



**Marin Clean Energy
Technical Committee Meeting
Monday, May 4, 2015
5:00 P.M.**

Kathrin Sears, Chair
County of Marin

Tom Butt, Vice Chair
City of Richmond

Bob McCaskill
City of Belvedere

Alan Schwartzman
City of Benicia

Greg Lyman
City of El Cerrito

Sloan C. Bailey
Town of Corte Madera

Barbara Coler
Town of Fairfax

Kevin Haroff
City of Larkspur

Garry Lion
City of Mill Valley

Brad Wagenknecht
County of Napa

Denise Athas
City of Novato

Carla Small
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

1125 Tamalpais Avenue
San Rafael, CA 94901

1 (888) 632-3674
mceCleanEnergy.org

**Barbara George Conference Room
1125 Tamalpais Avenue, San Rafael, CA 94901**

Agenda Page 1 of 1

1. Board Announcements (Discussion)
2. Public Open Time (Discussion)
3. Report from Chief Executive Officer (Discussion)
4. Approval of 3.9.15 Meeting Minutes (Discussion/Action)
5. MCE Solar One Update and Stion PPA Amendment (Discussion)
6. MCE Office Solar and EV Charging (Discussion)
7. Power Tree Presentation (Discussion)
8. Members & Staff Matters (Discussion)
9. Adjourn



Agenda material can be inspected in the Marin County Sheriff's lobby, located at 3501 Civic Center Drive, San Rafael, CA 94903. 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.

**MARIN CLEAN ENERGY
TECHNICAL COMMITTEE MEETING
March 9, 2015
5:00 P.M.
SAN RAFAEL CORPORATE CENTER, BORO ROOM
750 LINDARO STREET, SAN RAFAEL, CA 94901**

Roll Call

Present:

Kate Sears, County of Marin, Chair
Kevin Haroff, Town of Larkspur
Carla Small, Town of Ross
Emmett O'Donnell, Town of Tiburon
Ford Greene, Town of San Anselmo
Ray Withy, City of Sausalito

Absent:

Staff: Dawn Weisz, Executive Officer
Greg Brehm, Director of Power Resources
Jeremy Waen, Regulatory Analyst
Kirby Dusel, Technical Consultant

Action taken:

Agenda Item #4 – Approval of Minutes from 2.9.15 Meeting (Discussion/Action)

M/s Small/O'Donnell (passed 5-0) approval of minutes from 2.9.15 meeting.

Kate Sears, Chair

ATTEST:

Dawn Weisz, Executive Officer



Integrated energy services
Solar – Vehicle – Grid

www.powertreeservices.com

Contact: Stacey Reineccius (415) 235-5094
ceo@electrictrees.com

PowerTree

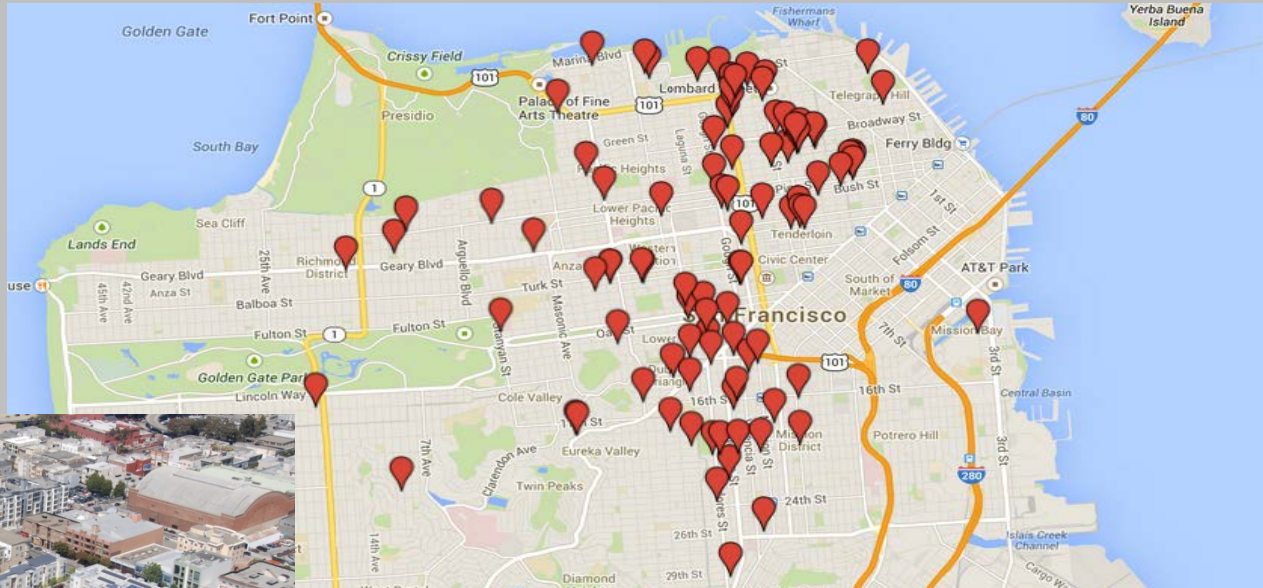
Press preview...



PowerTree San Francisco One Project

Integrated Solar PV, Energy Storage and EV Charging

~ 12% of SF population within 1 Block



PowerTree San Francisco One Project

Currently: 101 Buildings

- 5500 direct tenant units
- Est. 55,000+ units within 1 block radius

PowerTree San Francisco One Project

Currently: 101 Buildings

102 EVSE ports

(~55% market share in San Francisco)

404 KW AC Solar Generation

5.15 MWH Battery

12 MW Range

4.85 MW Discharge

4.24 MW Charge

Up to 3.6MW of controlled EV charging

~2.5% of San Francisco Baseload



tm

Google

PowerTree Concept

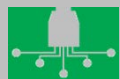
- Link key energy services together in mutually reinforcing service and revenue models



- Solar to generate onsite renewable electricity with rental income from tenants



- Electric Vehicle charging energy sale on subscription to plug-in capable vehicle owners



- Grid services and integration leveraging advanced energy storage technologies aggregated via communications

- Revenue is generated even when one or even two streams are unavailable for any reason reducing financing and business risk AND increasing benefits for customers.



Who's behind Powertree?

Key Funding to Date:



Panasonic



**OutBack
POWER™**



Danlin Solar



PRIVATE CAPITAL



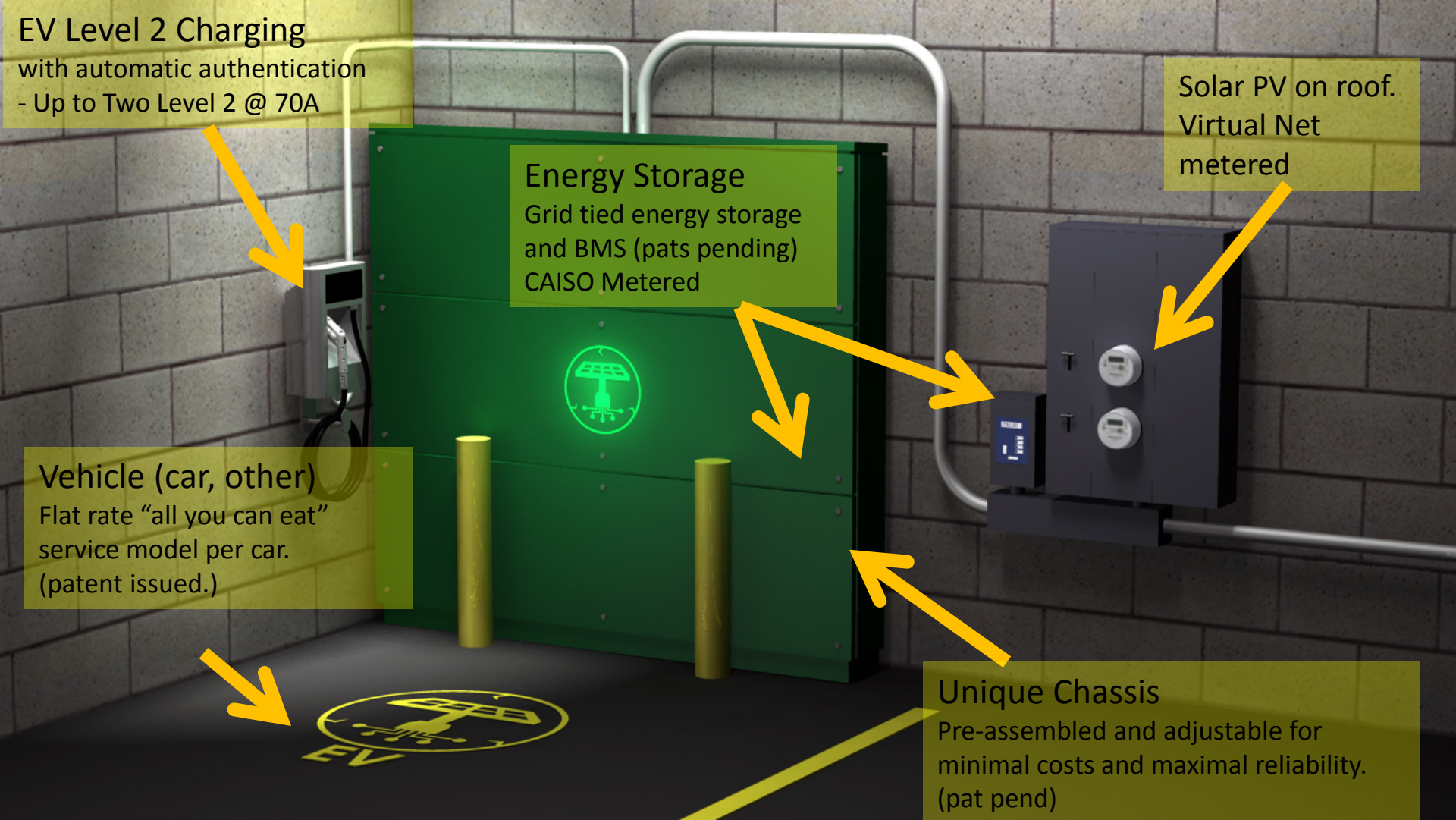
CA .GOV The California
ENERGY COMMISSION



California
Public Utilities
Commission



Elements of a PowerTree In Building



EV Level 2 Charging
with automatic authentication
- Up to Two Level 2 @ 70A

Energy Storage
Grid tied energy storage
and BMS (pats pending)
CAISO Metered

Solar PV on roof.
Virtual Net
metered

Vehicle (car, other)
Flat rate "all you can eat"
service model per car.
(patent issued.)

Unique Chassis
Pre-assembled and adjustable for
minimal costs and maximal reliability.
(pat pend)



Why Powertree?

Most people live in cities
and most of them live in
apartments and do not have a
fixed parking location.

This means the majority of the urban population who could benefit most from an electric vehicle have no reliable means of getting their vehicle charged.

Powertree enables charging access in a grid safe, economically viable and convenient fashion to EV drivers.



Importance of charging access for residents of Multi-family housing

- Sixty-five percent of prospective early EV adopters are **multifamily residents and renters**, but these groups face major challenges in accessing home charging.
- Access to **public charging options outside the home or building garage** will be important for the 25% of survey respondents who park on the street.

95% of current actual buyers are single family home owners. Shows barriers exist for Renters.

UCLA Luskin School of Public Affairs

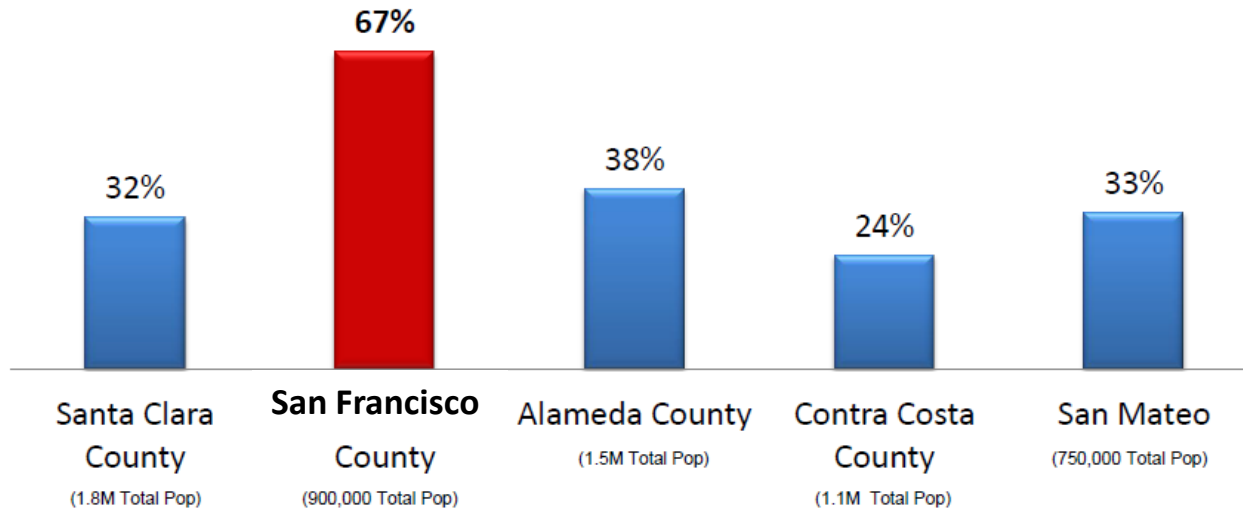
**Luskin
Center**
FOR INNOVATION



San Francisco Compared to Others

Population Living in Multifamily Buildings

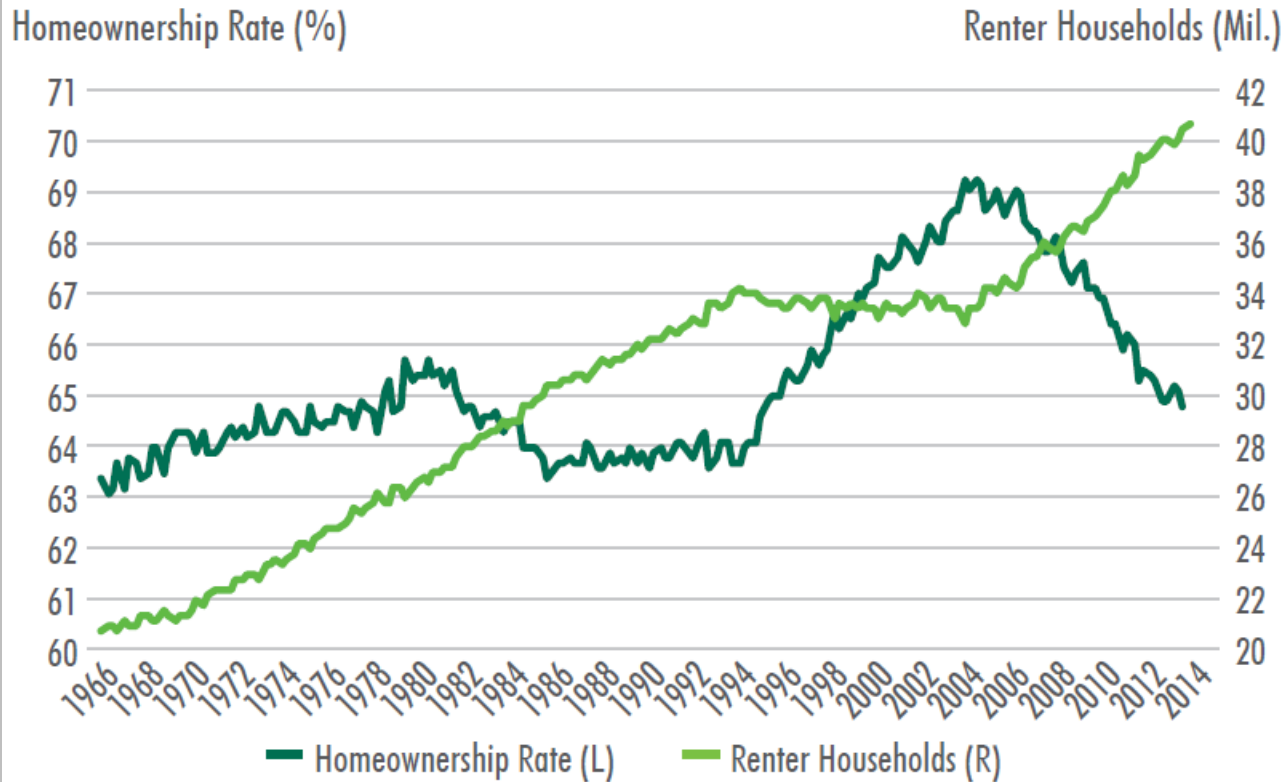
With average of 2.03 cars per household. Over 3 million people in SF bay area alone have no reliable access to EV Charging



Berkeley CA --- 51%
Los Angeles County – 50%



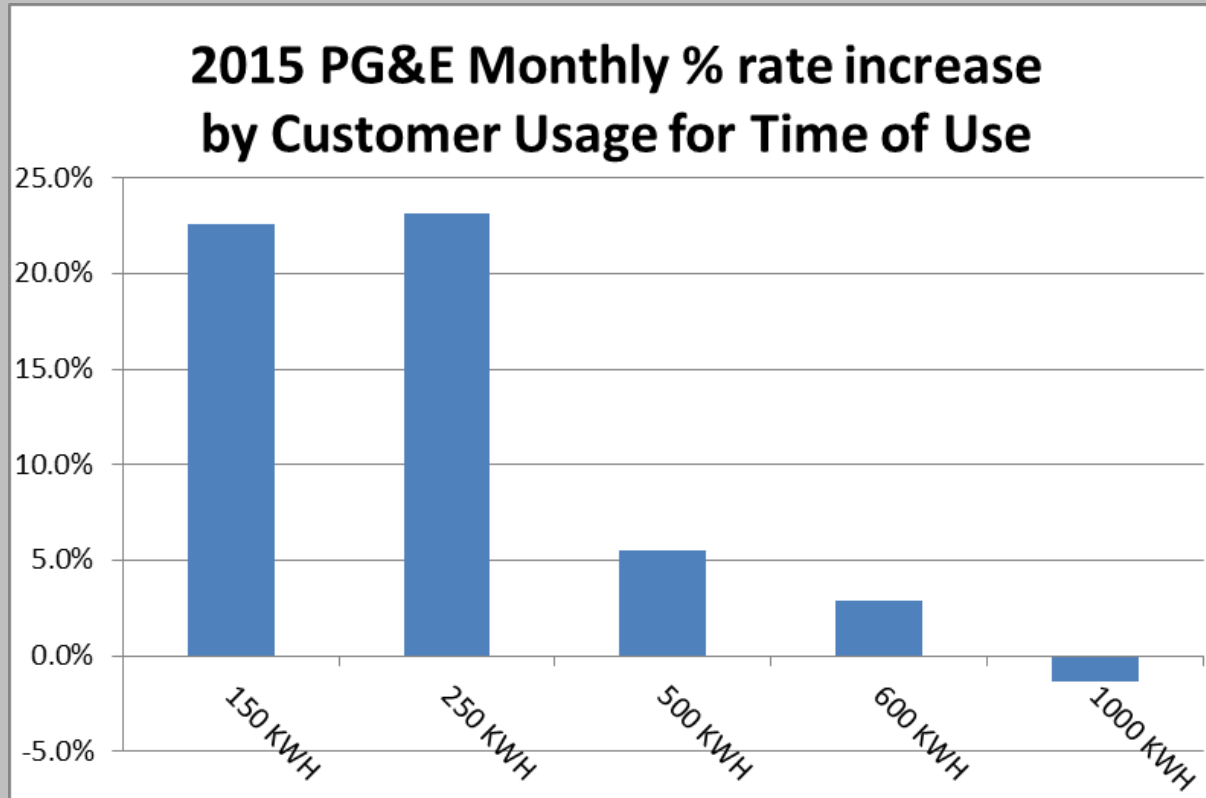
Figure 3: U.S. Homeownership Rate and Renter Households



Sources: Bureau of the Census and CBRE Econometric Advisors, Q2 2014.



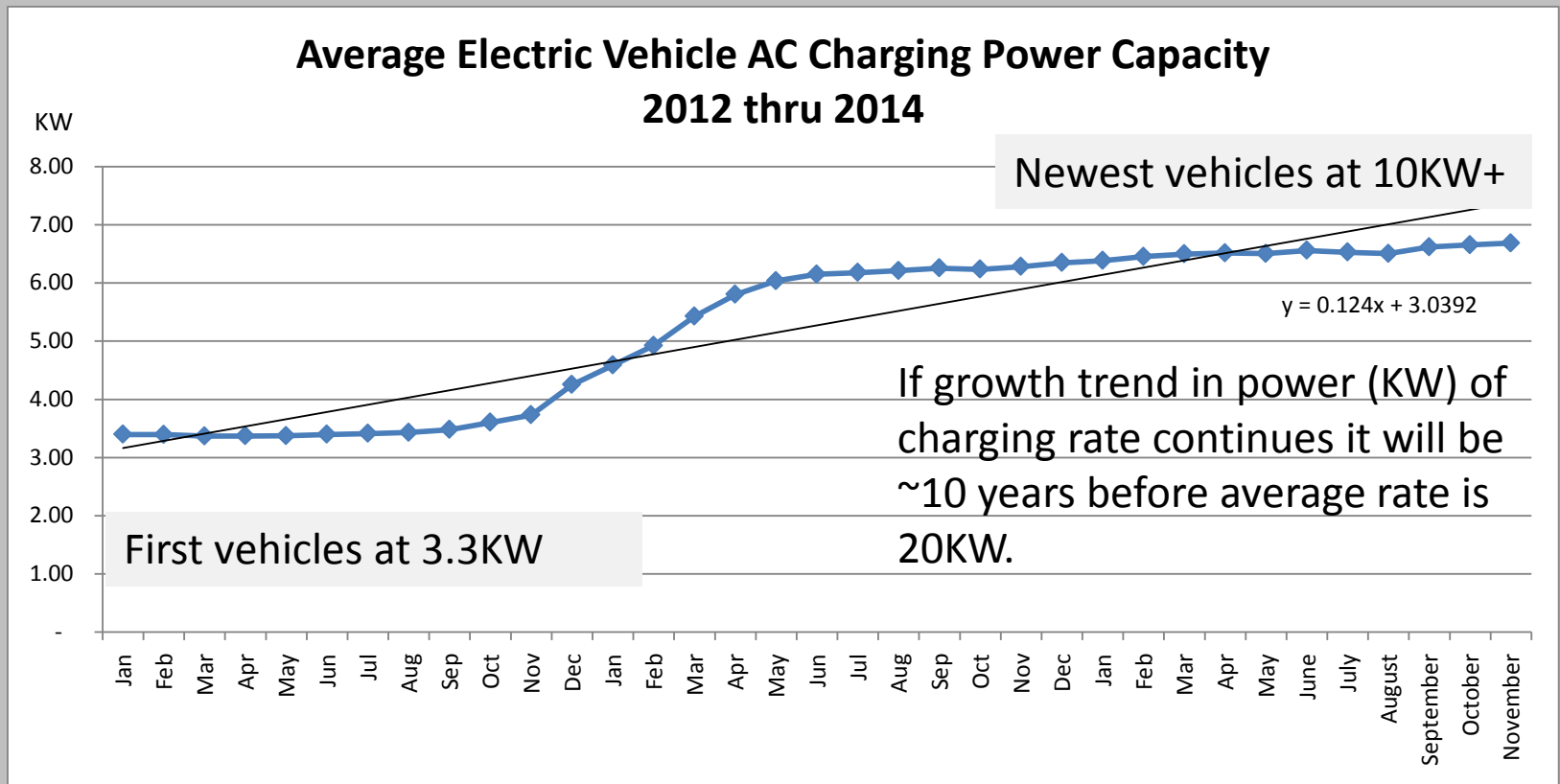
Increasing Rates for smaller users drive demand for tenant access to solar



Rate increases from PG&E effective Jan 1, 2015 increased lower usage customer cash costs by average of 23% vs Jan 1, 2014 rates.



EV Charging requirements are increasing as vehicles demand more AC Power



Why Powertree?

Displacing transportation fuel is the most valuable way to apply solar today

At \$3.00 per gallon and \$0.14 per kilowatt hour with today's average vehicle efficiency of 4 miles per KWH and 20 MPG we get

	<u>Electric</u>	<u>Gasoline</u>
Cost per Mile	\$0.035	\$0.15
Equiv. Cost /KWH	\$0.14	\$0.60

It's worth almost 4 times as much to power your car than to power your lights from your renewables.



CCA Applications for EV and Storage

- **EVs provide powerful value draw to CCA supply for drivers due to savings and green fuel**
- **On Site Solar can generate under CCA provided NEM tariff attracting tenants and satisfying local build needs**
- **Storage can provide enhanced reliability for both EV and Solar (critical loads)**
- **Storage under AB2514 needs can be met with combination and also Wholesale service**
- **Powertree systems enable EVs in Apartment buildings, addresses need for renters to have charging**
- **Note: SGIP based systems have to supply credit for storage to the SGIP providing utility**

