

Transforming Utility Energy Efficiency Strategies through Regulatory Opportunities

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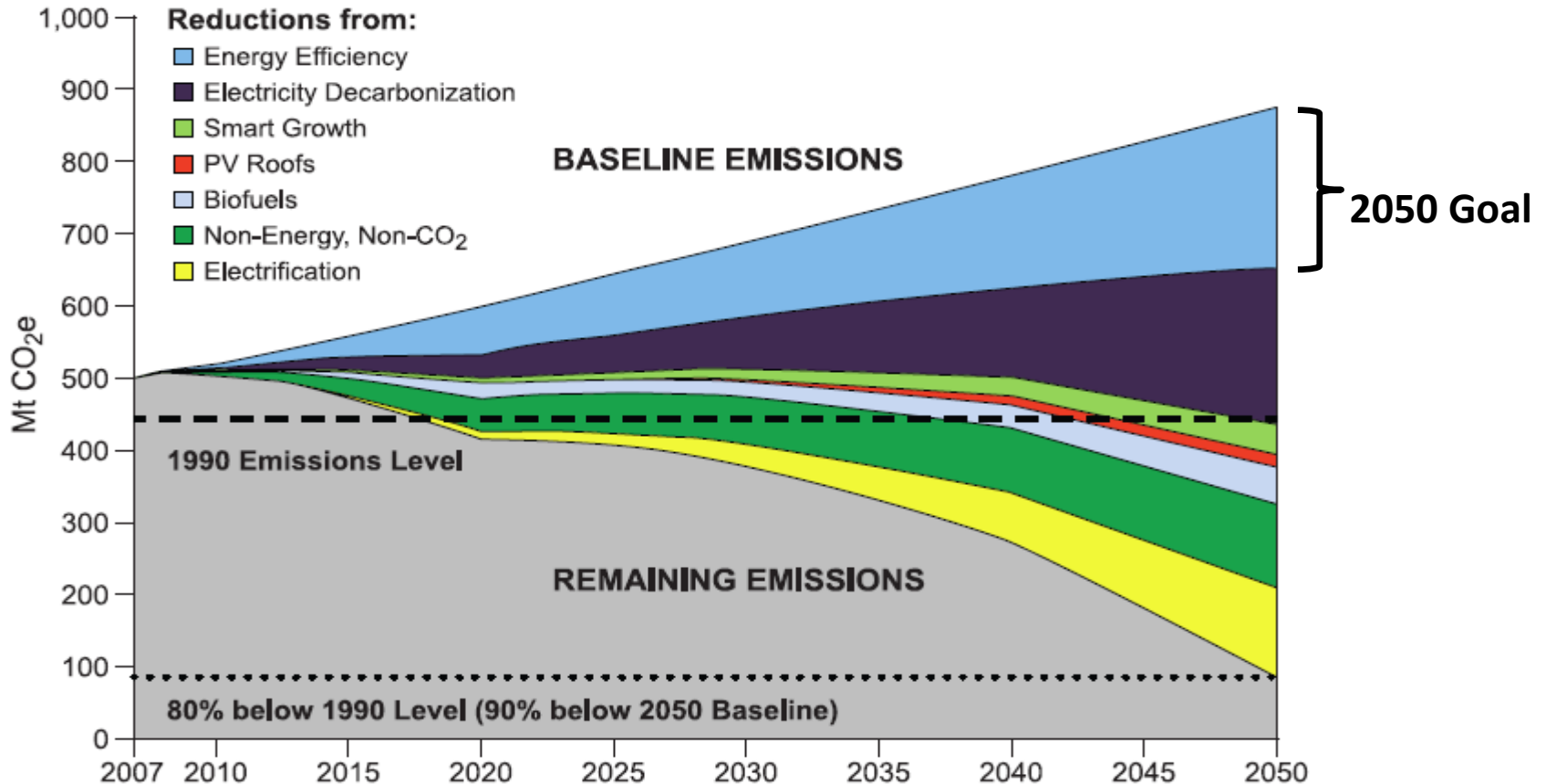
April 3, 2017

The Next Level of EE: The Five Challenges Ahead

- Dramatically increase the **magnitude** of savings
- **Diversify** the sources of savings
- Measure and ensure the **persistence** of energy efficiency savings
- Integrate energy efficiency savings within a **GHG emission reduction** framework
- Understand and value energy efficiency as part of an **evolving grid**

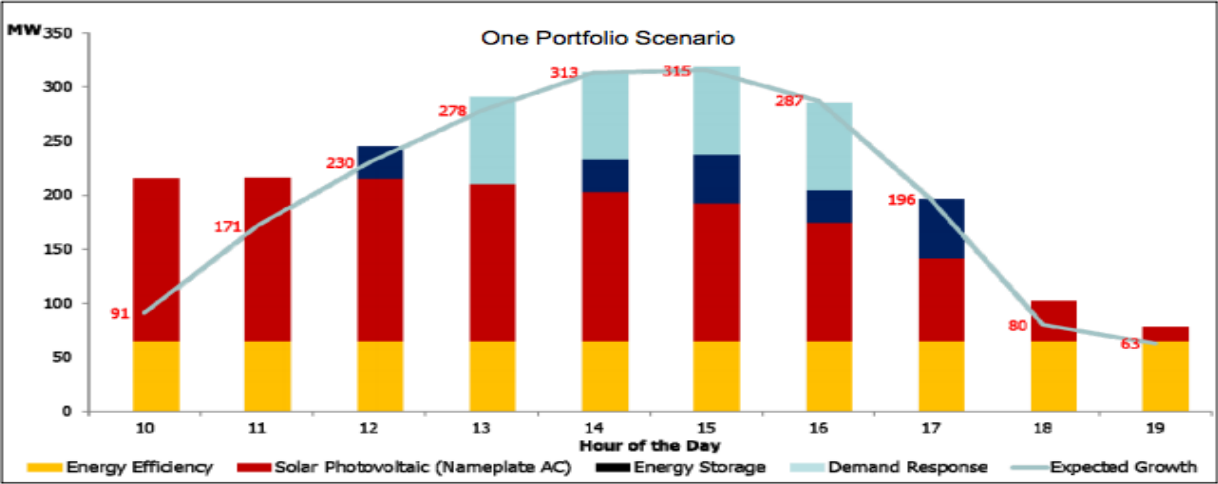
D. Grueneich, Electricity Journal, Vol. 28, Issue 7, Sept. 2015.

EE in CA Climate Change Efforts



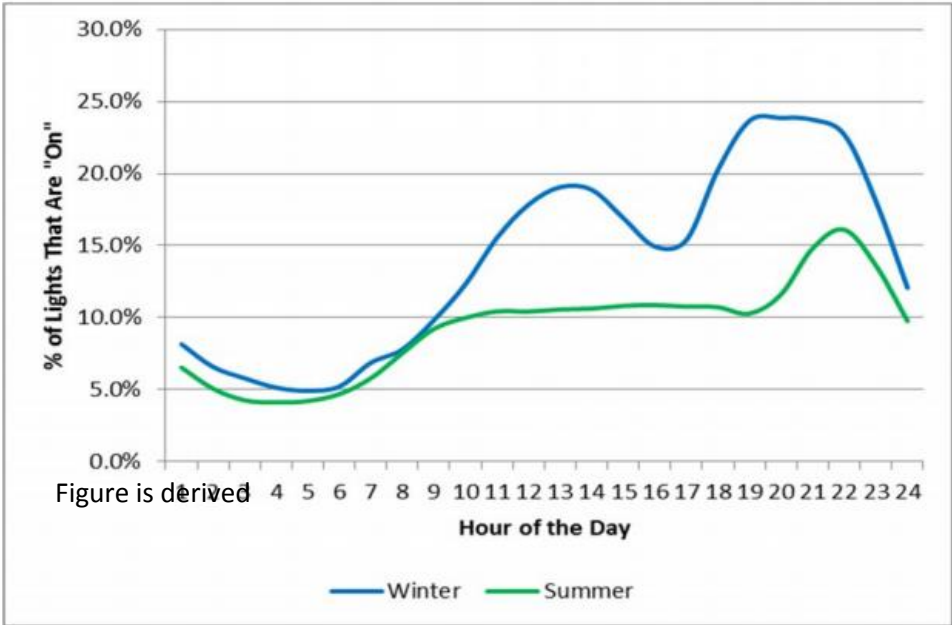
Source: "The Technology Path to Deep Greenhouse Gas Emissions Cuts by 2050: The Pivotal Role of Electricity", Science January, 2012

Challenge #5: Evolving Grid



Source: SCE's Preferred Resources Pilot (PRP) Annual Progress Update

Average Hourly CFL Usage Pattern



Source: Energy Efficiency as a T&D Resource: Lessons Learned from Recent U.S. Efforts to Use Geographically Targeted Efficiency Programs to Defer T&D Investments



Vision for the Future: An Updated and Integrated EE Policy Framework

- Develop forecasted baselines using standardized methodologies
- Focus on metered building savings and persistency
- Move from widget-based rebates only to PfP/market transformation approaches as well
- Pay for EE with “extra attributes” – locational value to avoid/defer distribution benefits; grid integration (EE load saving curves)
- Provide real-time/near-time feedback to many stakeholders
- Skip attribution and cost-effectiveness fights – focus on overall outcomes (we don’t require it for NEM/DG/renewable PPAs, etc.)(NY REV)
- Embrace new technology, esp. IT and cloud-based products, and private investment (e.g., PACE); update cost recovery and utility profit opportunities
- Focus on understanding customer EE opportunities (esp. when coupled with other customer initiatives like DR/PV/EV/storage) and customer engagement

New CA Laws Begin This Change

- SB 350 – doubles EE goals through 2030
- AB 802 – existing metered conditions baseline, building performance focus (all savings count)
- AB 793 – incentives for customer energy management technology
- SB 32/AB 197 – Reduce statewide GHG emissions by at least 40% below 1990 levels by 2030; increased focus on disadvantaged CA communities

First New CA Law - SB 350 (2015)

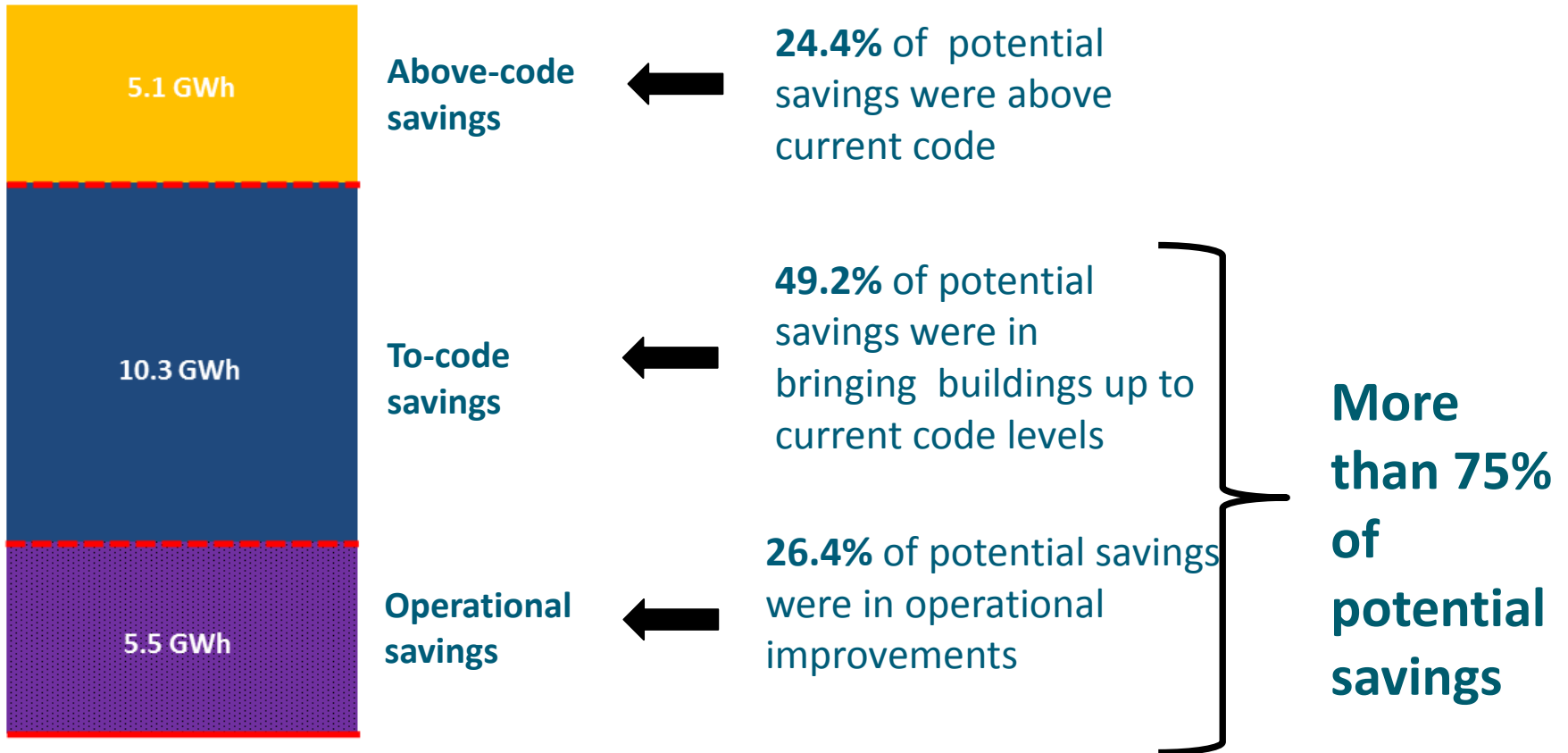
- 50% Renewable Portfolio Standard by 2030
- **Double (cumulative basis) of energy efficiency in existing buildings, based on metered energy reductions, by 2030 (20% decrease in building energy use)**
- Utility programs for transportation electrification
- Explore Western US wholesale energy market
- Updated GHG focus for utility Integrated Resource Plans (IRPs)

Second New CA Law - AB 802 (2015)

- Revises CA's energy benchmarking law
- Dramatic change for utility-customer programs
 - Focus on meter-based building performance
 - **Count all savings: operational, behavioral and retro-commissioning activities**
 - Baseline based on metered existing conditions (rather than Title 24 “at code”)
 - **Utility rebates for all savings from existing conditions**

New CA Law (AB 802): Go After ALL Potential Savings

Aggregate Potential Energy Savings



Other Key Activities

- PG&E's Diablo Canyon Closure and EE Solicitation

Four Thoughts About the Future

- Traditional EE policy framework must change to capture full EE potential and support market innovation
- New tools, esp. data analytics, can help
- Work is just starting on EE's role in a larger customer-focused portfolio of ER/DG/EV/storage and large amounts of renewables
- Utility involvement and customer engagement are critical

Thank You

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