



Renewables integration and Energy Storage

November 7, 2014



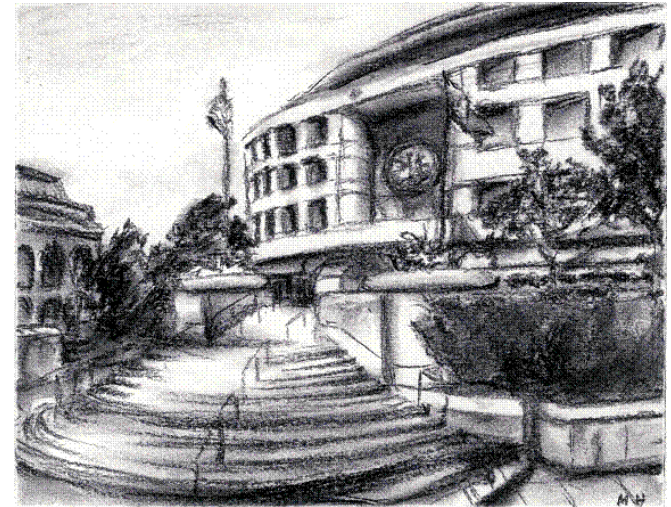
IRENA Workshop
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California Public Utilities Commission





CPUC Mission

The CPUC serves the public interest by protecting consumers and ensuring the provision of safe, reliable utility service and infrastructure at reasonable rates, with a commitment to environmental enhancement and a healthy California economy.



We regulate utility services, stimulate innovation, and promote competitive markets, where possible, in the communications, energy, transportation, and water industries.



Overview of CPUC Energy Oversight

- The CPUC regulates the investor-owned electric and gas utilities in California that collectively serve over two-thirds of total electricity demand and over three-quarters of natural gas demand throughout California.
- The CPUC has played a key role in making California a national and international leader on a number of energy related initiatives designed to benefit consumers, protect the environment, and support California's economy.
- The CPUC develops and administers energy policy and programs to serve the public interest and ensures compliance with decisions and statutory mandates.





California's Renewables Procurement

- **33% RPS**
 - The utilities have installed over 7.5 GW of renewables to date
 - The large investor owned utilities serve their 21% of their retail electricity load with RPS-eligible generation
- **Customer-side renewables**
 - Nearly 1.6 GW of customer-side solar installed
 - 23 MW of customer-side wind installed
- **Energy storage is one solution to address renewables integration issues**



AB 2514 (Skinner, 2010)

- **Directed CPUC to open a proceeding to:**
 - Adopt procurement targets, *if appropriate*, for each LSE* to procure viable & cost-effective energy storage
- **CPUC to re-evaluate its determinations every three years**
- **Future utility Renewable Portfolio Standard (RPS) plans must comply w/ storage decision**

*LSE = Load serving entity





CPUC Storage Decision Highlights

On October 17, 2013, the CPUC approved D. 13-10-040 to establish storage procurement targets and policies for load-serving entities (utility & non-utility):

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



Project Eligibility

- **Eligible storage projects must address one or more policy goals:**
 - Grid optimization
 - Integration of renewable energy; and
 - Reduction of GHG emissions
- **Procurements in other proceedings/programs can be counted**
- **Pumped Storage >50 MW not eligible**
- **To count against targets, projects must be:**
 - Installed and operational after January 1, 2010
 - In operation no later than December 31, 2024



Flexibility Allowed in Meeting Targets

- **After a solicitation, utility may request a deferment of up to 80 percent of targets with an affirmative showing of:**
 - Unreasonable cost burden or
 - Insufficient number of operationally viable project offers
- **Deferments added back in for the next solicitation**
- **Must make up delayed procurements by 2020**





Where we are now

- **CPUC approved the utilities' procurement plans in October 2014**
- **The utilities are ordered to initiate their first RFO in December 2014**
 - SCE already committed to purchase 261 MW of energy storage - nearly half of total procurement target
- **CAISO/Energy Commission/CPUC developing an Energy Storage Roadmap to identify and address implementation issues for storage policies**
- **CPUC to open a rulemaking to address outstanding issues in 2015**



Thank you!

For Additional Information:

www.cpuc.ca.gov

“energy storage” web page

