



# California's Policies And Other Structural Programs Promoting Distributed Energy Resources

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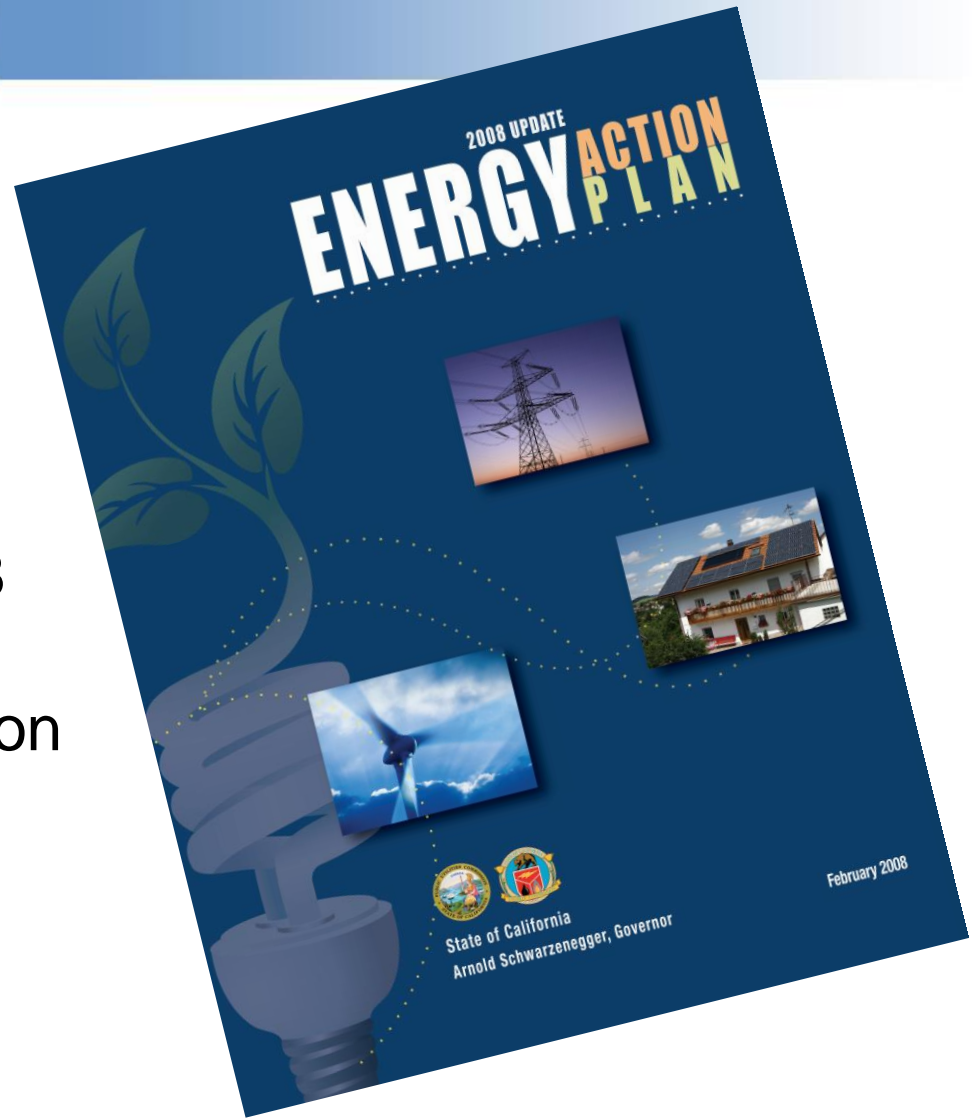
# Presentation Topics

- California Policies to Promote DER
  - The California Loading Order
  - Solar Initiative and Distributed Energy Programs
  - Storage Mandate
- Structural Systems to Facilitate DER
  - Rule 21 – Interconnection Rules
  - “Track 4” of Long Term Procurement



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First developed  
and published in 2003

Updated in 2005 and 2008

The California Energy Action  
Plan was a bold departure  
from earlier thinking about  
Energy Resources

<http://www.cpuc.ca.gov/PUC/energy/Resources/Energy+Action+Plan/>



# Central Station Power Is the Last Option

- **The Loading Order**
  - First, Energy Efficiency and Demand Response
  - Then Renewable Energy sources and Distributed Generation, such as Combined Heat & Power (CHP)
  - Finally, Clean Fossil Energy only if required



# Saving Money, or the Environment?

Traditionally, the engineers who run the electric grid have turned first to the least-expensive power plants to meet consumer demand for electricity, then added more expensive generation as needed. But to satisfy the new fuel, grid operators may choose instead to tap the least-polluting options first, which could increase costs to consumers.

Rebecca Smith, *“New Expectations for Electricity Consumers,”*  
**Wall Street Journal**, Monday, August 3, 2015, page A4.



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# California Self-Generation Incentive Program

The CPUC's Self-Generation Incentive Program (SGIP) provides incentives to support existing, new, and emerging distributed energy resources. The SGIP provides rebates for qualifying distributed energy systems installed on the customer's side of the utility meter. **Qualifying technologies include wind turbines, waste heat to power technologies, pressure reduction turbines, internal combustion engines, microturbines, gas turbines, fuel cells, and advanced energy storage systems.**

<http://www.cpuc.ca.gov/PUC/energy/DistGen/sgip/>



# California Solar Initiative and Distributed Energy Programs

- Total Budget \$2.2 Billion/10 years
  - Goals of 1,940 MW Installed by end of 2016
  - Including 190 MW in low-income programs
  - R&D: \$150 million
  - SASH and MASH (Single-Family and Multi-Family Affordable Solar Homes) \$216 million
  - CSI Thermal and Solar Water Heating \$350 million

<http://www.cpuc.ca.gov/puc/energy/solar/aboutsolar.htm>



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# CPUC Storage Decision Highlights

*In October 2013, the CPUC approved D.13-10-040, establishing storage procurement targets:*

- IOU targets: 1,325 MW of storage by 2020 in 4 biennial solicitations (starting December 2014), as follows:
  - PG&E 580 MW [Pacific Gas & Electric]
  - SCE 580 MW [Southern California Electric]
  - SDG&E 165 MW [San Diego Gas & Electric]
- Above targets divided into three “storage grid domains”
  - Transmission-connected,
  - Distribution-level, and
  - Customer-Side (Behind the Meter) applications;
- Non-utility LSEs targets ~ 1% of peak load by 2020



# Current Proceeding R.15-03-011

- Ongoing implementation of legislation Assembly Bill 2514 & *refine* policies and program details.
- Track 1 - issues that must be expeditiously resolved prior to the 2016 procurement solicitations & January 1, 2015 required Tier 2 AL filings of ESPs and CCAs
- Track 2 - additional issues to continue to refine policies and program details



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# Rule 21– Interconnections

- Electric Rule 21 is a tariff that describes the interconnection, operating and metering requirements for generation facilities to be connected to a utility’s distribution system, over which the California Public Utilities Commission (CPUC) has jurisdiction.
- Update for Smart Inverters and Storage options

<http://www.cpuc.ca.gov/PUC/energy/rule21.htm>



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# In the Previous Proceeding Track 4 was all about SONGS

## Decision D.14-03-004

This is the Track 4 decision in the 2012 long-term procurement proceeding. In this decision, we authorize Southern California Edison Company (SCE) to procure between 500 and 700 Megawatts (MW), and San Diego Gas & Electric Company (SDG&E) to procure between 500 and 800 MW by 2022 to meet local capacity needs stemming from the retired San Onofre Nuclear Generation Stations (SONGS). SCE is required to procure at least 400 MW, and may procure up to the full 700 MW of authorized additional capacity, from preferred resources or energy storage. SDG&E is required to procure at least 200 MW, and may procure up to the full 800 MW of authorized additional capacity, from preferred resources or energy storage.



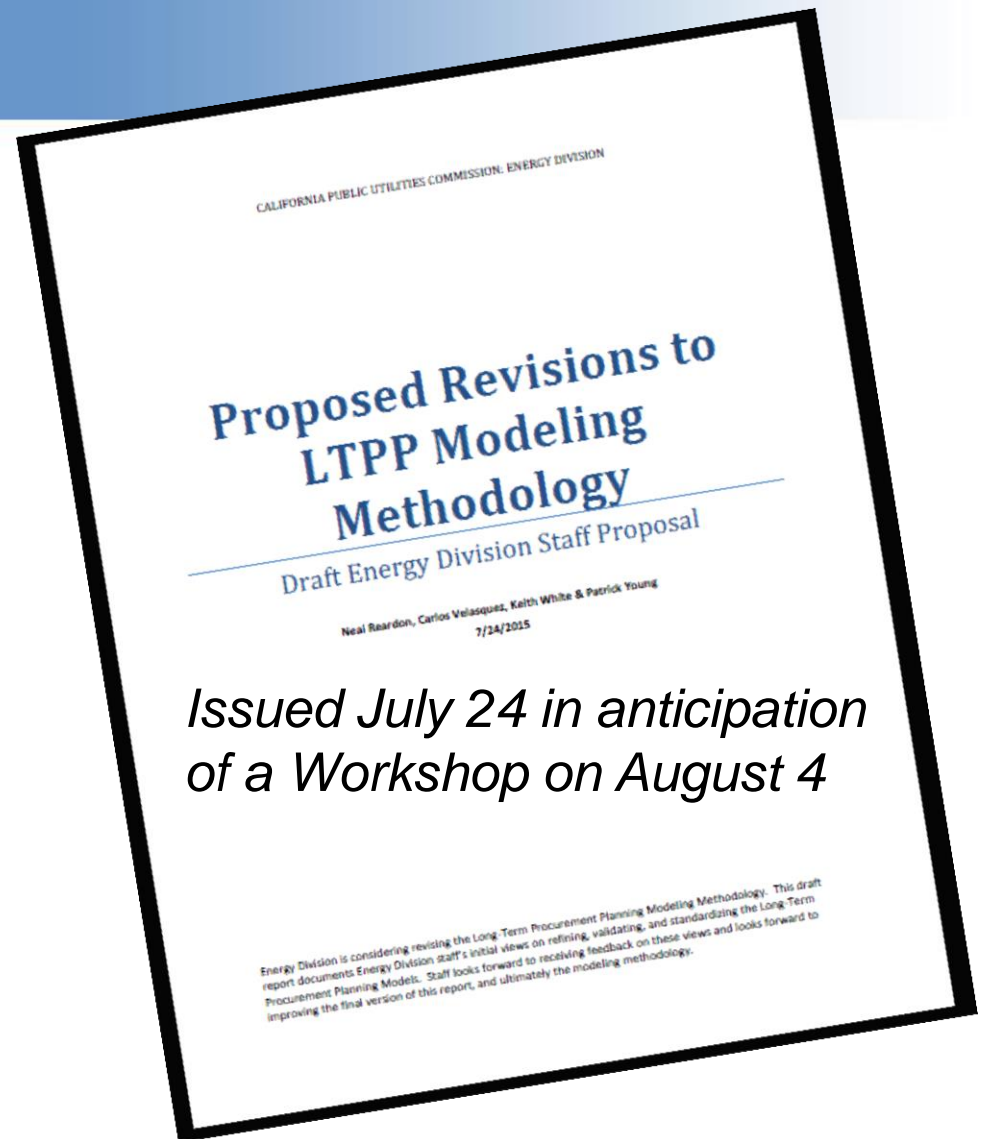
# Current LTPP Proceeding R.13-12-010

- A 10-year-ahead look at system, local, and flexible needs
- When needs are identified, the CPUC authorizes procurement
- Planning Assumptions

<http://www.cpuc.ca.gov/PUC/energy/Procurement/LTPP/>



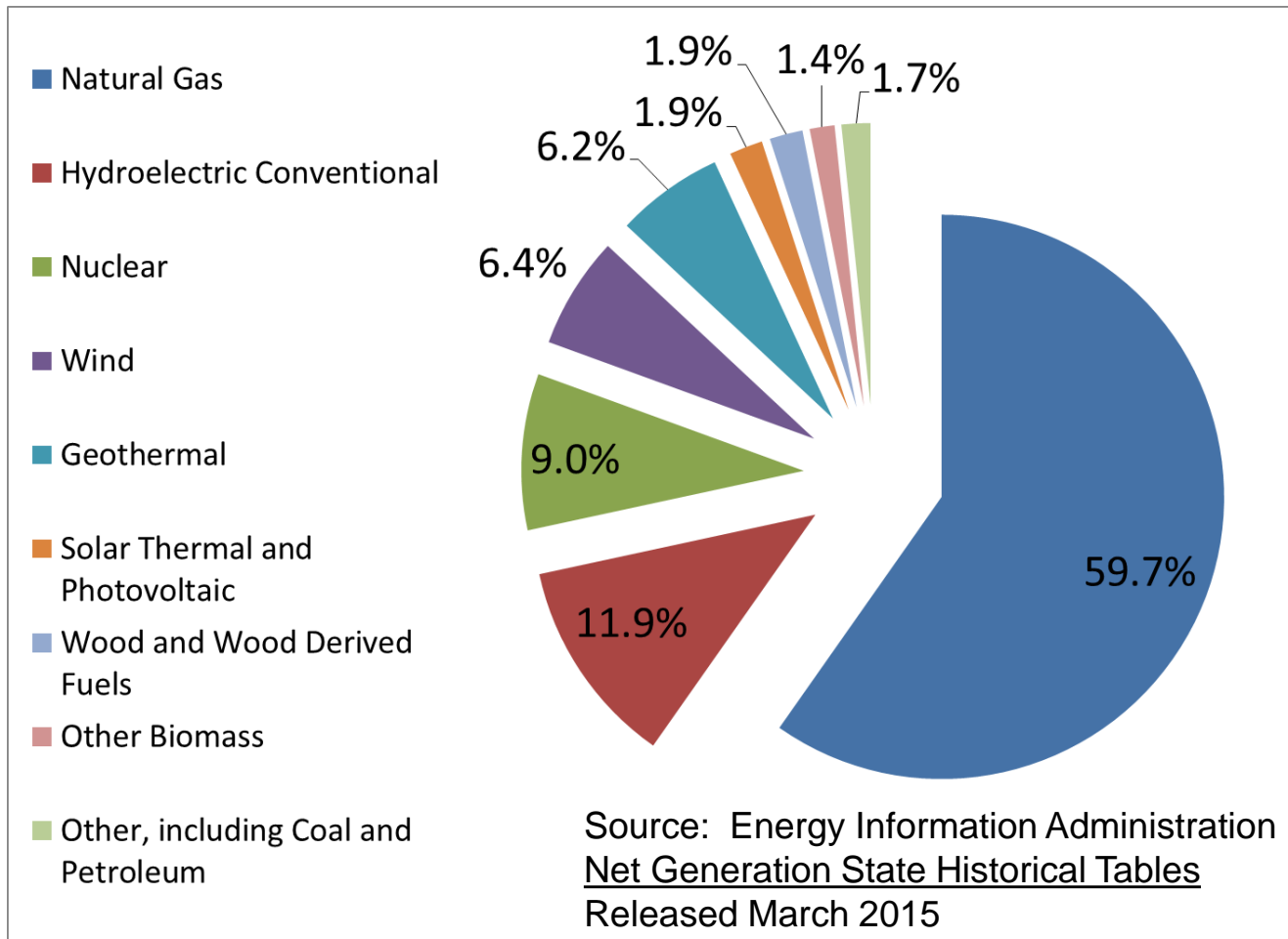
“It may be necessary to supplement the traditional planning paradigm to ensure not only sufficient peak capacity but also sufficient flexibility to balance the variability and uncertainty of load plus wind and solar generation over all time periods of the year, not just peak months and hours, and with more temporal granularity.”



[http://www.cpuc.ca.gov/PUC/energy/procurement/  
LTPP/ltp\\_history.htm](http://www.cpuc.ca.gov/PUC/energy/procurement/LTPP/ltp_history.htm)



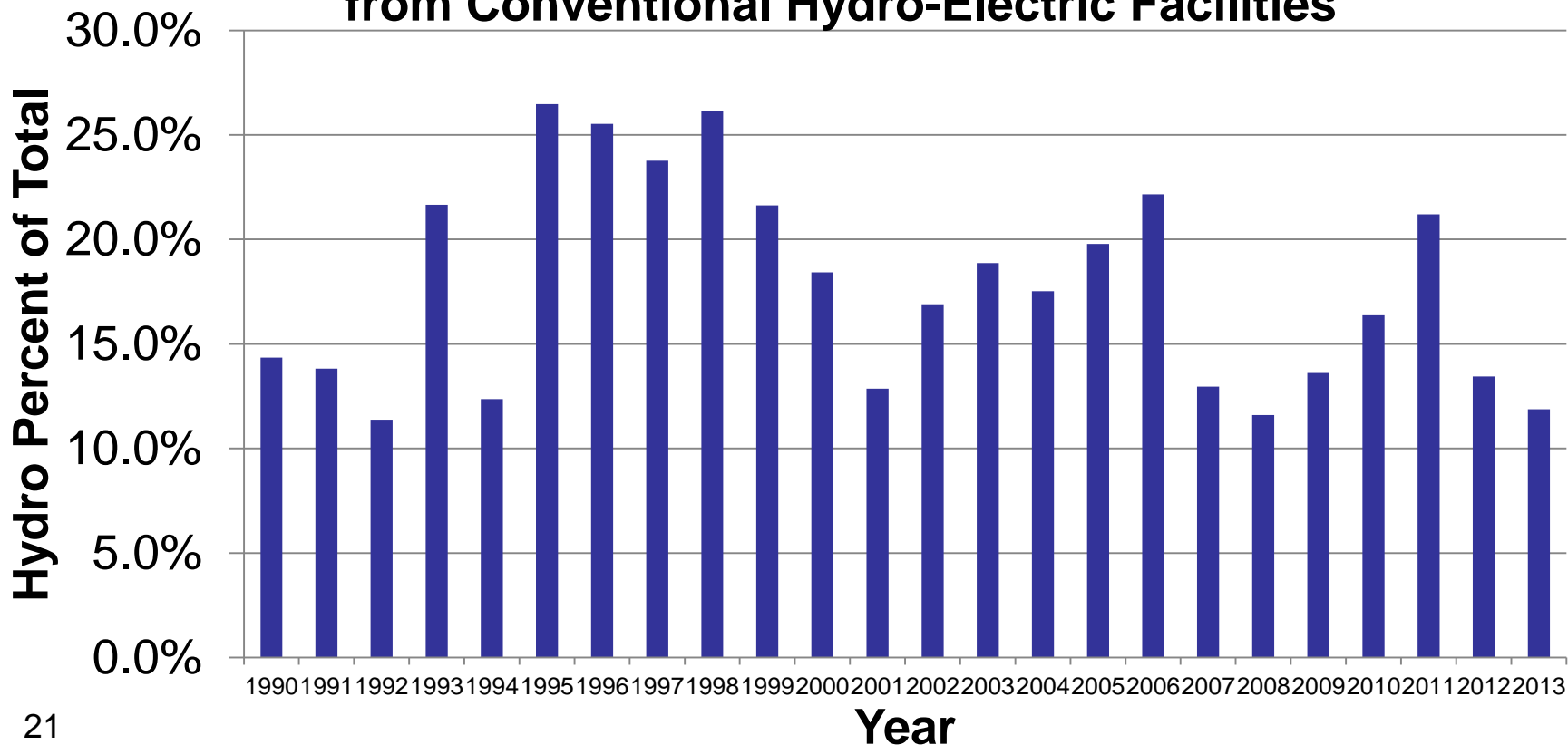
# Sources of California Net Electric Generation in 2013





# California's Drought And Conventional Hydro-Electric

**Percent of California's Total Electric Net Generation  
from Conventional Hydro-Electric Facilities**





# Last but not least: Why the CPUC Exists!

- *Safe* – to the producers, the users, and the general public
- *Adequate* – enough for reasonable usage
- *Reliable* – high quality service
- *Just & Reasonable rates* – elements of fairness and efficiency in pricing



**Thank you!**  
**For Additional Information:**  
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