

# OPEN ENERGY EFFICIENCY

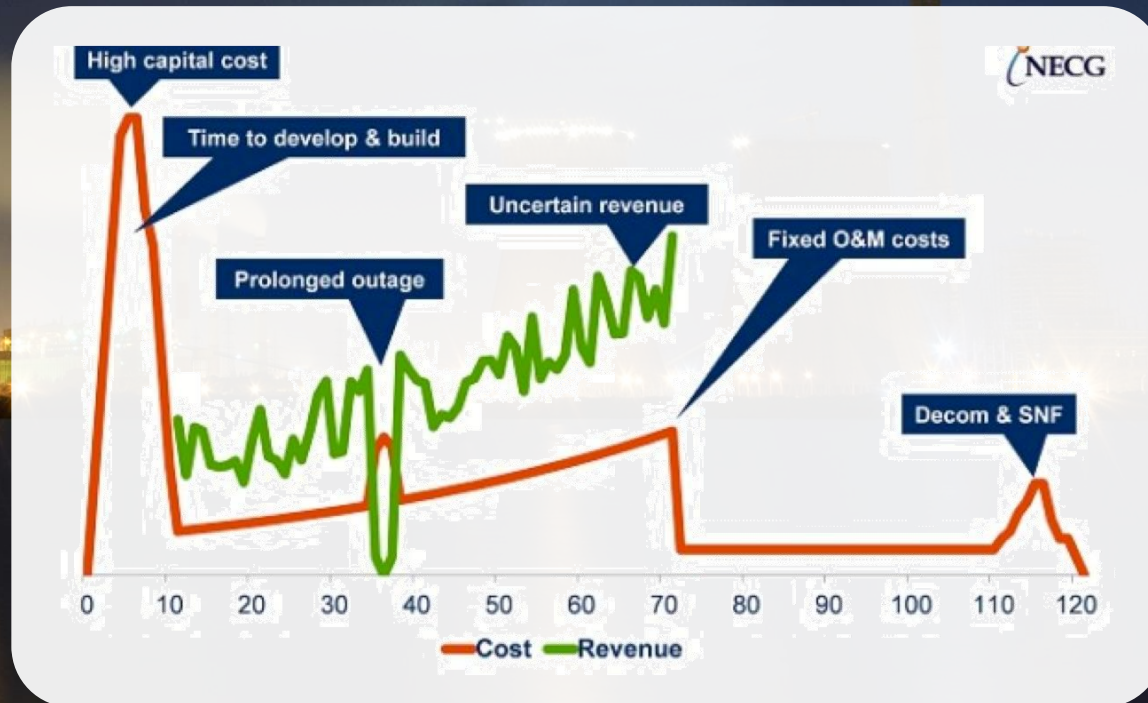
Enabling Markets for Efficiency as Capacity



ACEEE Finance Forum  
2016



**Project Finance:** The long-term financing of projects based upon projected cash flows rather than the balance sheets of its sponsors.

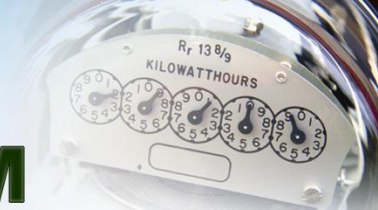


Cost Revenue  
0 10 20 30 40 50 60 70 80 90 100 110 120



# UTILITY REBATE PROGRAM

UP TO 70% INSTANT SAVINGS



# STORM RELIEF



New York State Appliance and Equipment

# REBATES

NYSApplianceRebates.com

## Taking Full Advantage

## 2013 Rebates & Incentives

mass save partner



NEVER A FEE NEVER EXPIRES  
 WE WILL NOT BE UNDERSOLD. GUARANTEED!  
 The Bridal & Gift Registry  
**20% OFF**  
 Take 20% off any single item.\*  
 Present this certificate.  
 Valid for in-store use only.



## CLOTHES WASHER REBATES

Qualified washers must be purchased and installed between January 1 and December 31, 2014.

Your local water agency and PG&E are offering

Your local water agency is offering

**\$200 -OR- \$50**

CASH BACK ON AN ENERGY STAR MOST EFFICIENT 2014 MODEL

CASH BACK ON MODEL THAT MEETS CEE TIER 3

## Gas + Utility Company Rebates



## Get Rebates of up to \$6,500\* for Home Upgrade

Find a Home Upgrade Professional to make your home more energy efficient.

Search Now



Home Upgrade  
 Energy Upgrade California®

## WINTER IS COMING!

UP TO \$750 IN REBATES FROM DUKE, REMC & VECTREN



SMITH BROTHERS  
 PRECISION AIR SYSTEMS, LLC  
 HEATING & AIR CONDITIONING  
 Columbus, Indiana

# Energy Efficiency Programs

## Efficiency Programs

Models, deemed savings,  
and consultant studies

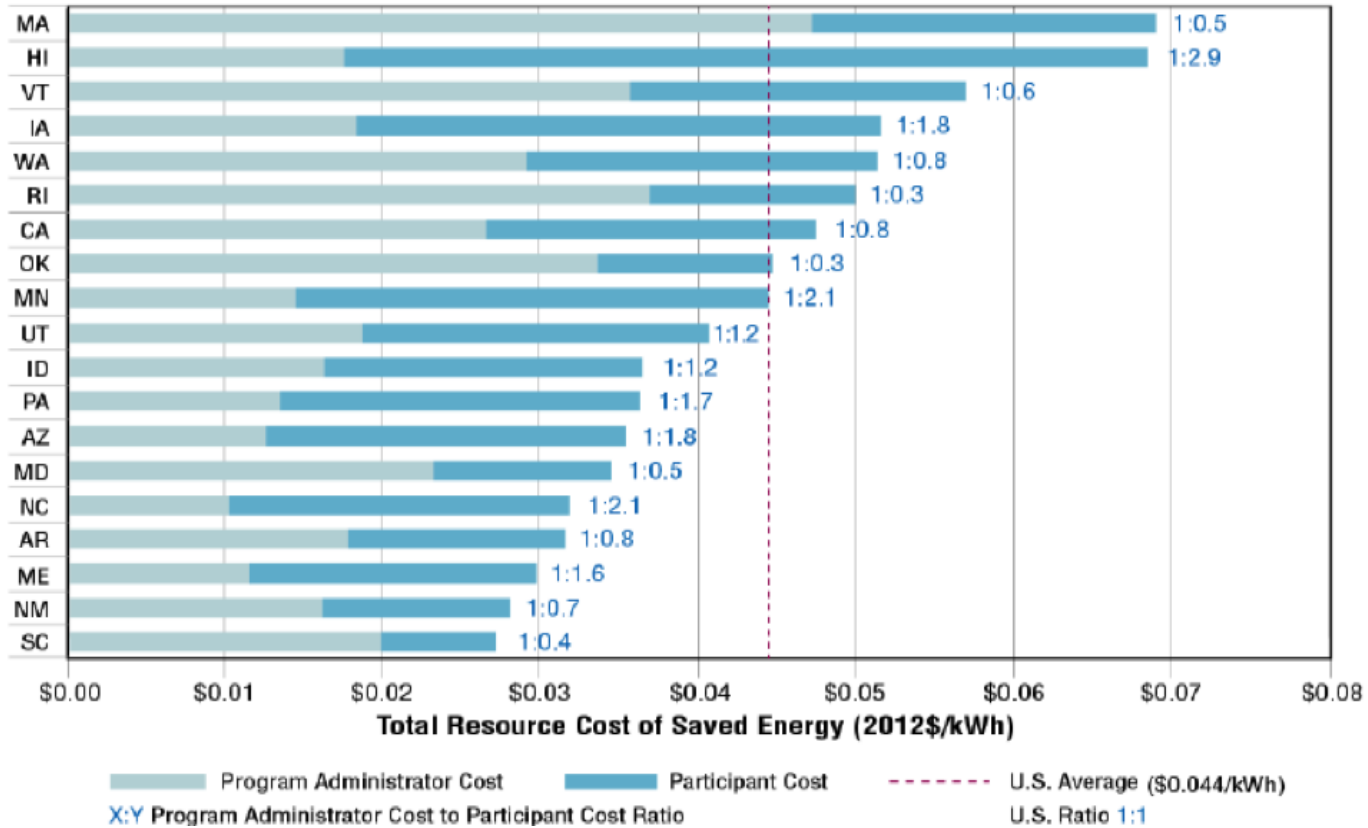


Paid on prediction  
in advance



Regulation and program rules

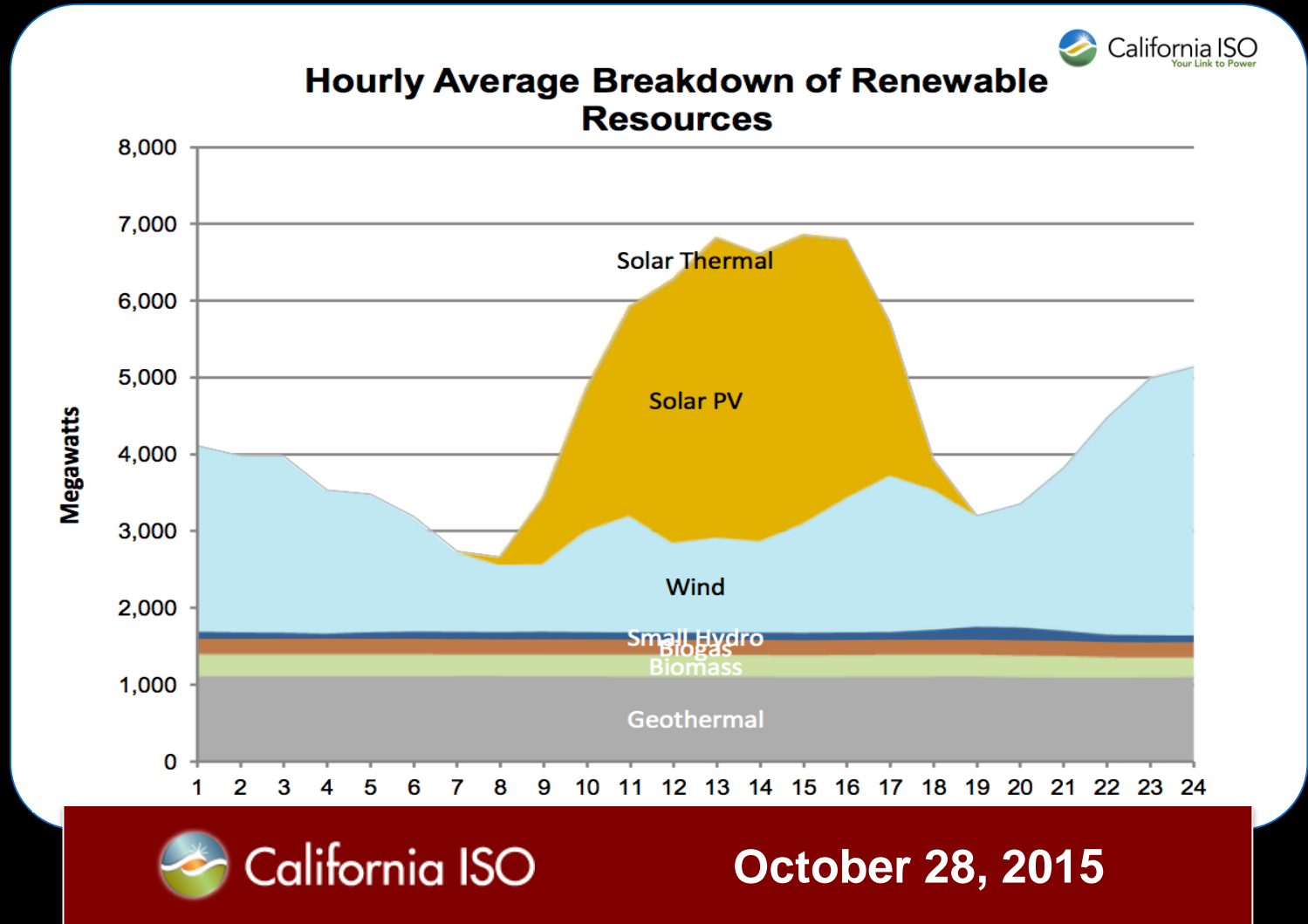
# Ripe for Disruption



# Efficiency Must Adapt to The Rules of Grid 2.0



# The Grid is Changing

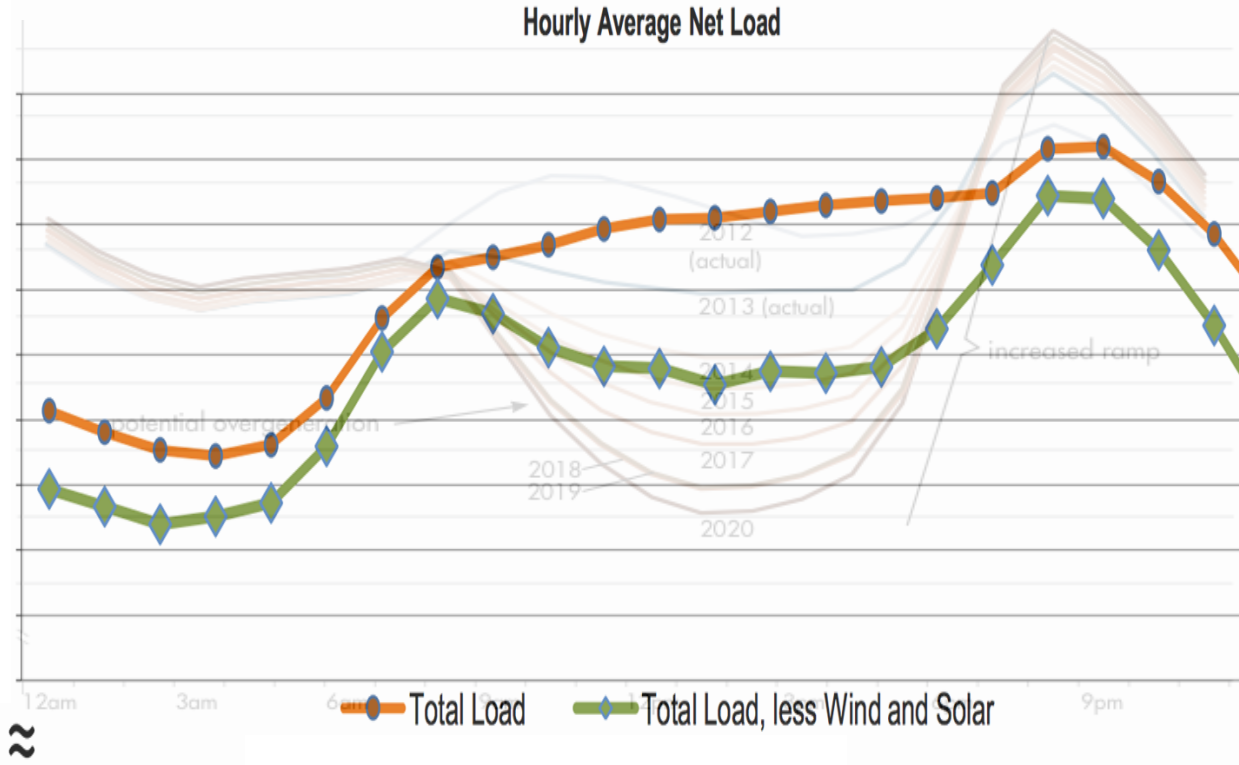


California ISO

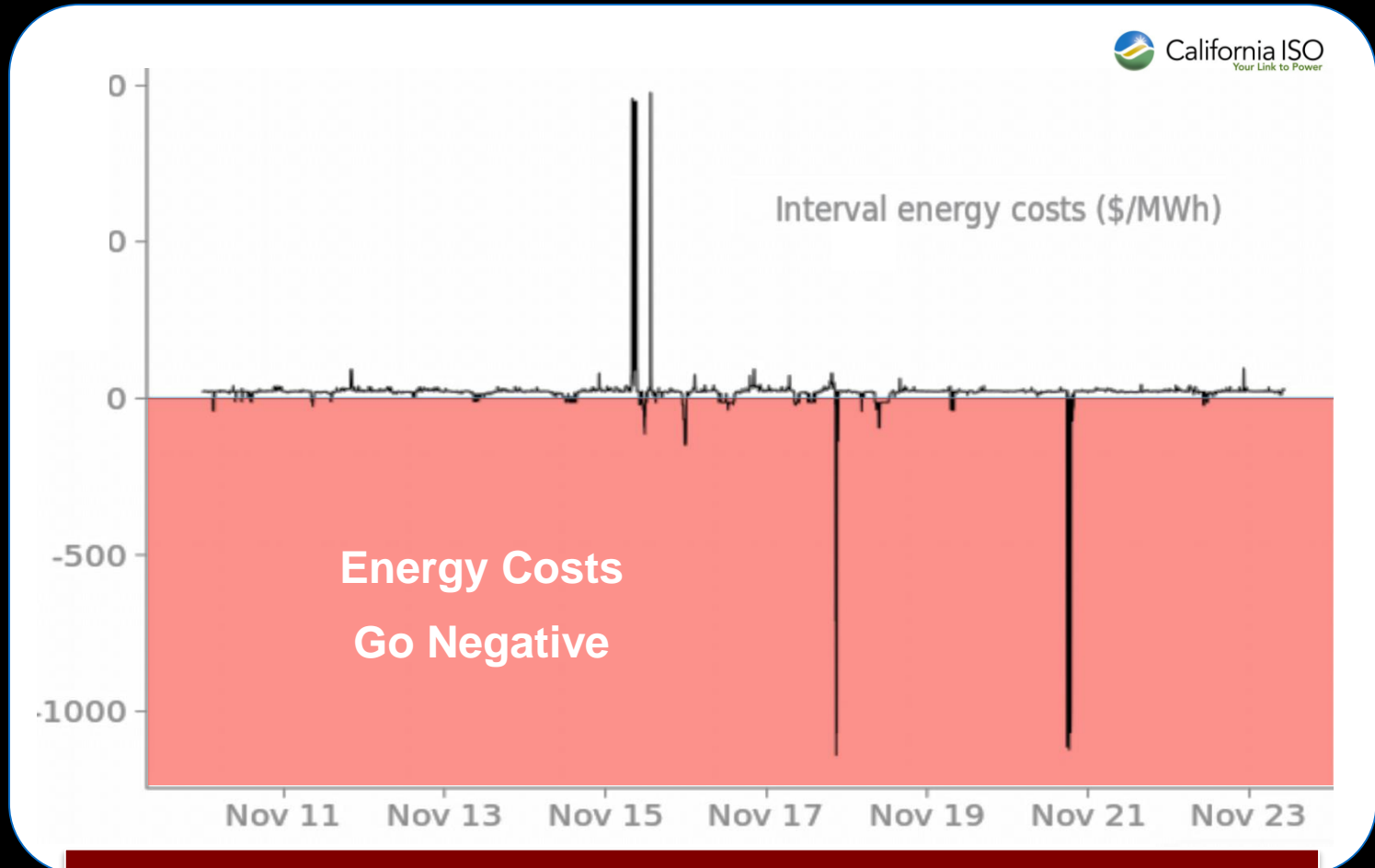
October 28, 2015



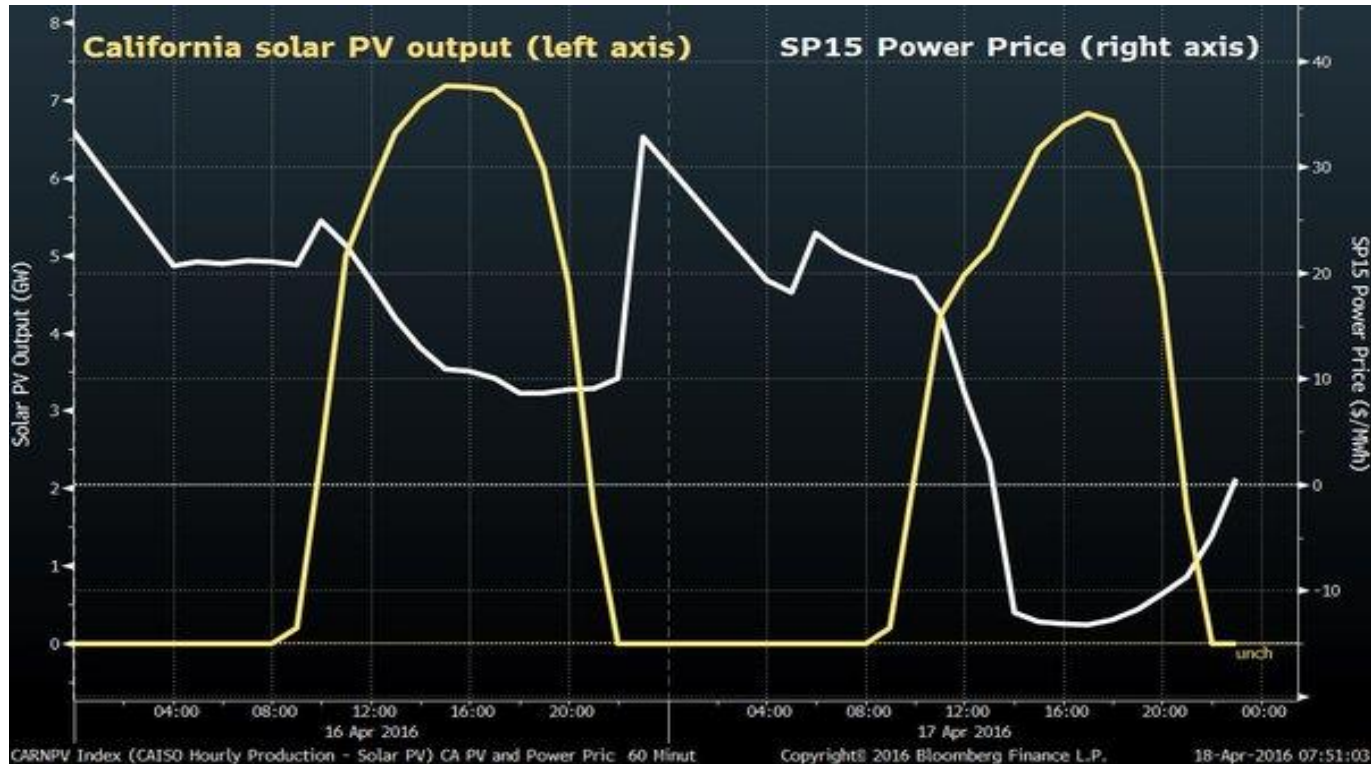
# Grid 2.0 Is Real and Right Now



# Not All Energy is Created Equal



# Not All Energy is Created Equal

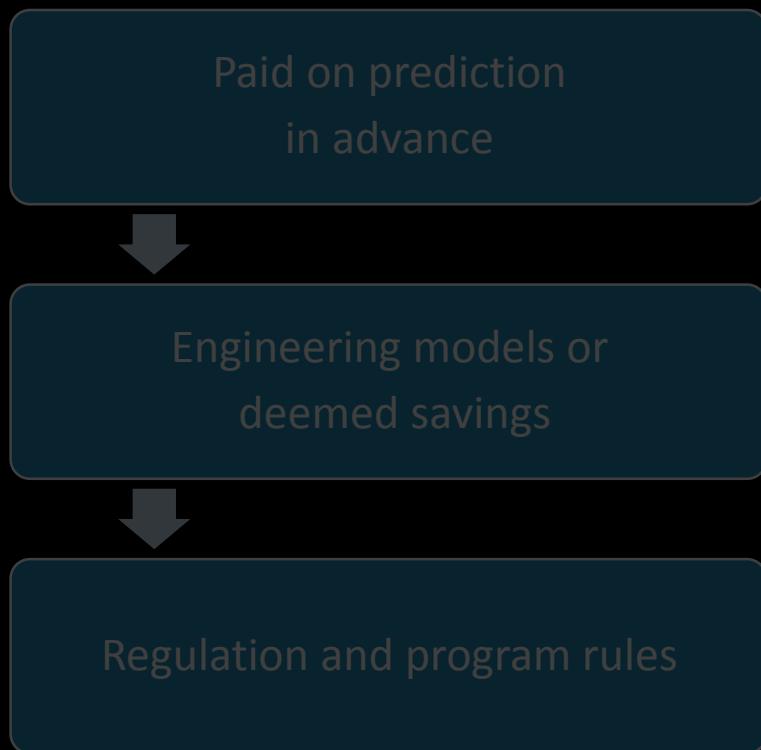


**Solar Production vs. CAISO Price - April 17<sup>th</sup> 2016**

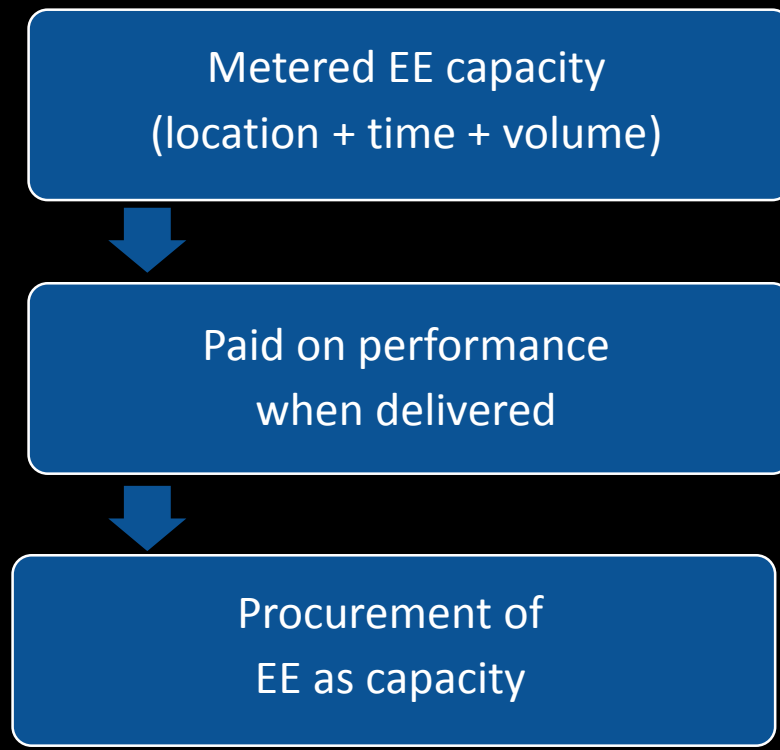
# **Demand Capacity as a Distributed Energy Resource**

# Solution: Efficiency Procurement

## Efficiency Programs

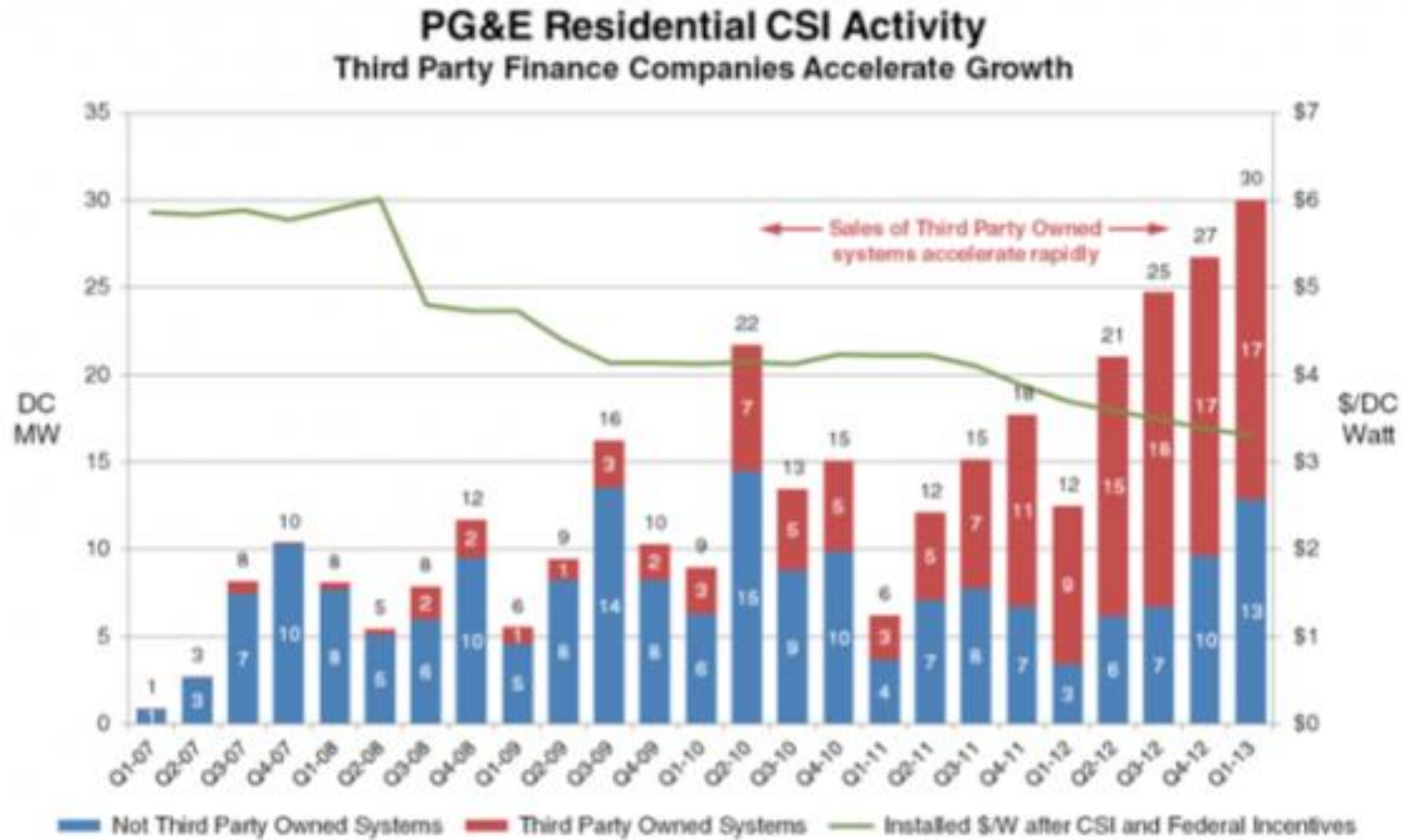


## Pay-for-Performance





# Can Solar Models Work For EE?



# Energy Efficiency is a Massive Market



**HVAC**  
**\$18 B**



**Roofs**  
**\$12.5 B**



**Windows & Doors**  
**\$9 B**



**Insulation / Shell**  
**\$3+ B**

## Residential PACE Finance

51,148

Number of Homes

\$1,045

million

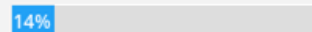
Energy efficiency



Renewable Energy



Mixed



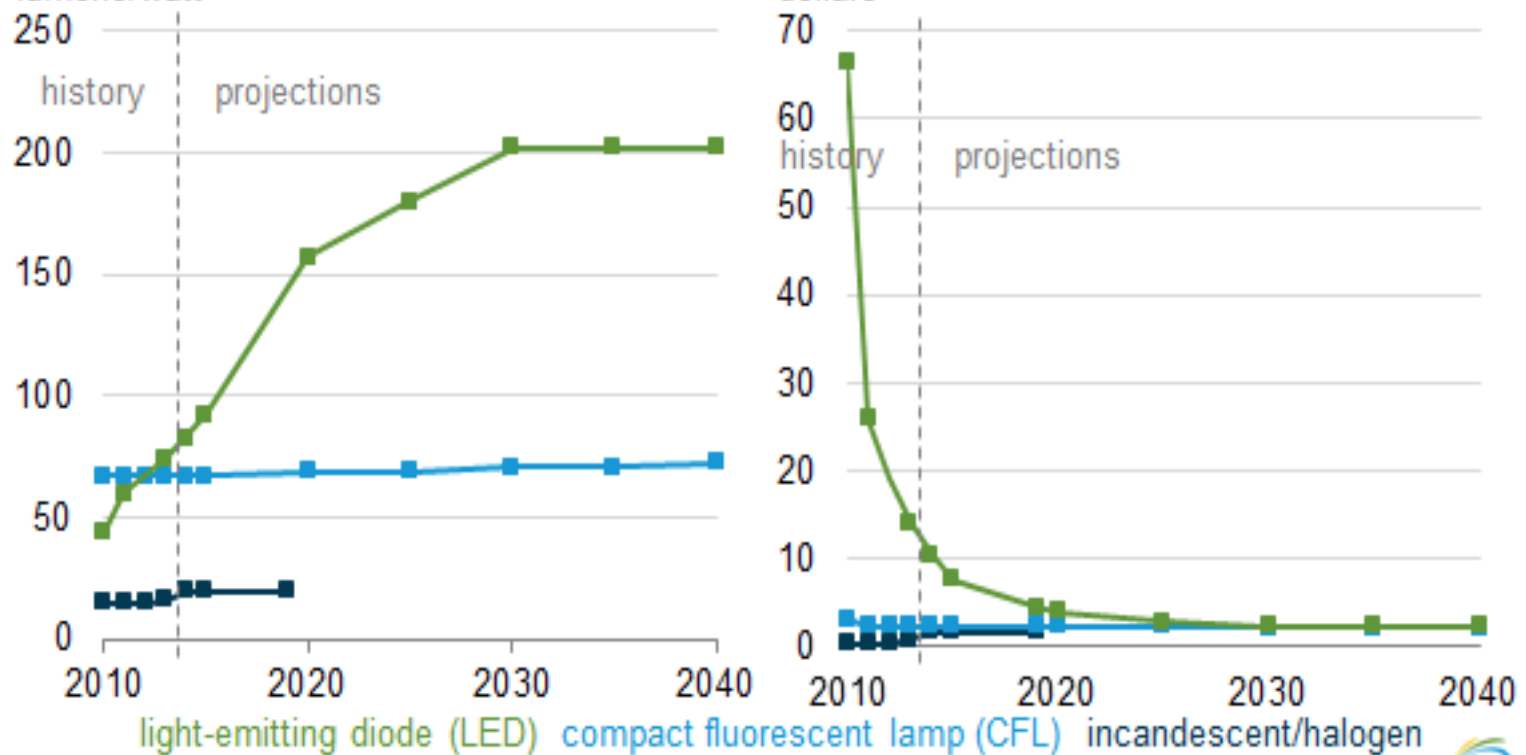
9,390

Jobs Created

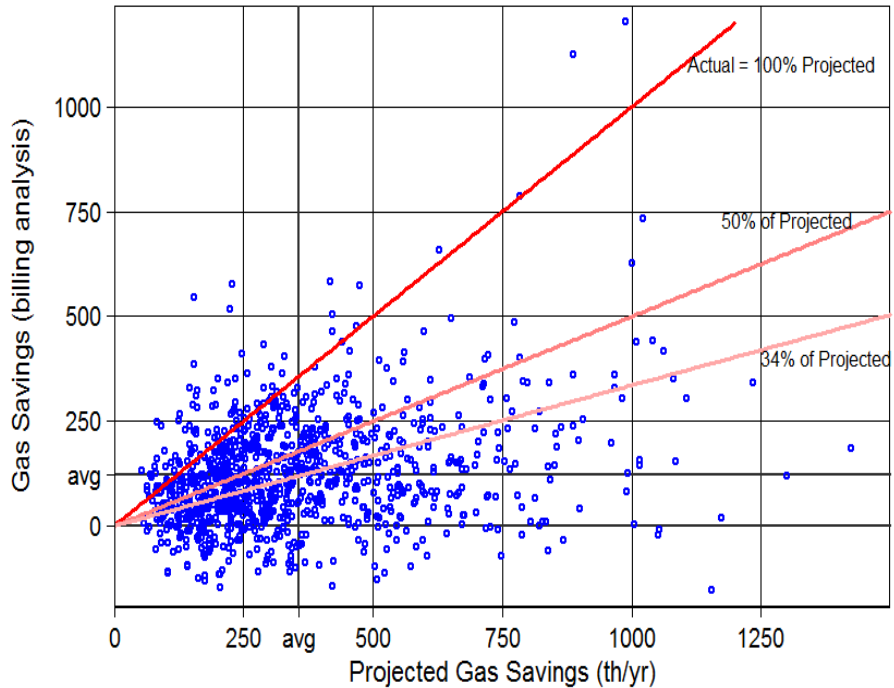
**\$500m**  
California  
Residential  
Efficiency  
Projects in  
2015

# Can Solar Models Work For EE?

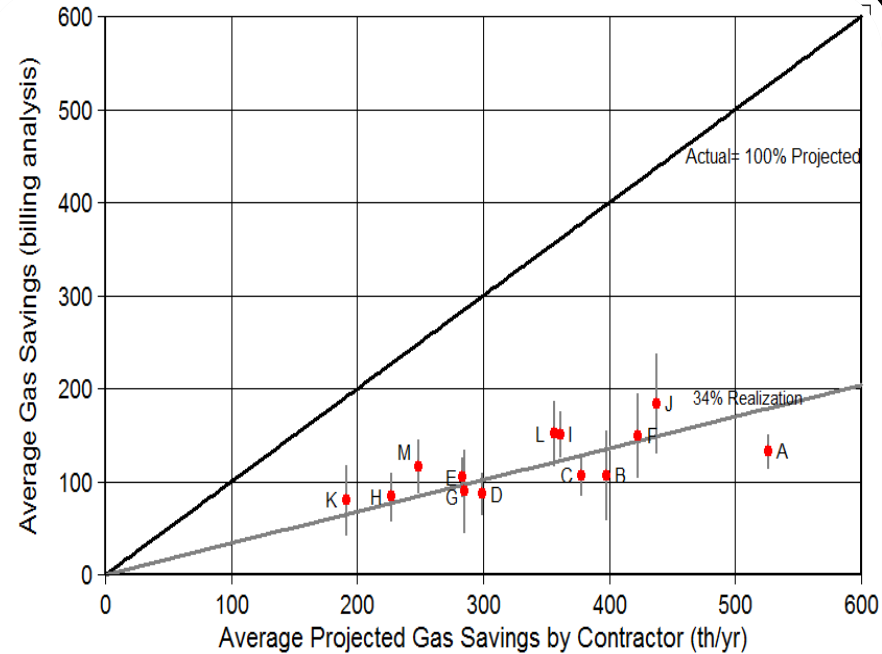
Average lighting efficacy (light output per unit of energy consumed) and cost per bulb



# Efficiency is a Reliable Resource



Uncertainty



Results by contractor, labeled A - M, for 13 contractors with more than 20 analyzed jobs each

Risk

# Commercial Pay-for-Performance

## Seattle City Light's P4P Program

Three Buildings

Three Years

Three Providers



111 Third Ave



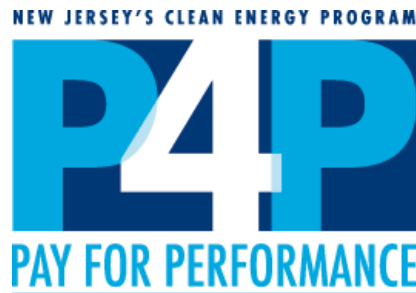
Lake Union  
Building



One Union Square



# Commercial Pay-for-Performance

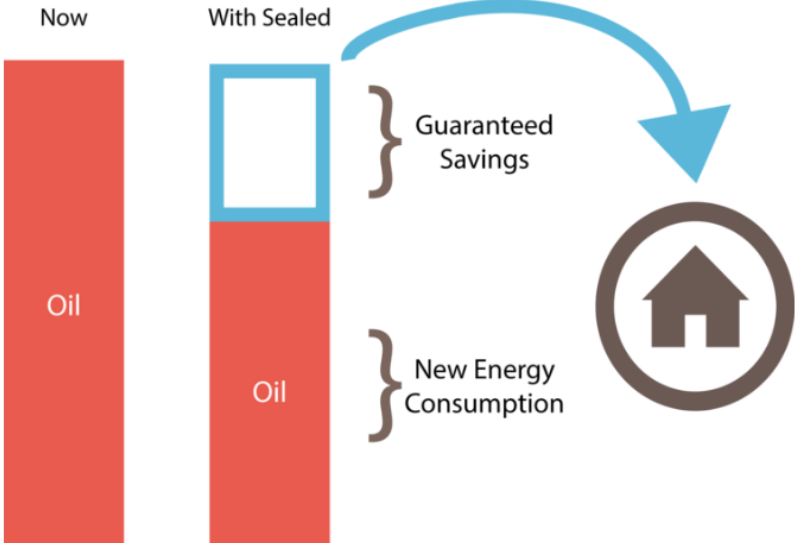


**Incentive #1 - Submittal of complete energy plan**

**Incentive #2 - Installation of recommended measures**

**Incentive #3 - Based on Post-Construction M&V**

# Sealed Home Residential PPA



# PG&E Residential Pay-for-Performance

## Goals

Take Res EE to scale  
by enticing more  
private capital

Achieve Data Driven  
M&V by measuring  
“at the meter”\*

Pay for measured  
savings performance

Develop a program  
that can successfully  
transition to grid-  
tied procurement



\* Weather-normalized



Matt Golden, CEO  
matt@efficiency.org

[openEMeter.org](http://openEMeter.org)