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.
CPUC Energy Storage Decision
D.13-10-040

1,325 MW in operation by 2024
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*
Energy Storage Rulemaking (R.10-12-007)

• Established framework of storage applications/use cases
  – 21 end uses / 7 use cases
    • Included voltage support and EV charging
      – Distinct types of storage considered from policy perspective

• Identified regulatory barriers to storage deployment
  – Lack of defined interconnection rules
  – Lack of cohesive regulatory process

• Preliminary cost-effectiveness analysis of selected use cases by EPRI & CEC-funded DNV KEMA studies

• Proceeding relied on collaboration among stakeholders: Utilities, storage industry, ratepayer advocates and NGOs
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;**
## Types of Energy Storage Systems

<table>
<thead>
<tr>
<th>Storage Grid Domains (Grid Interconnection Point)</th>
<th>Regulatory Function</th>
<th>Use-Case Examples</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Transmission Reliability (FERC)</td>
<td>(Stand-Alone Energy Storage) Ancillary Services, Peaker, Load Following</td>
</tr>
<tr>
<td><strong>Distribution-Connected</strong></td>
<td>Distribution Reliability</td>
<td>Substation Energy Storage (Deferral)</td>
</tr>
<tr>
<td></td>
<td>Generation/Market</td>
<td>Distributed Generation + Energy Storage</td>
</tr>
<tr>
<td></td>
<td>Dual-Use (Reliability &amp; Market)</td>
<td>Distributed Peaker</td>
</tr>
<tr>
<td><strong>Behind-the-Meter</strong></td>
<td>Customer-Sited Storage</td>
<td>Bill Mgt/Permanent Load Shifting, Power Quality, Electric Vehicle Charging</td>
</tr>
</tbody>
</table>
## Storage Procurement Targets

<table>
<thead>
<tr>
<th>Storage Grid Domain</th>
<th>Point of Interconnection</th>
<th>2014</th>
<th>2016</th>
<th>2018</th>
<th>2020</th>
<th>Total</th>
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<tbody>
<tr>
<td>SCE</td>
<td>Transmission</td>
<td>50</td>
<td>65</td>
<td>85</td>
<td>110</td>
<td>310</td>
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<tr>
<td>SCE</td>
<td>Distribution</td>
<td>30</td>
<td>40</td>
<td>50</td>
<td>65</td>
<td>185</td>
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<tr>
<td>SCE</td>
<td>Customer</td>
<td>10</td>
<td>15</td>
<td>25</td>
<td>35</td>
<td>85</td>
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<tr>
<td><strong>Subtotal SCE</strong></td>
<td></td>
<td>90</td>
<td>120</td>
<td>160</td>
<td>210</td>
<td>580</td>
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<tr>
<td>PG&amp;E</td>
<td>Transmission</td>
<td>50</td>
<td>65</td>
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<tr>
<td>SDG&amp;E</td>
<td>Transmission</td>
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<td>15</td>
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<tr>
<td>SDG&amp;E</td>
<td>Distribution</td>
<td>7</td>
<td>10</td>
<td>15</td>
<td>23</td>
<td>55</td>
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<tr>
<td>SDG&amp;E</td>
<td>Customer</td>
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<td>5</td>
<td>8</td>
<td>14</td>
<td>30</td>
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<tr>
<td><strong>Subtotal SDG&amp;E</strong></td>
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<td>20</td>
<td>30</td>
<td>45</td>
<td>70</td>
<td>165</td>
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<tr>
<td><strong>Total - all 3 utilities</strong></td>
<td></td>
<td>200</td>
<td>270</td>
<td>365</td>
<td>490</td>
<td>1,325</td>
</tr>
</tbody>
</table>
Flexibility Allowed in Meeting Targets (1)

- 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
Flexibility Allowed in Meeting Targets (2)

- Over-procurement in one year can be applied to subsequent solicitation

- Utility can shift up to 80% of targets between T & D grid domains
  - No shifting of target into or out of the customer-side domain

- No portion of the procurement targets can be traded among the utilities.
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
Additional Directives in the Decision

• Utility procurement applications due March 1, 2014 for first competitive solicitation to be held in December 2014
  - Proposed types of storage resources to be procured, including Quantities and Operational requirements
  - Proposed procurement details, including PPAs
  - Bid evaluation protocols

• Utility-owned storage limited to 50% of cumulative targets across all grid domains

• CPUC staff is ordered to conduct a comprehensive evaluation of the program in 2016 and 2019
Where we are now

• Utilities filed applications containing procurement plans on February 28th.
  – CPUC is currently reviewing applications and will consider additional stakeholder comments before approving.

• Pending approval of the procurement plans, the utilities will issue the first RFO in December 2014
Procurement in other proceedings

• **SCE Local Capacity Requirement RFO**
  - SCE issued RFO in late 2013
  - Number of distributed energy storage bids received
  - SCE will likely request approval for contracts in this summer
  - Monitoring best practices from this process for storage proceeding

• **NEM/Storage interconnection rules**
  - CPUC adopted new rules for storage paired with NEM facilities in May
    - Encourages customer-side storage paired with NEM facilities by allowing certain fee exemptions and a streamlining the interconnection process.
    - Establishes consistent rules across utility territories
Thank you!

For Additional Information:

www.cpuc.ca.gov

“energy storage” web page