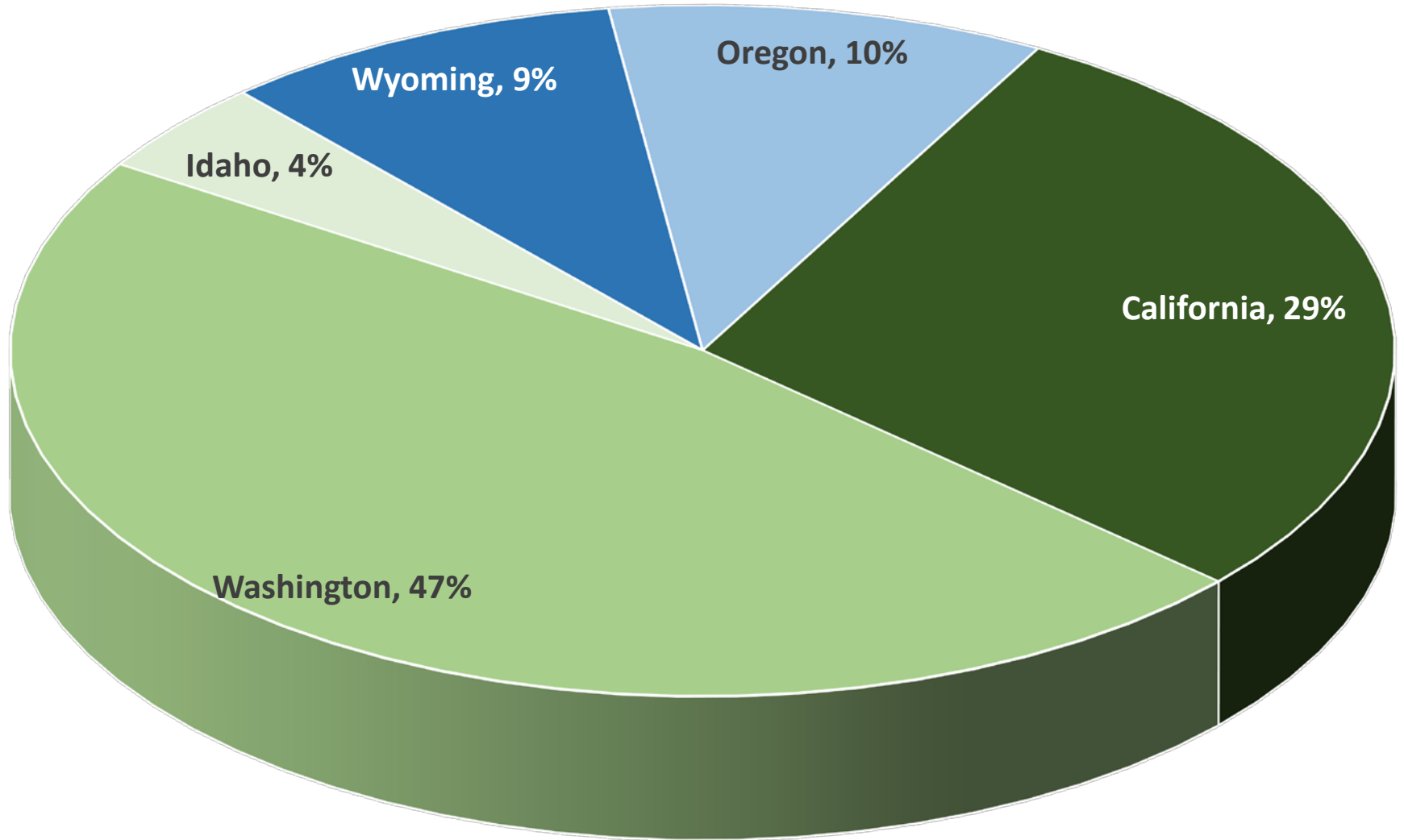
MCE Resource Locations (All, 2014)

Unspecified, 34%

California, 16%

Washington, 36%

Idaho, 2%

Wyoming, 5%

Oregon, 6%
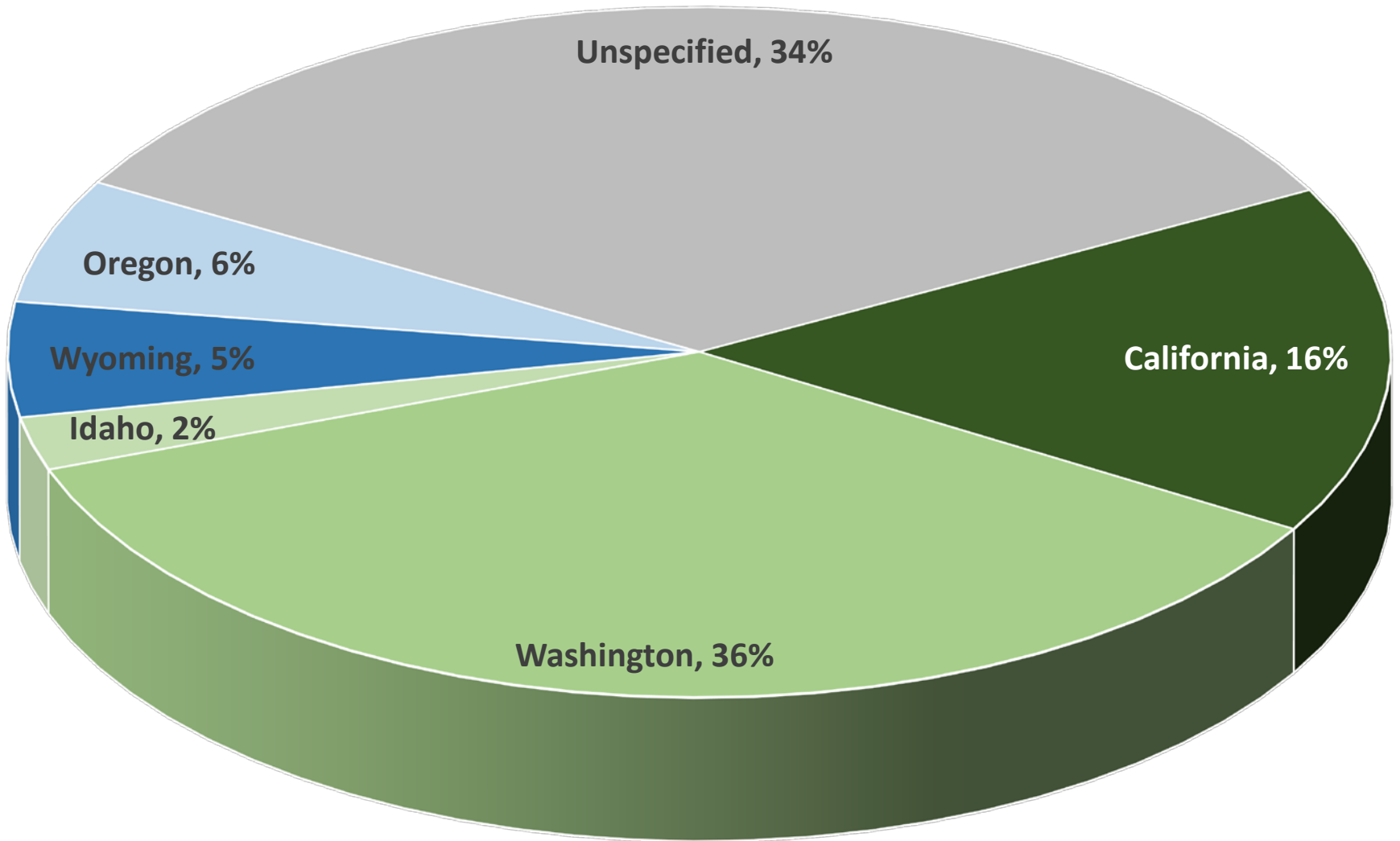
MCE Resource Locations (All, 2015)

Use of Unspecified Sources decreased by ≈30%

Use of California resources increased by ≈127%

- Unspecified, 24%
- Oregon, 3%
- Colorado, 3%
- Wyoming, 4%
- Idaho, 9%
- Washington, 20%
- California, 37%

MCE Resource Locations (RE Only, 2014)

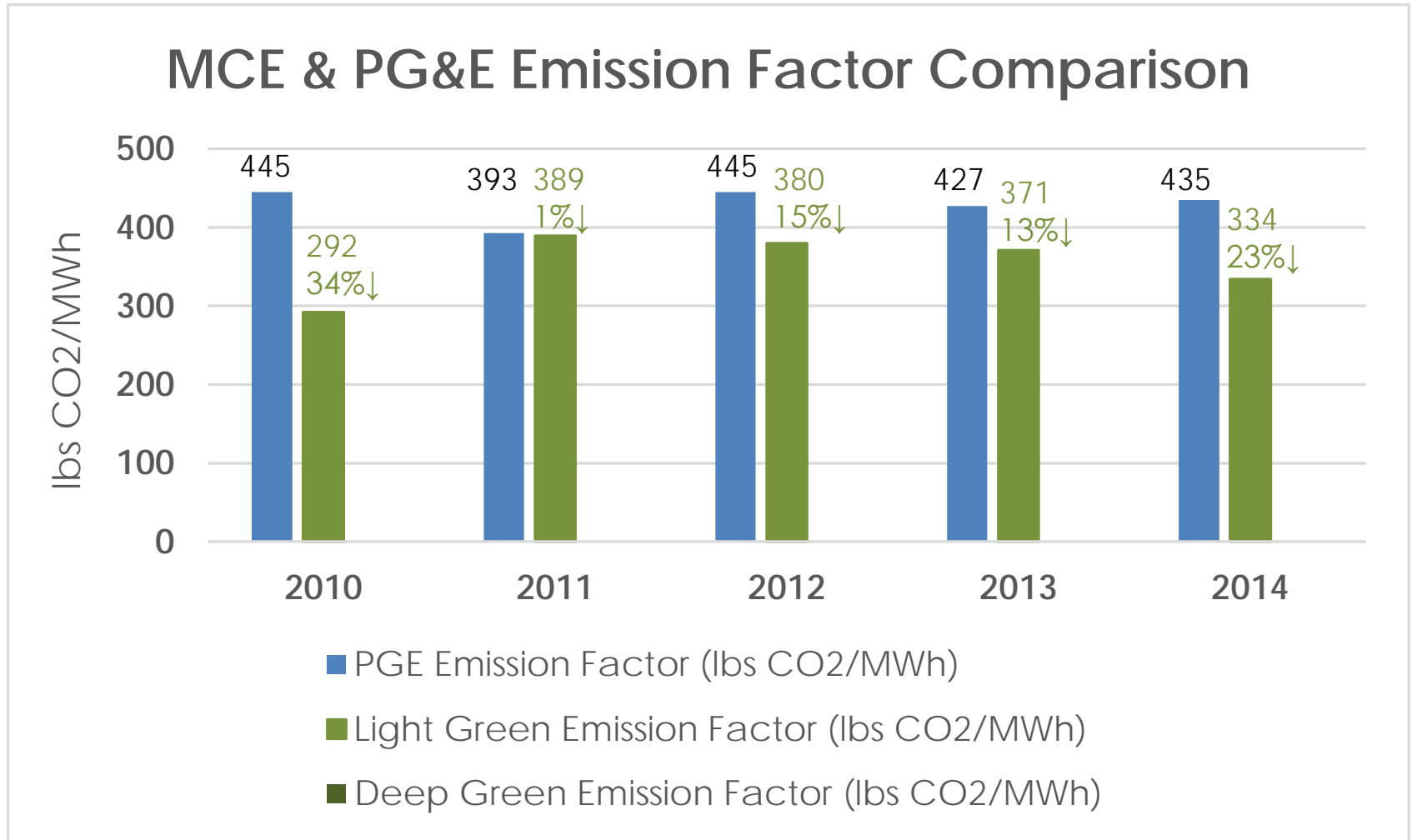Oregon, 10%

Wyoming, 9%

Idaho, 4%

California, 29%

Washington, 47%

MCE Resource Locations (RE Only, 2015)

Use of Washington resources decreased by ≈64%

Use of California resources increased by ≈62%

Colorado, 6%

Oregon, 6%

Wyoming, 7%

Idaho, 18%

California, 46%

Washington, 17%
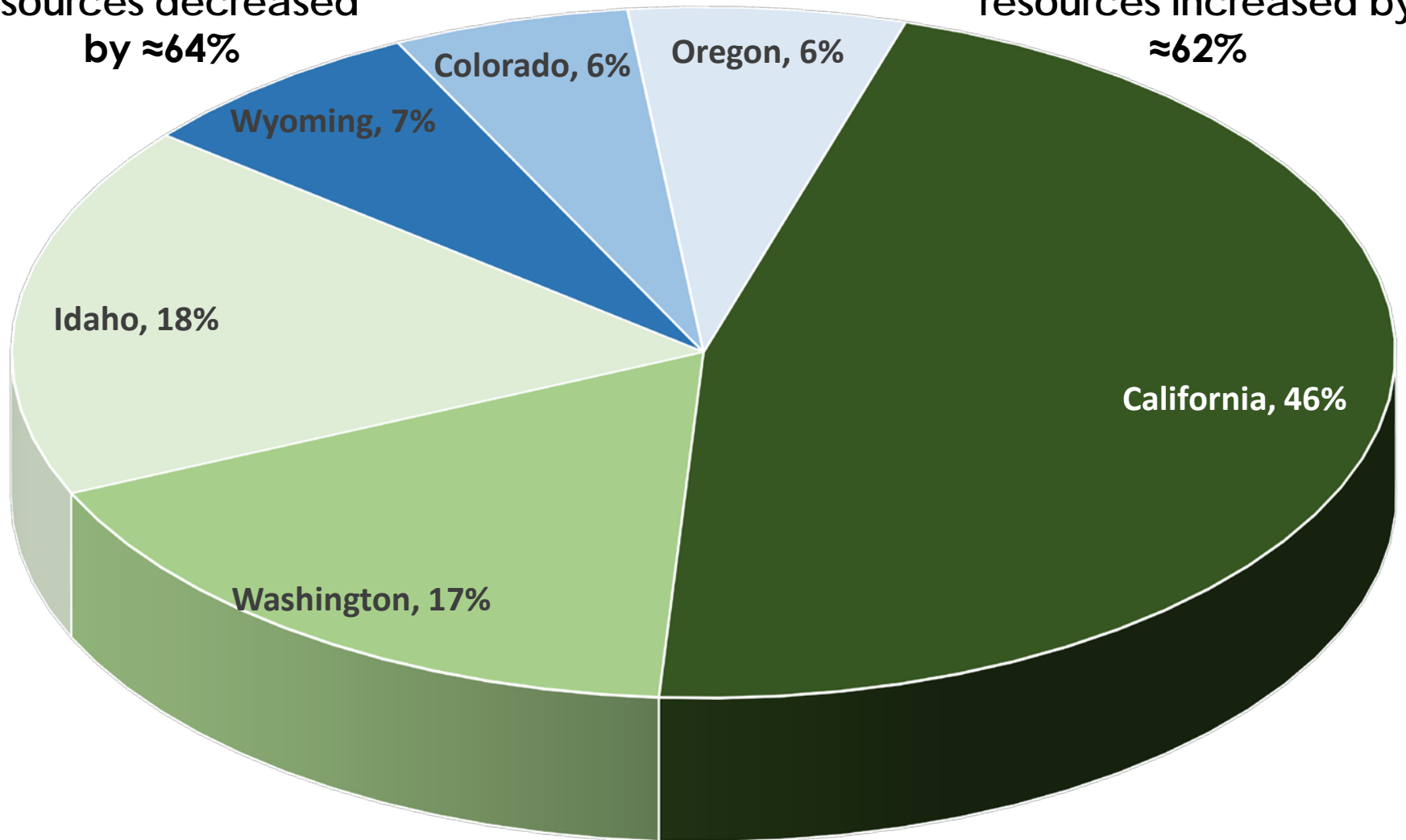
MCE & PG&E Emissions Factor Comparison

MCE & PG&E Emission Factor Comparison

eMotorWerks
SMART [GRID] EV CHARGING

Executive Summary

Our Energy Services Platform will Control >2 GW of Virtual Power Plant capacity in 2020 - built from aggregated charging load of 250,000+ Electric Vehicles

Market Challenge

There are **tens of billions of dollars of inefficiencies** in the US electric grid today. Supply / demand imbalances, excessive consumption / generation ramp rates, decentralized generation, and spiky load profiles drive costs for utilities, grid operators, and consumers, while creating serious risks to reliability and stability of the national electric grid. Traditional approaches are no longer adequate. While stationary energy storage is considered to be a critical part of the answer but is costly to deploy and operate, it is not yet viable without government incentives.

Solution

eMotorWerks has developed a **novel approach** to address these challenges **using a rapidly growing grid storage type - Electric Vehicles**. By matching the time and rate of EV charging to grid conditions, its **cloud-based JuiceNet™ platform generates recurring revenues** from an array of energy services that balance grid supply/demand, reduce energy costs, optimally dispatch renewables, and defer costly upgrades. It dynamically matches users' historical charging patterns, real-time input, and grid signals to generate **nearly $500 per year for every managed EV** from energy markets, utilities, and end customers.

In today's burgeoning market, EVs already comprise the largest grid-connected battery storage, with total capacity of over 10 GWH in the US. As EV markets grow 5-10x in the next 5 years, JuiceNet will become a dominant smart charging provider to the EV industry, and the dominant grid balancing agent to the energy industry.

Market Approach
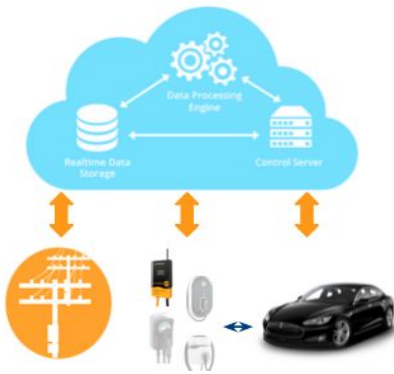
1. Smart Charging Stations (EVSE's): **JuiceBox**™ is Amazon's #1 best-selling residential EVSE with best-in-class features, natively connected to JuiceNet. Shipped nearly 10K units @50-60% gross margin. **50+ MW of load.** Other manufacturers use our embedded Internet-of-Load component to convert their EVSEs into JuiceNet smart-grid devices - access to another 50K+ EVs (250+ MW peak load).

2. Smart Charging Adapter. Universal JuicePlug™ adapter plugs into any EVSE and gives full control over energy flow. ***Access to the entire installed base of EVs*** → 500K in the US today (2.5 GW peak load).

3. Cloud-to-Cloud EV control Auto OEMs link JuiceNet software dispatch ***outputs directly to the EVs*** via existing vehicle uplink. Discussions with 6 major OEMs. Access to 5+ GW of peak load by 2018.

Overall Status

- Break-even on $2M on 2015 revenue; ~$5.0M current 2016 run rate including SW, Grid Revenues
- Contracts with global Auto-OEM, all 3 major California utilities across 4 energy programs, 3 independent power providers; direct relationship with CAISO, PJM, ISO-NE, Hawaii grid authorities
- Partnerships with Auto-OEMs, EVSE Companies, renewable generators, and grid operation software providers to scale revenue and operations → *GE, ClipperCreek*, #1 resi/workplace EVSE co.; *OSIsoft*, leading data platform for power industry
- **CEO**: Valery Miftakhov: Top Russian physicist; PhD Physics, Princeton; McKinsey, SLAC, Google
- **Team:** ex-ChargePoint, Strategen, Tioga, SGI, Sun, HNY, ADSK, MSFT; Stanford, MIT, Berkeley