



Achieving Ambitious Energy Efficiency Targets: Emerging Opportunities for Existing Buildings

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Governor's Goals

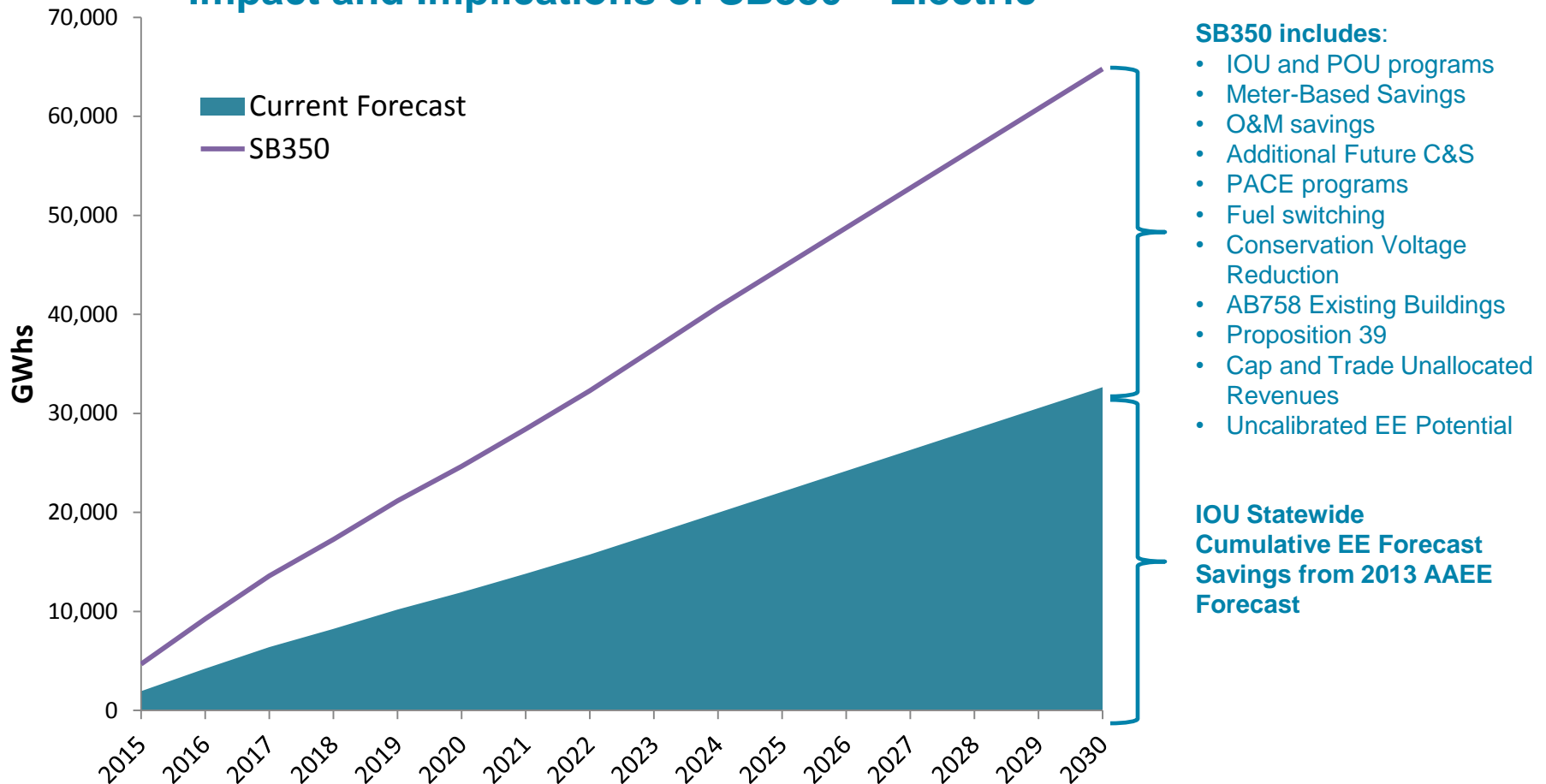
***“Double the efficiency of existing buildings
and make heating fuels cleaner.”***





How Can We Double EE?

Impact and Implications of SB350 – Electric

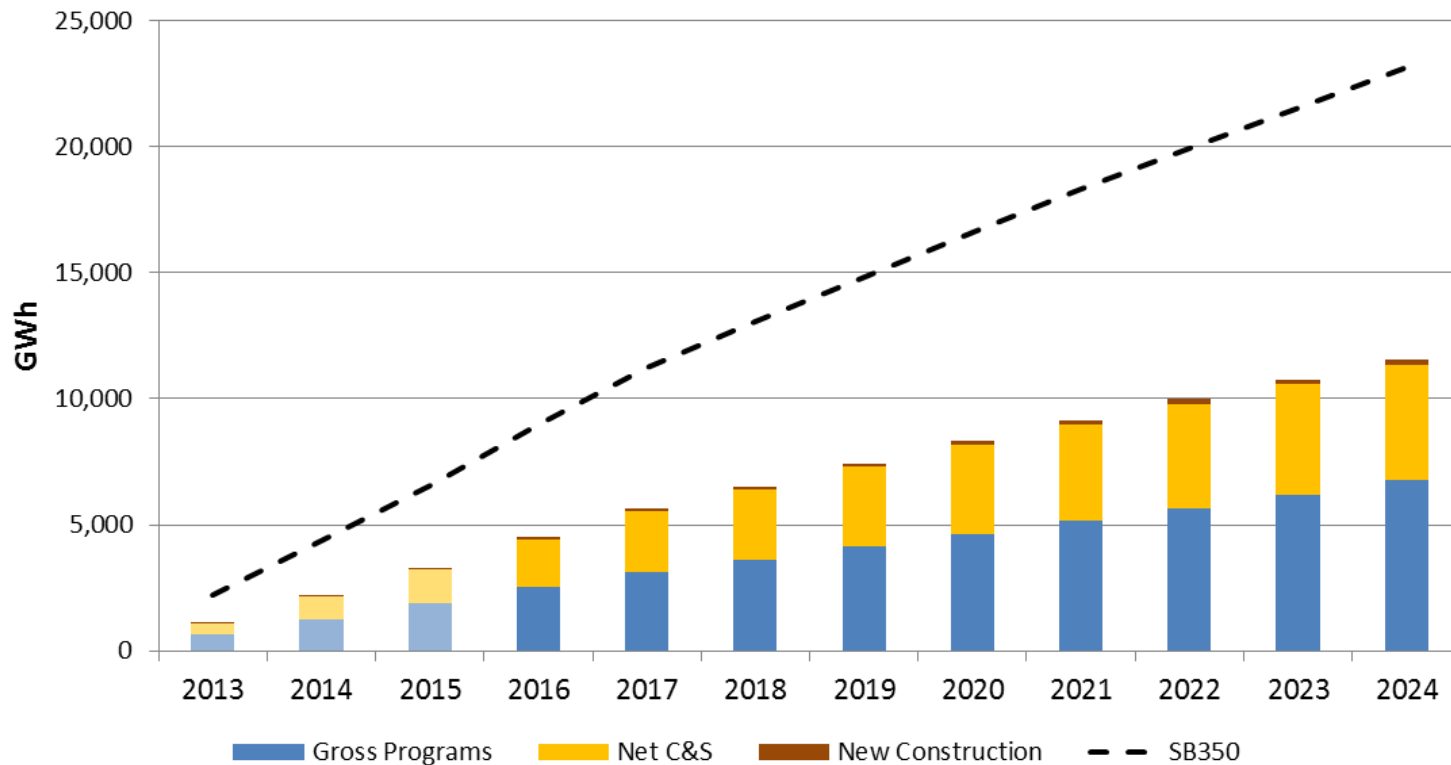


Notes and assumptions:

- SB350 requires a doubling of the CEC's Additional Achievable Energy Efficiency (AAEE) mid-case forecast by 2030, subject to what is cost-effective and feasible. SB350 also expands AAEE accounting for a number of efforts, as listed above, meaning IOUs goals may increase, but may not double.
- The above graph is statewide across all IOUs and is shown on a cumulative basis through 2030, which aligns with the requirements of AB350.
- The bill requires a doubling of the 2015 AAEE, which is forthcoming; the analysis above is based on the 2013 AAEE.
- AAEE is not identical to, but is based on the CPUC Potential Study.
- The AAEE forecast extends through 2024. The bill requires an average annual growth rate be applied to this period, but does not identify the rate or how to calculate it. This graph uses an average of the last available four years of savings 2021-2024.



Focus on Existing Buildings



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Can We Double EE When Program Potential is Declining?



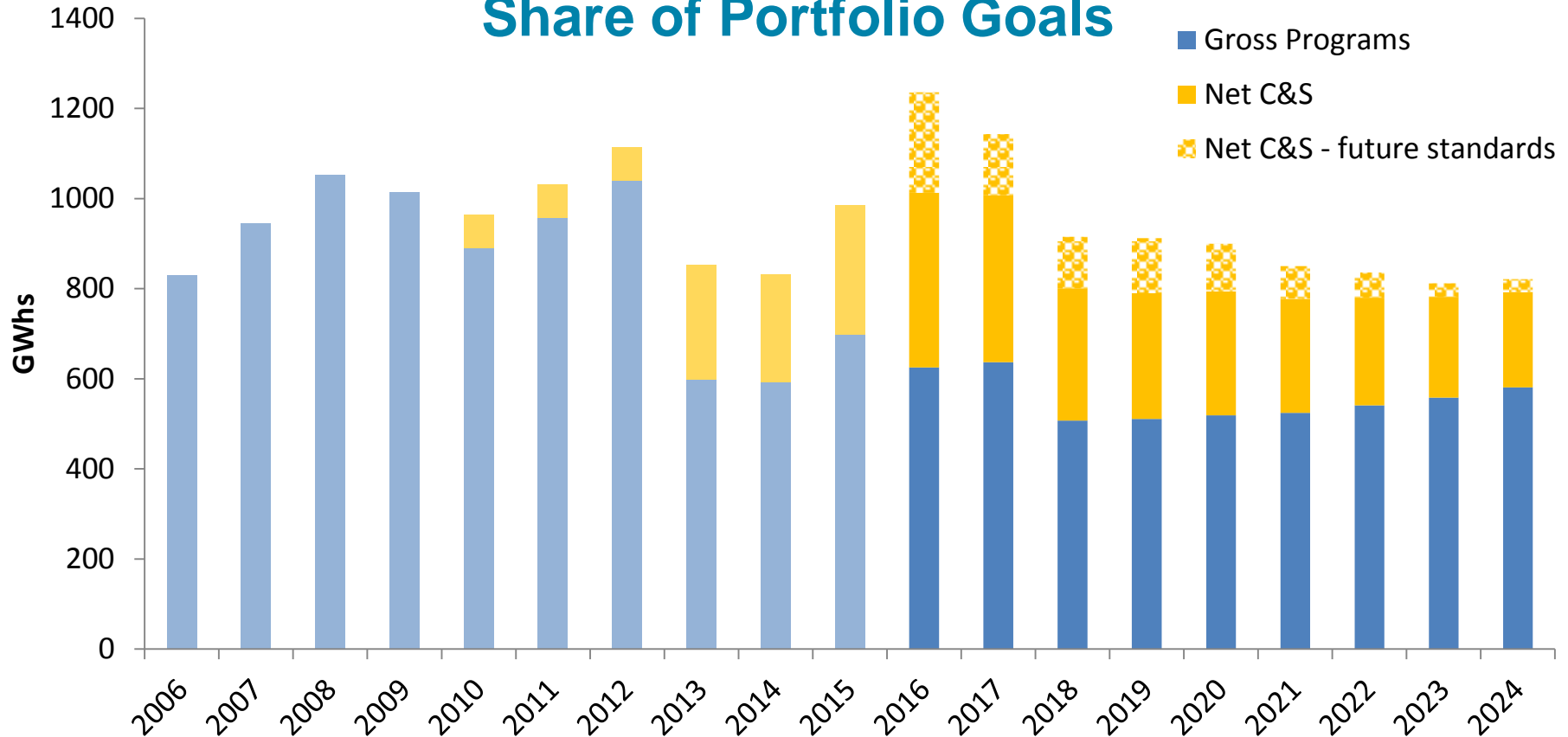
Notes and assumptions:

- Data from CPUC decision goals



Can We Double EE When Program Potential is Declining?

Programs v. Codes and Standards Share of Portfolio Goals



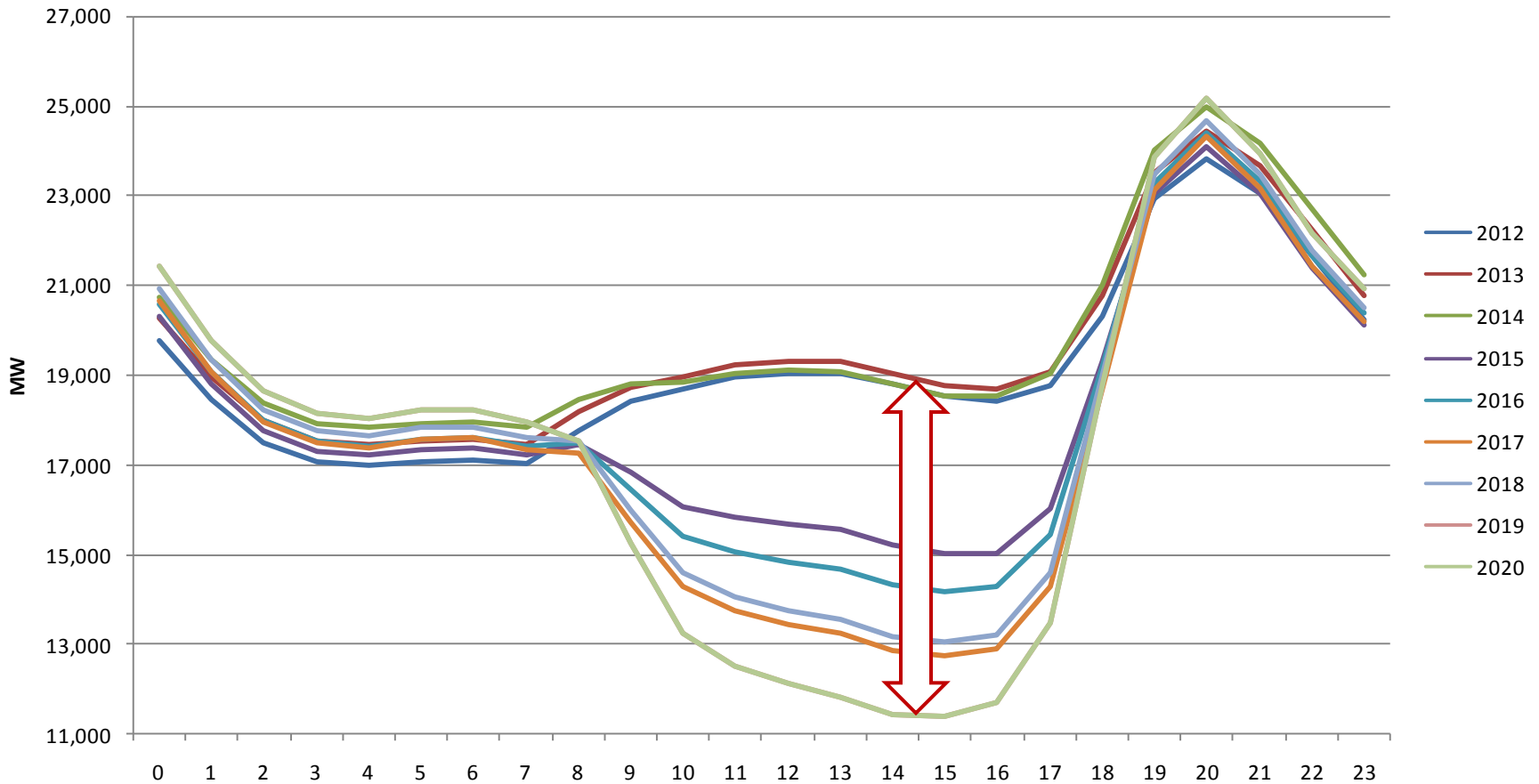
Notes and assumptions:

- Data from CPUC decision goals
- C&S goals for 2016+ are still under discussion
- C&S goals in 2010-12 were not specifically broken out in CPUC decisions. C&S savings is split out in the graph above for comparison purposes.



Changing Dispatch Curve

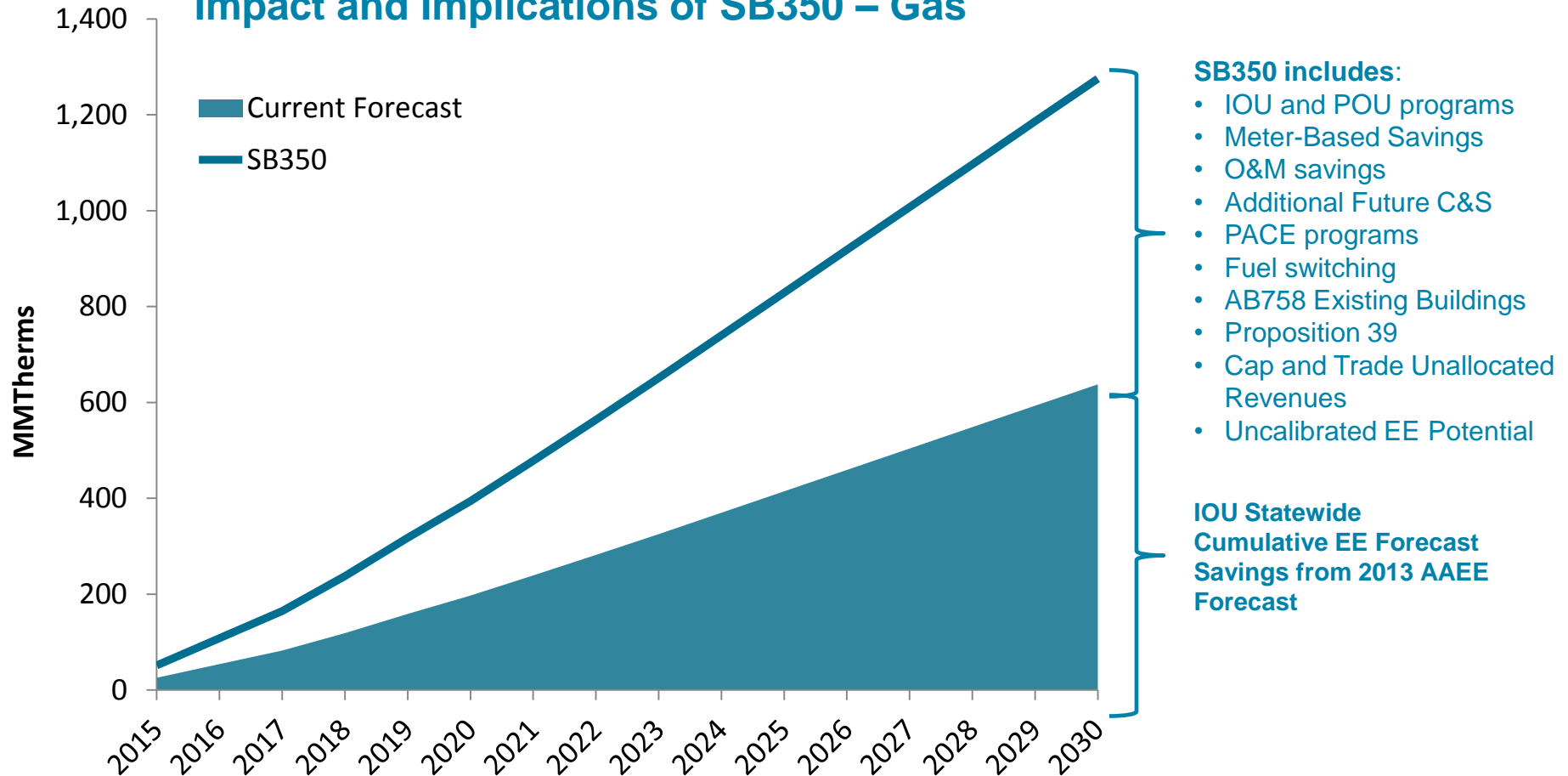
CAISO Net Load --- 2012 through 2020





But What about Gas?

Impact and Implications of SB350 – Gas



SB350 includes:

- IOU and POU programs
- Meter-Based Savings
- O&M savings
- Additional Future C&S
- PACE programs
- Fuel switching
- AB758 Existing Buildings
- Proposition 39
- Cap and Trade Unallocated Revenues
- Uncalibrated EE Potential

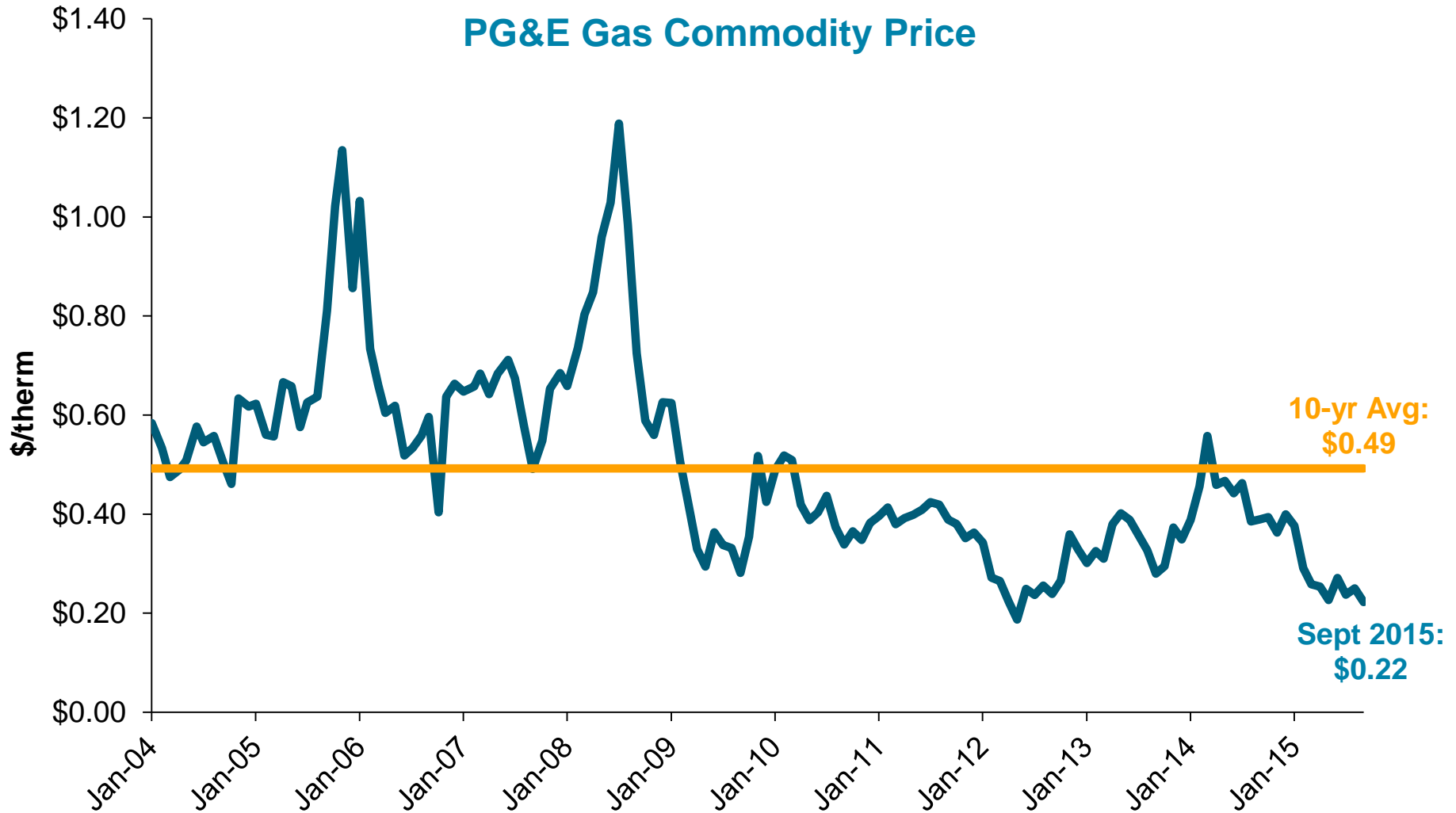
IOU Statewide Cumulative EE Forecast Savings from 2013 AAEE Forecast

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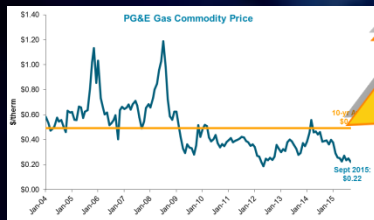
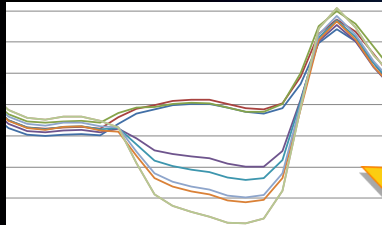
But What about Gas?



Source:

PG&E Tariff Book: <http://www.pge.com/notes/rates/tariffs/rateinfo.shtml>. Weighted Average Cost Of Gas includes the weighted average cost of gas and interstate pipeline volumetric commodity charges. It does not include franchise fees, uncollectables, or any other procurement related charges.

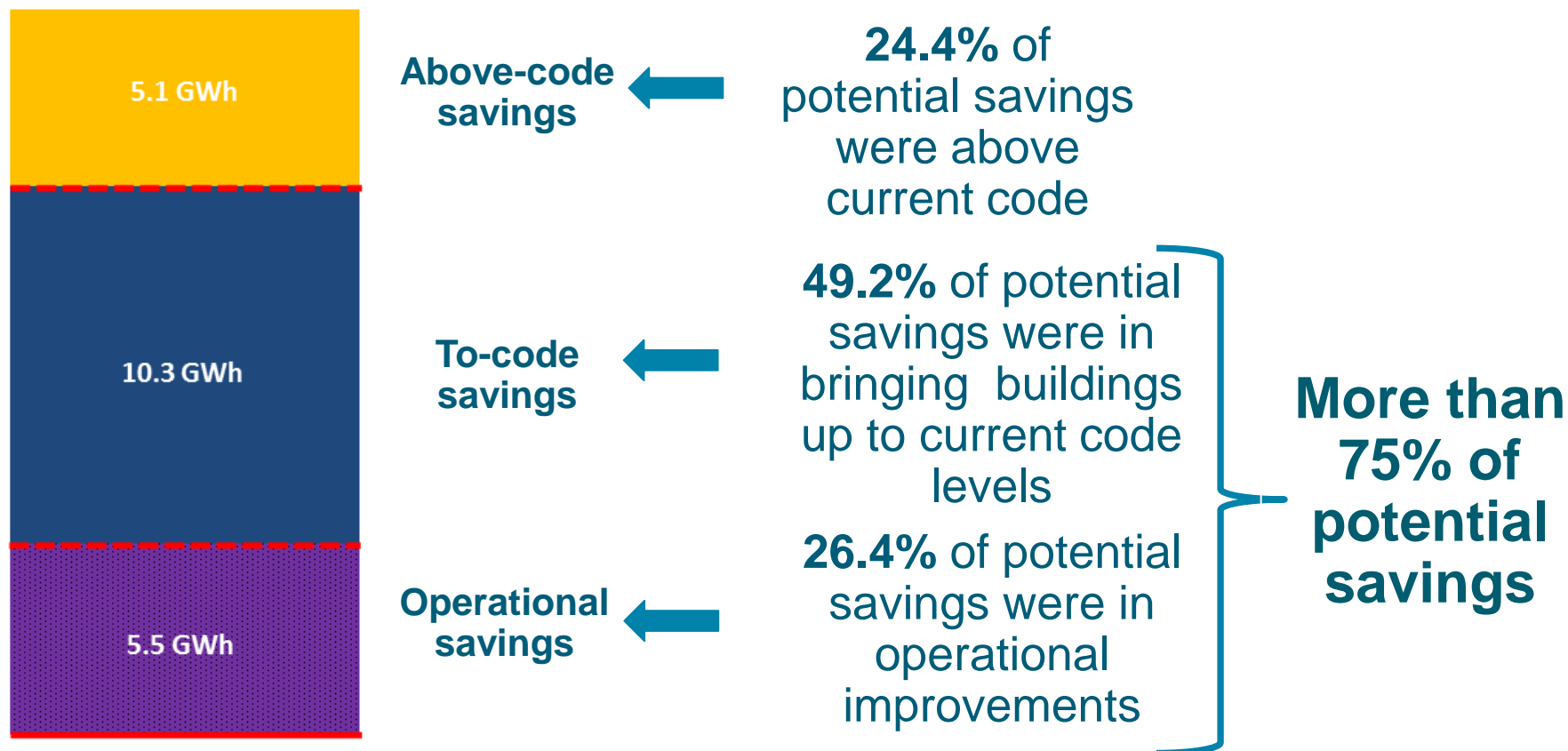
Preparing for A High Pressure System





Large Areas of Potential Savings

Aggregate Potential Energy Savings

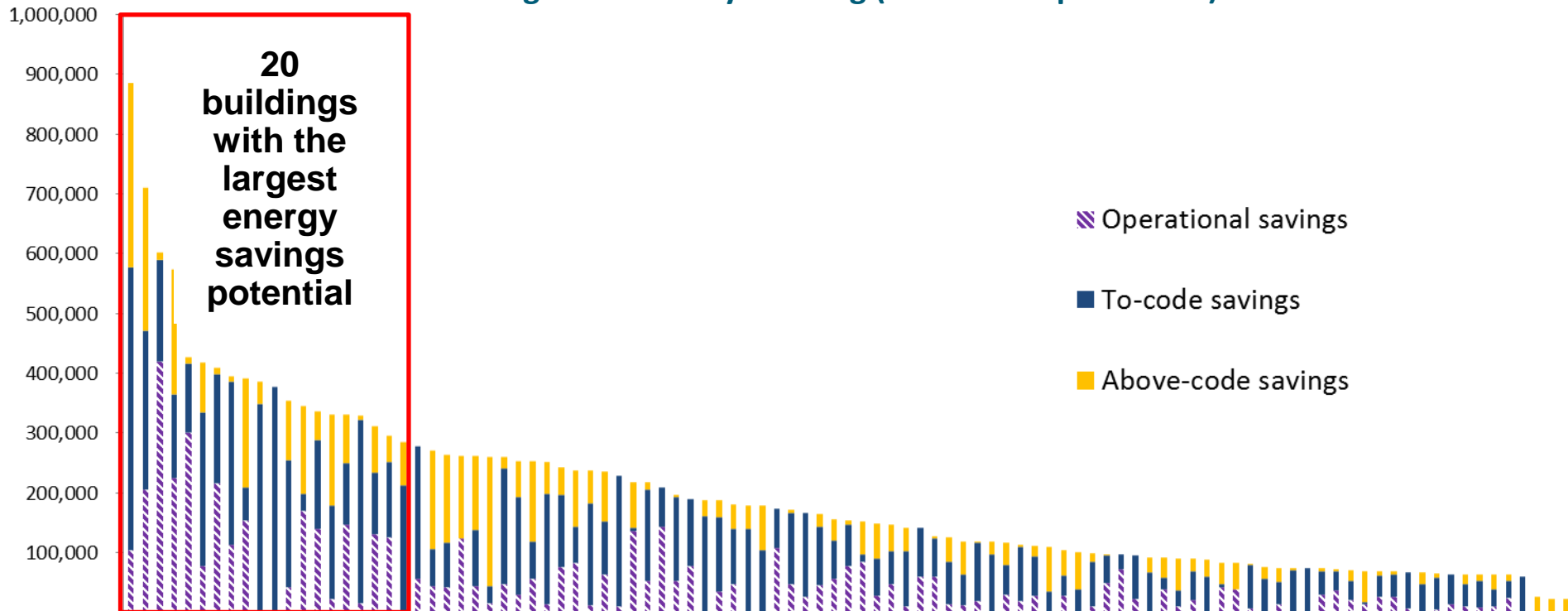


- Study examined 22 building energy end-uses making up the majority of consumption in 164 office, retail, grocery, and school buildings in the Central Valley



Focusing on Inefficient Buildings

kWh Savings Potential by Building (Retrofit + Operational)

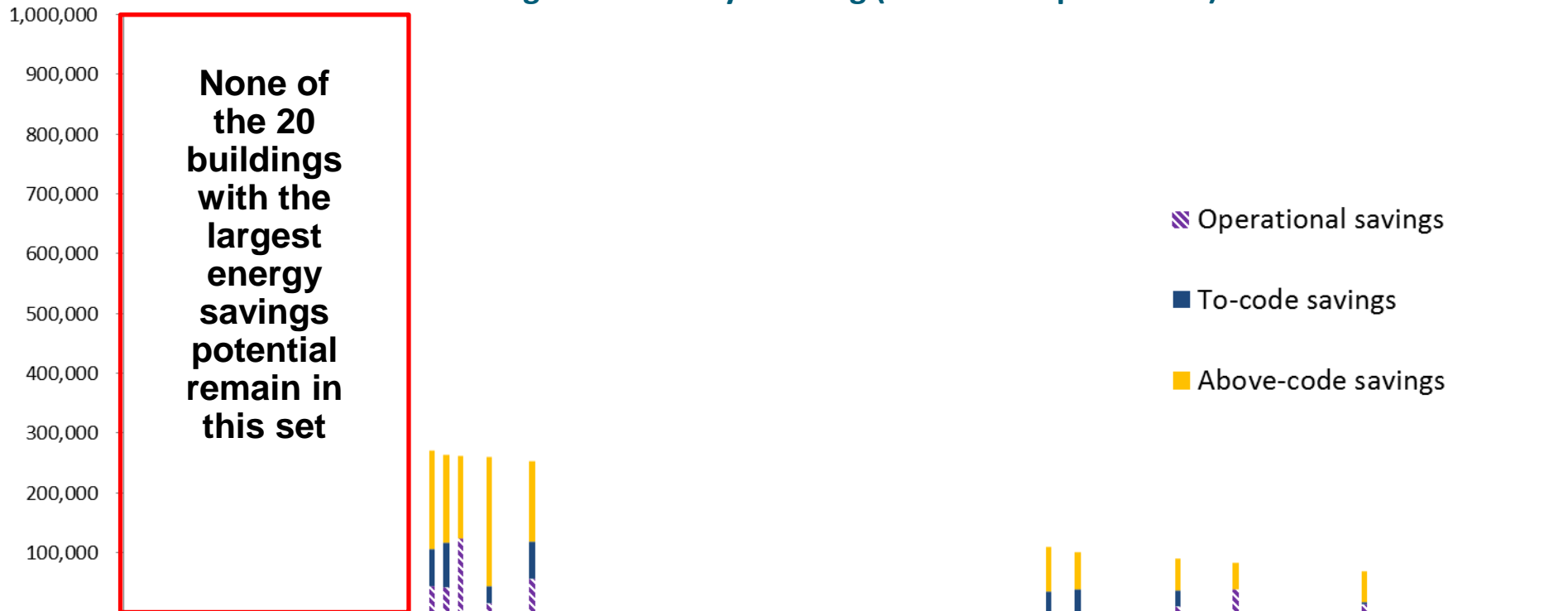


The 100 buildings with largest energy savings potential (out of the 164 examined)



No Building Left Behind

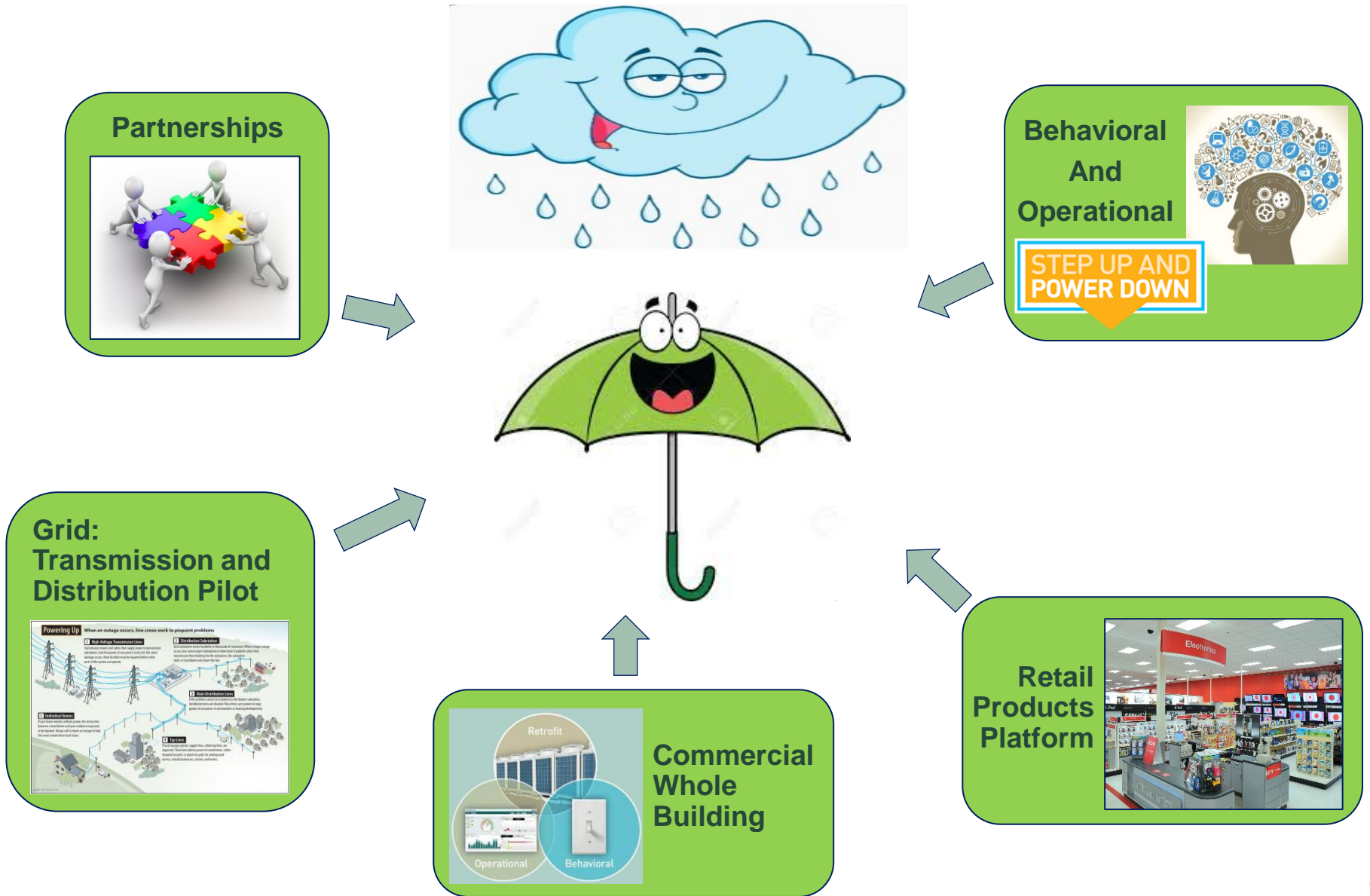
kWh Savings Potential by Building (Retrofit + Operational)



The 10 buildings that are best targets under current incentive rules (i.e., more than 50% of potential savings are above-code)



Multi Channel Approach





Commercial Whole Building

A comprehensive, performance-based approach designed to deliver 15+% post-installation energy savings in existing commercial buildings.

Efficiency Measure Types



Two Installment Payments

1

Up-front incentive payable after implementation

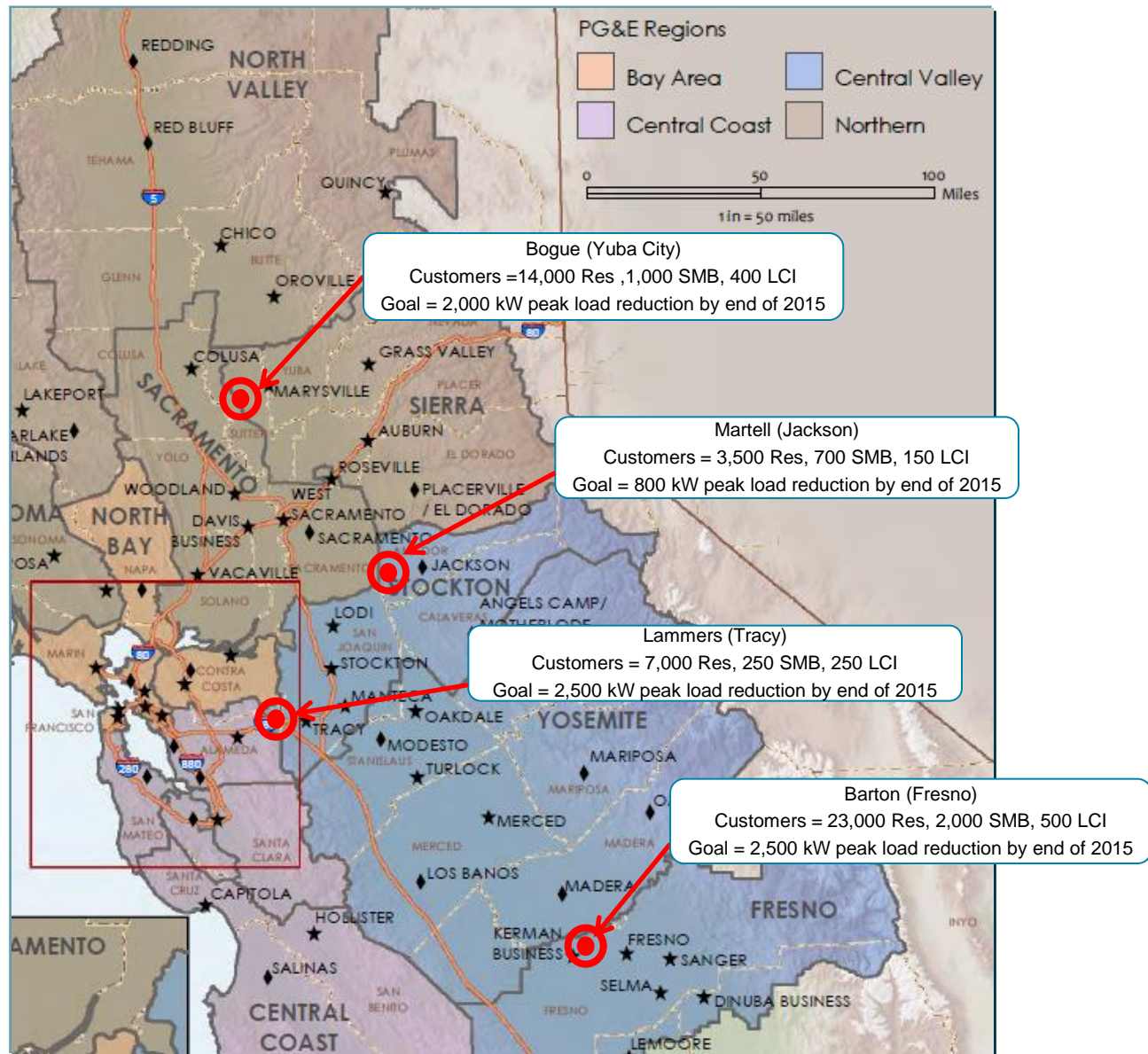
2

Performance incentive 1 year later based on achieved savings

Segments: office, retail, grocery, government, educational



Using EE as a Distributed Energy Resource

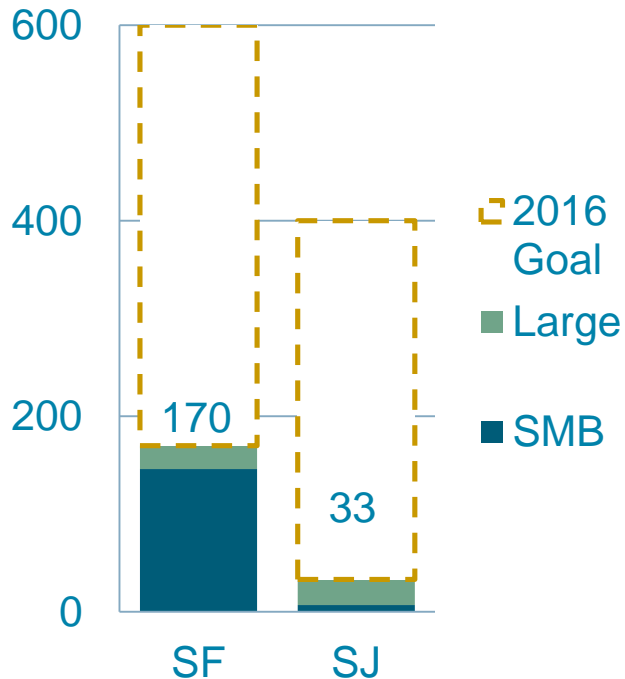




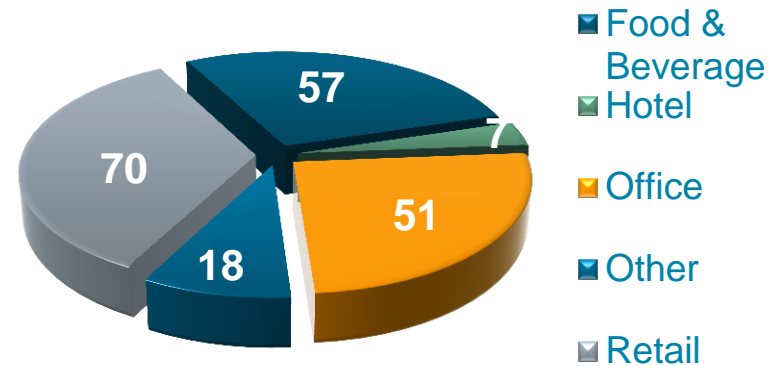
Step Up & Power Down

A community initiative inspiring local businesses to adopt behaviors that reduce energy waste.

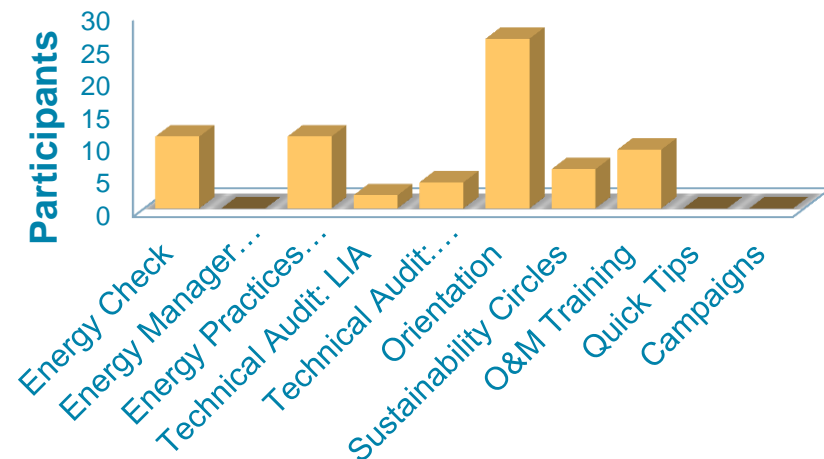
Overall Participant Goals



Sectors



Activities





Leverage Upstream: Retail Products Platform (RPP)

Leveraging Upstream Opportunities





Retail Products Platform: 2015 Partnerships



Home-Theaters-in-a-Box/Sound Bars



Air Cleaners



Dryers



Room Air Conditioning



Freezers



EDISON
INTERNATIONAL





Leveraging Partnerships



List of vendors is not exhaustive and is meant for illustrative purposes only

Thank You

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