California Initiatives To Be Considered in DOE's 2009 Congestion Study

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California Public Utilities Commission
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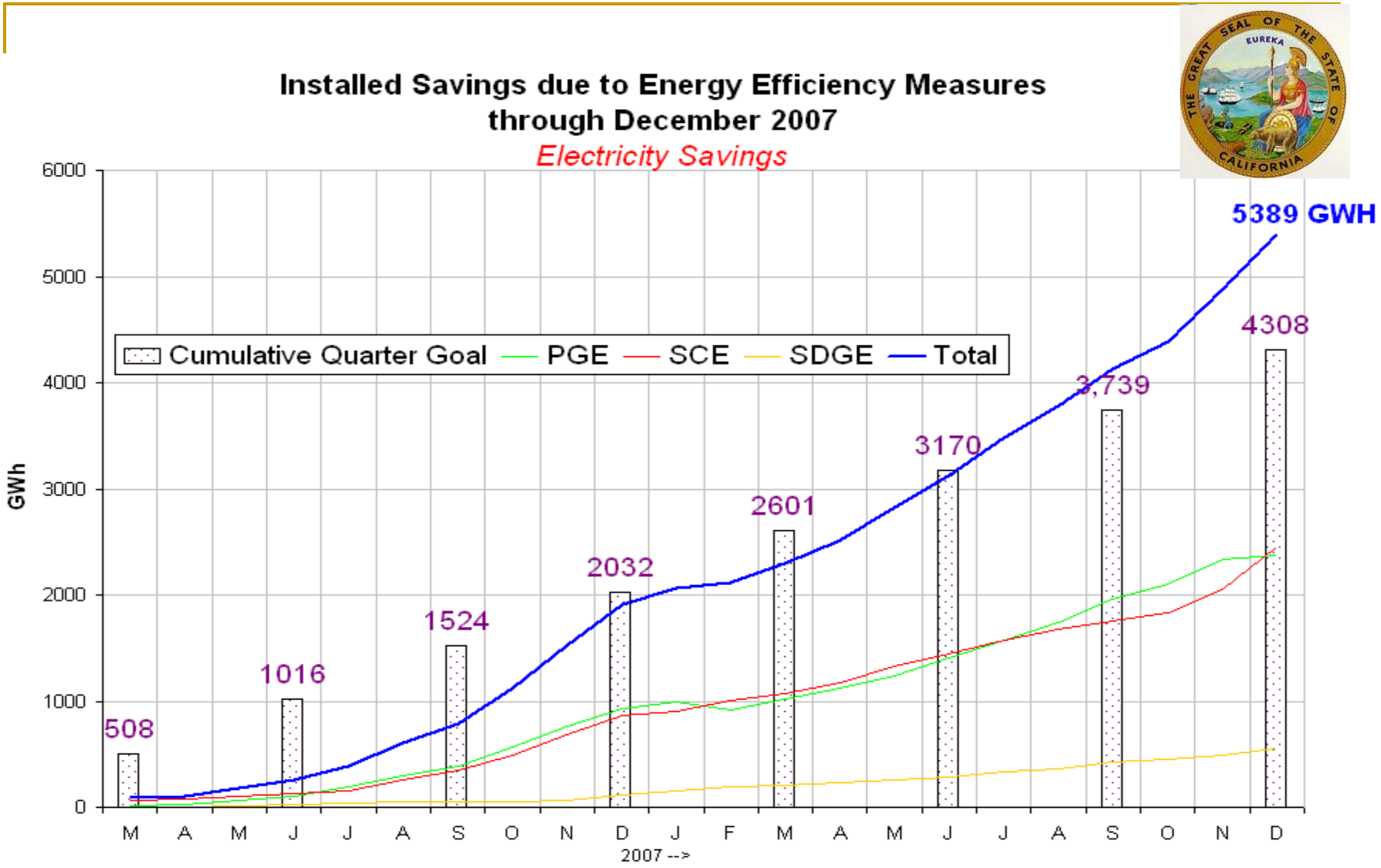
CPUC Initiatives - Overview

- Significant increases in Energy Efficiency
- New Demand Response programs – AMI & Dynamic Pricing
- Renewable Portfolio Standard - 20% by 2010
- Green House Gas Emission Reduction Goals
  - California will need more EE, DR, and RPS
  - 33% RPS by 2020 requires significant transmission investment
- Transmission Streamlining and Statewide Planning
  - Multiple projects already approved, or in permitting and planning stages
- California Solar Initiative
- Feed In-Tariffs for Distributed Generation
- Resource Adequacy
- Long Term Procurement

Energy Efficiency

- Authorized $2 billion investment by IOUs in EE between ’06 – ’08:
  - Results in more than a **$5 billion cut in energy costs** for homes & businesses, thus providing a **2 to 1 return** on the efficiency investment.
  - **Avoids building 3 large (500 MW) power plants** over the next three years.
  - Reduces GHG by an estimated 3.4 million tons of carbon dioxide by 2008, which equals taking about **650,000 cars off the road.**
- CPUC will update EE Savings Goals to 2020 to support GHG goals this summer
- Long-term Strategic Plan for ’09 - ’11 finalized by Fall 2008:
  - New homes - 35% better than 2005 energy codes by 2011 and zero net energy by 2020.
  - New commercial buildings - zero net energy by 2030.
  - Existing commercial buildings - reduce energy needs 20%.
  - Cont’d partnership with the HVAC Sector to support system-wide efficiency.



NOTE: The cumulative goals on this chart are for 2006 -2007.

Demand Response

- Avoiding the construction of 5 large power plants due to aggregated savings of 2,700 MW:
  - IOUs have enrolled approx. 1,700 MWs of emergency-triggered demand response, and 1,100 MWs of price-responsive demand response.
- Deployment of Advanced Metering throughout California:
  - By 2012, deployment of advanced meters should be completed for all three IOUs
  - Investigating Smart Grid issues with CEC
- Developing demand response measurement protocols:
  - Will determine actual load savings generated by programs
  - Critical for CAISO, IOU procurement planning, and for improving the cost-effectiveness of the programs
- Developing dynamic pricing rates so that consumers receive appropriate price signals to reduce their electricity usage when the cost of electricity is high

Renewable Portfolio Standard

- 20% of IOU retail sales must be RPS by 2010:
  - Based on contracts approved, pending approval or under negotiation, CPUC expects IOUs will hit 20% on a delivered basis in the 2012-2013 timeframe.
  - Pursuant to statute, IOUs are allowed to defer their obligation until 2013 under certain circumstances.
- RPS near and above 20% requires significant new transmission investment
  - CPUC approved the Tehachapi Renewable Transmission Project (Segments 1 through 3) to facilitate delivery of renewable resources to the Los Angeles area.
  - 700 MWs by early 2010

Transmission Permitting

- Streamlined permitting process and improved statewide planning efforts actively address need for transmission infrastructure:
  - In 2007 – Approved 7 transmission projects, adding about 2,400 MW of capacity to the grid.
  - As of April 2008 – Approved 3 transmission projects, adding about 1257 MW capacity to the grid.
  - Next 3 years – anticipated 27 applications, 7 of which are already pending before the Commission, worth over $4 billion in transmission investment.

Transmission Permitting

- California Renewable Energy Transmission Initiative (RETI)
  - Coordinated by the CPUC, CEC, CAISO, and 3 municipal utility representatives
  - Statewide stakeholder collaborative that will identify *developable* RPS resources and the transmission projects needed to bring those resources to load centers *on an expedited schedule*.
  - Detailed renewable resource assessment of state and neighboring areas expected August 2008

Transmission Permitting

- **ISO Interconnection Queue Reform**
  - Over 40,000 MWs of renewable projects in the ISO interconnection queue
  - No way to study them all on a case-by-case basis
  - Queue reform is critical to identifying the transmission needed for the next big renewable resource areas
  - CAISO, CPUC and other stakeholders are collaborating on a proposal to FERC to break the queue log jam.

Active Transmission Cases

- **SCE's Devers-Palo Verde 2**
  - Would increase import capacity from Arizona in LA Basin by 1,200 MW
  - Originally projected on-line date Summer 2009
  - Estimated cost approx. $600M
  - CPUC approved January 2007
  - State of Arizona did not approve the project in May 2007
  - SCE in pre-filing process for FERC preemption of ACC decision
  - SCE filed application with CPUC May 2008 for authorization to build CA-Portion of line pending ACC approval of remainder

Active Transmission Cases

- **SCE's Tehachapi Region Projects**
  - Will provide 4500 MW of capacity from wind-rich resource area into LA Basin.
  - CPUC approved first phase (three transmission lines) March '07
  - Construction under way
  - Projected on-line early 2010
  - 700 MW of new capacity
  - Second phase application filed with CPUC June '07
  - On-line 2011 through 2013
  - CPUC decision expected early '09

Active Transmission Cases

- **SDG&E's Sunrise Powerlink**
  - Would increase import capacity into San Diego by 1,000 MW
  - Projected on-line 2011
  - Estimated cost $1.4B
  - CPUD decision 4th Quarter 2008
- **PG&E's Central California Clean Energy Transmission Project**
  - Upgrades Path 15 by increasing the transfer capability by approximately 1250 MW to facilitate delivery of Tehachapi wind resources to PG&E services.
  - Project to be filed by PG&E December 2008
  - Projected on line 2012.

California Solar Initiative (CSI)

Photo: Travis Richardson, Hansen Trout Farm; Fillmore, CA. 105 kW California Solar Initiative Funded System, June 2007, Installer: GW Richardson Heating & Air Conditioning, Inc. Engineer/Designer: Kris Sutton, Travis Richardson

- In its first fifteen months, over 10,000 applications worth 249.3 MW of new solar
- 33 MW installed, the rest in process
- Solar demand remains robust - solar installations funded by CSI are expected to exceed 100 MW in 2008.
  - For comparison – all of California installed ~81 MW in 2007 (up from 59 MW in 2006).
- We continue to implement RD&D and low-income programs, and to provide public access to program data

Feed-In Tariffs for DG

- **Self Generation Incentive Program (SGIP) largest non-solar DG incentive program in the U.S., with over 940 projects on-line.**
  - In April 2008, CPUC raised the cap (from 1 MW to 3 MW) on the size of wind and fuel cells facilities that are eligible for SGIP incentives.
- **Small Renewable Generation Feed-In Tariff:**
  - Originally mandated for public water/wastewater facilities, CPUC implementation decision requires SCE and PG&E to offer the program to other types of facilities as well.
  - Program allows eligible DG systems to use a standard tariff/contract for sale of renewable energy to CA IOUs
  - Reduces transaction costs to make small renewable DG more viable
- **Combined Heat and Power facilities:**
  - Similar feed-in tariff program for excess sales to be implemented in 2008.

Resource Adequacy

- Commission Resource Adequacy program requires IOUs to procure adequate resources to meet both normal conditions plus contingencies
  - Statewide: 1-2 year forecast plus 15% planning reserve margin
  - In local congestion areas (such as the San Francisco peninsula): 1-10 year forecast plus 2 contingencies

Long Term Procurement

- CPUC's Dec. '07 Long-term Procurement Decision authorizes IOU plans and grants procurement authority through 2015:
  - PG&E: 800 – 1,200 MWs
  - SCE: 1,200 – 1,700 MWs
  - SDG&E: 530 MWs (local reliability)

Recommendations

- DOE needs to take State programs and policies into consideration in next Congestion Study
- Non-Wires alternatives, such as EE, DR, and generation, must be recognized as solutions to congestion
- There needs to be a process for de-listing corridors once congestion issues are addressed
- Identification of over-broad corridors supports a one-size fits all approach potentially inconsistent with individual state goals