
California's RPS Program: Key features and developments

CREPC/SPSC Webinar

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Webinar Outline

- Overview of California's RPS Program
- RPS Procurement Status and Programs
- New 33% RPS Procurement Framework
- RPS Planning Initiatives at the CPUC



Overview of California's RPS Program



RPS Program Background

A market-based program that requires all retail sellers of electricity to procure increasing amounts of renewable energy through 2020

- California's RPS program was established in statute in 2002
 - Senate Bill (SB) 1078 (Sher, 2002) **20% by 2017**;
 - SB 107 (Simitian, 2006) **20% by 2010**;
 - SB 2 (1X) (Simitian, 2011) **33% by 2020**
- RPS-obligated entities
 - CPUC regulates: Investor Owned Utilities (IOUs), Electric Service Providers (ESPs), Community Choice Aggregators (CCAs); and
 - CEC and CARB oversight and enforcement, respectively: Publically Owned Utilities (POUs)



SB 2 (1X) Statutory Goals

California's 33% RPS Law has Important, Broad Goals

1. Displacing fossil fuel consumption within the state.
2. Adding new electrical generating facilities in the transmission network within the Western Electricity Coordinating Council service area.
3. Reducing air pollution in the state.
4. Meeting the state's climate change goals by reducing emissions of greenhouse gases associated with electrical generation.
5. Promoting stable retail rates for electric service.
6. Meeting the state's need for a diversified and balanced energy generation portfolio.
7. Assistance with meeting the state's resource adequacy requirements.
8. Contributing to the safe and reliable operation of the electrical grid, including providing predictable electrical supply, voltage support, lower line losses, and congestion relief.
9. Implementing the state's transmission and land use planning activities related to development of eligible renewable energy resources.



RPS-Eligible Technologies

The California Energy Commission (CEC) determines what resources count towards RPS

- Biodiesel
- Biomass
- Conduit hydroelectric
- Digester gas
- Fuel cells using renewable fuels
- Geothermal
- Wind
- Landfill gas
- Municipal solid waste
- Ocean wave, ocean thermal, tidal current
- Photovoltaic
- Small hydroelectric (30 MW or less)
- Solar thermal electric
- Hydroelectric (incremental generation from efficiency improvements)

* Note: Effective March 28, 2012, the CEC temporarily suspended its guidelines that allow power plants to be certified as RPS-eligible if the power plants use pipeline biomethane to generate electricity. See CEC *Resolution No. 12-0328-3*.



What is the RPS Compliance Metric?

Retail Sellers procure renewable energy credits (RECs) which are created with each MWh of renewable energy

$$\text{RPS \%} = \frac{\text{RPS-Eligible Procurement (MWh)}}{\text{Total Retail Sales (MWh)}}$$



Achieving RPS Requires Coordination

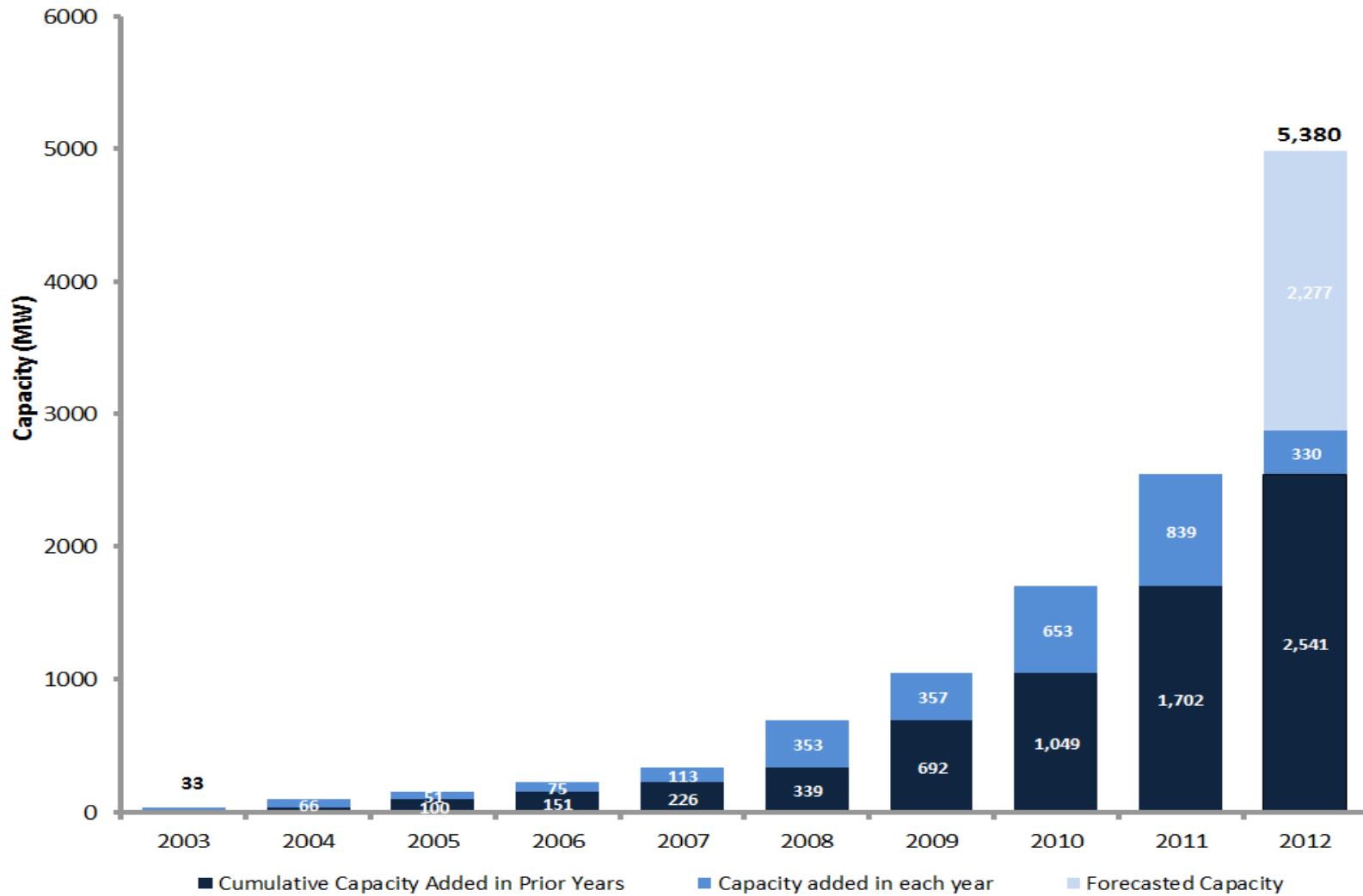
- CPUC is responsible for:
 - Approving annual RPS procurement plans and resulting RPS contracts for PG&E, SCE and SDG&E
 - Establishing RPS compliance targets and determining compliance for retail sellers
 - Approving California transmission projects
- California Energy Commission (CEC) is responsible for:
 - Certifying renewable generating facilities as RPS-eligible
 - Verifying the RPS-eligibility of energy procured to meet RPS targets
 - Overseeing Publicly Owned Utility RPS programs; works with ARB on enforcement
- CAISO
 - Real time grid management to accommodate variations in supply and demand
 - Generator interconnection processes (coordinate with IOUs on distribution interconnections)
 - Transmission planning (transmission for RPS may be “policy driven”)
 - Market operations (energy, ancillary services, congestion, etc)



RPS Procurement Status and Programs



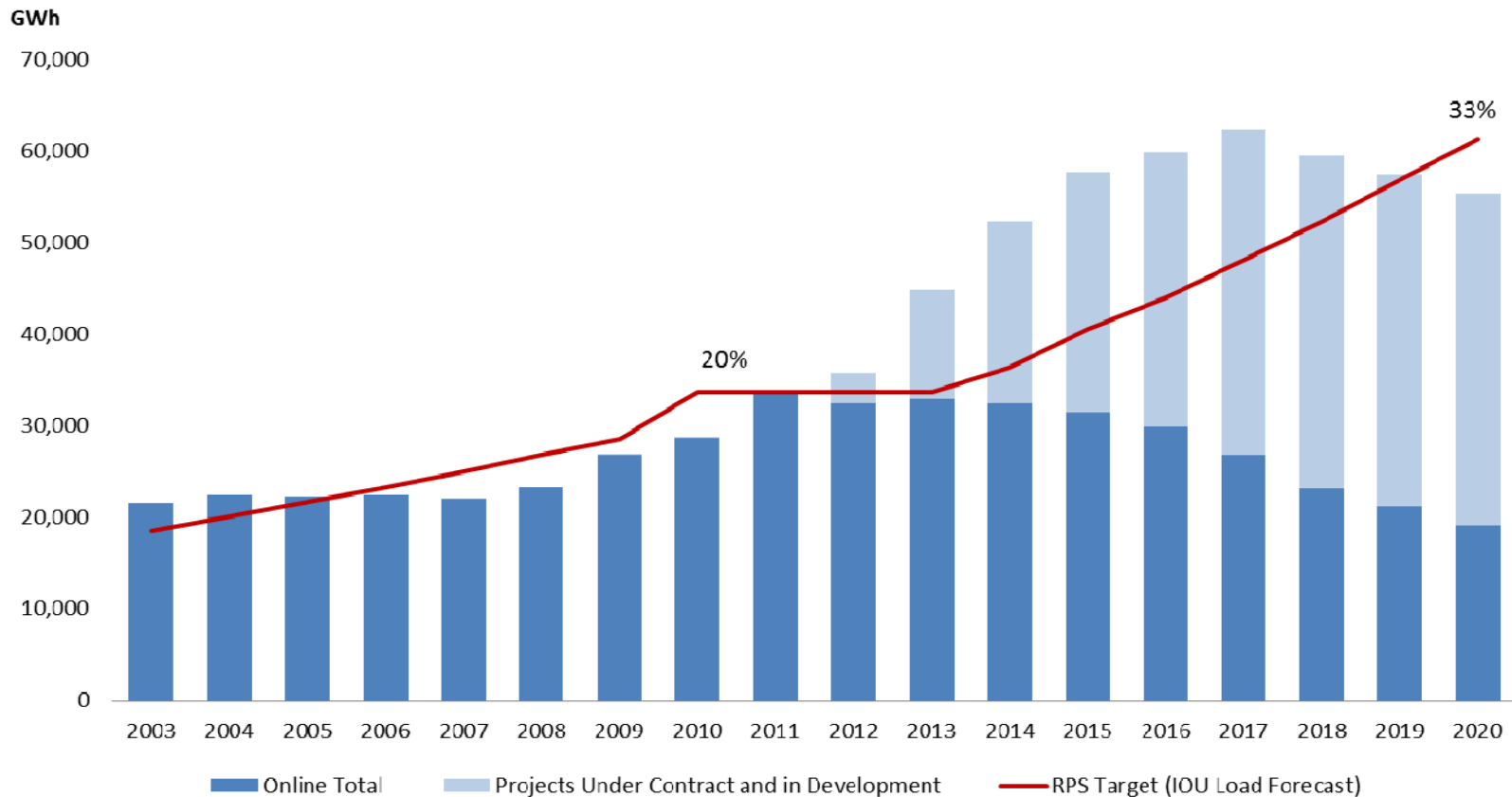
Installed RPS Capacity Contracted to IOUs



Source: California Public Utilities Commission, 1st quarter 2012

Forecast Compliance Position, Not Risk Adjusted

Contracted for RPS Projects Online and In Development

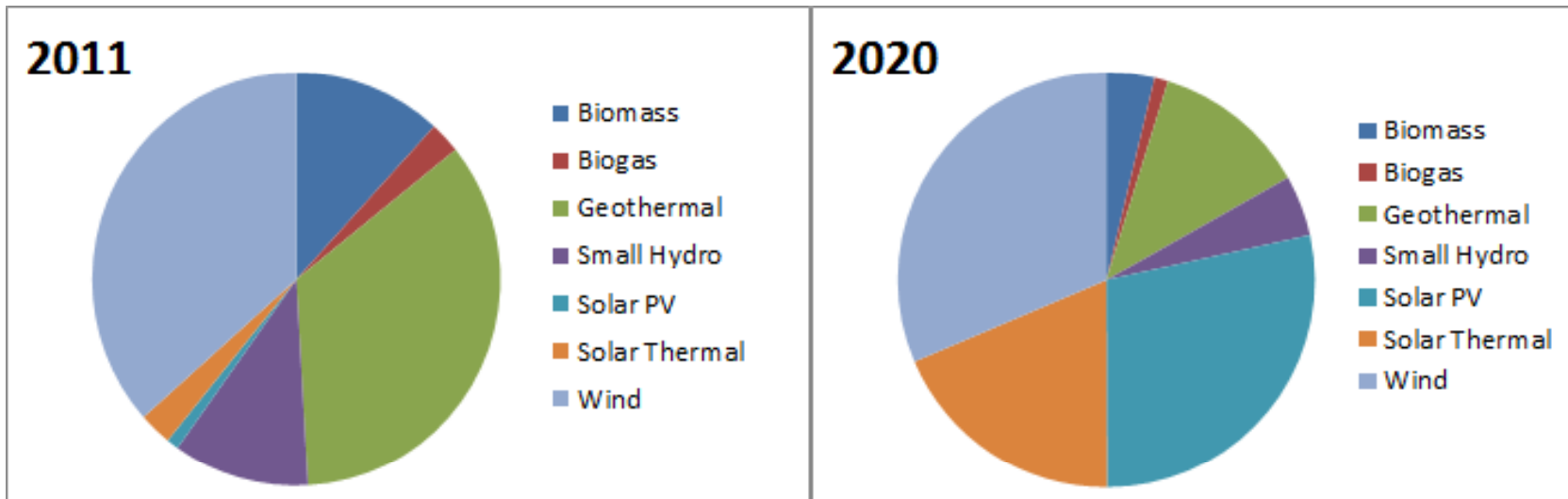


California Public Utilities Commission, May 2012

For planning purposes, the Commission assumes that less than 100% of contracted projects will achieve commercial operation

Current and Projected RPS Resource Mix (GWh)

Projects Under Contract with PG&E, SCE and SDG&E

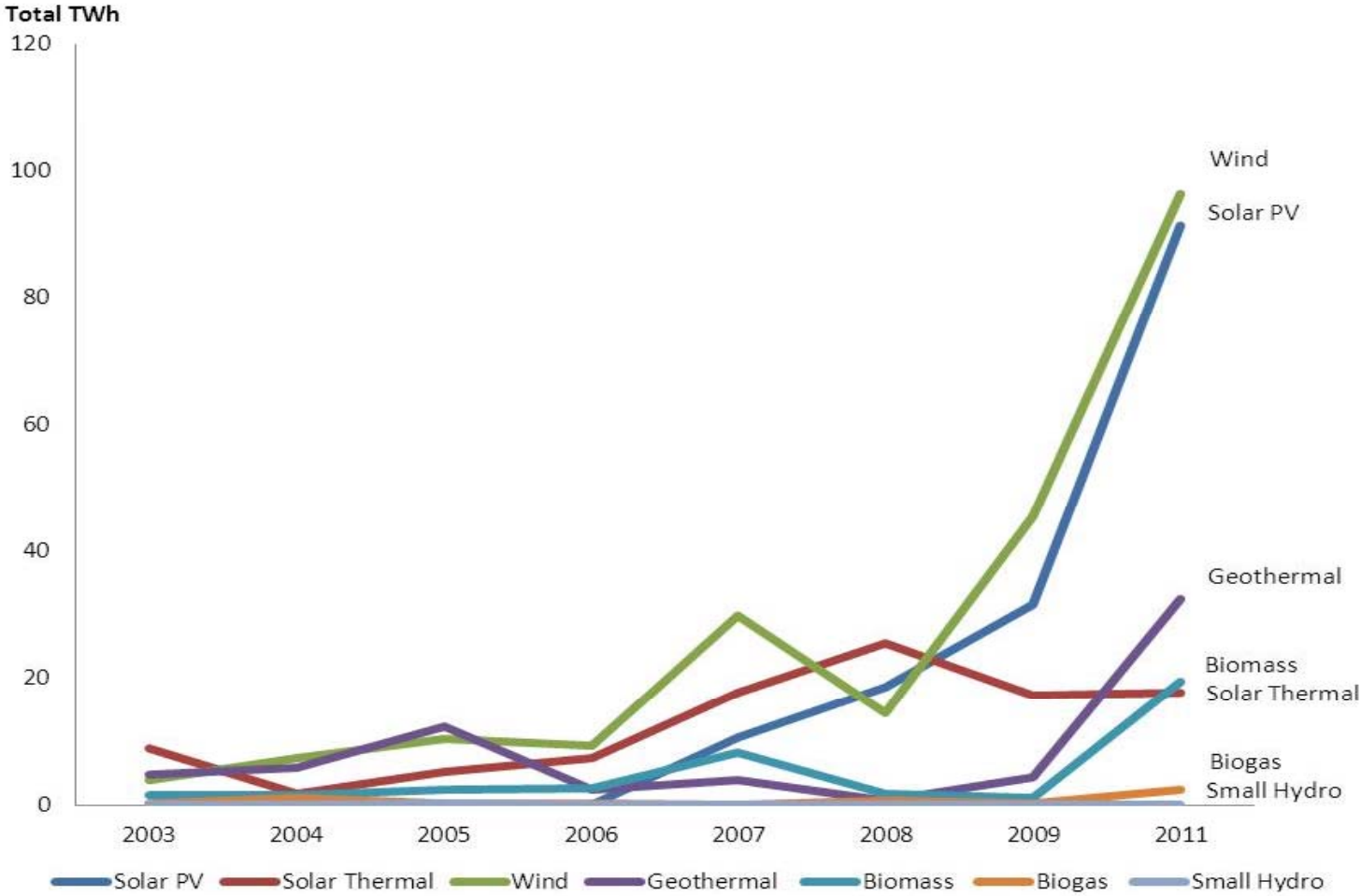


2011 Generation: Approximately 34,000 GWh

2020 Generation (forecast): Approximately 55,000 GWh

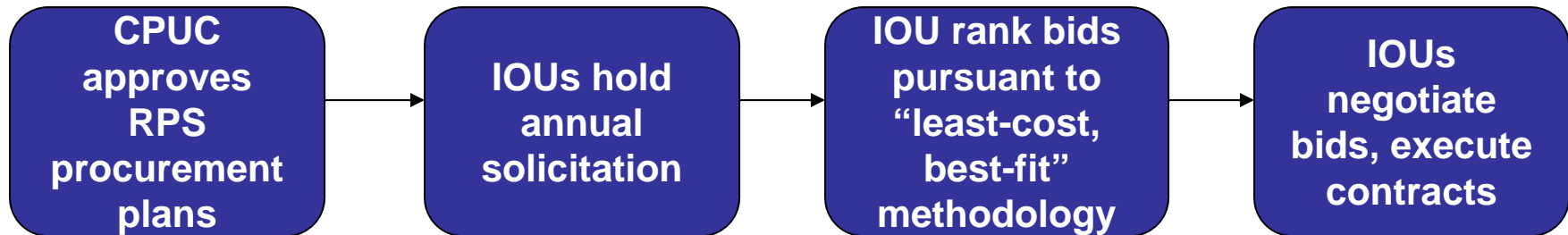


RPS Solicitation Resource Bids

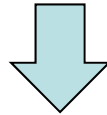


Source: California Public Utilities Commission, 4th Quarter 2011

RPS Procurement Process



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- Independent evaluator oversees solicitation, bid evaluation, and negotiations
 - IOUs discuss procurement options and decisions with a procurement review group made up on non-market participants



Once the IOU executes the contract, must submit to the CPUC for approval

RPS Procurement Programs

- Annual RPS Solicitation
 - All technologies and project sizes greater than one MW
 - Utility articulates the type of projects it is looking for
 - Negotiated contract terms and conditions
- Renewable Auction Mechanism
 - Projects sized 1 – 20 MW
 - 1,299 MW Program limit
 - 4 auctions over two year pilot program
 - Project of all technologies compete for contracts within three different categories: baseload, peaking and non-peaking
- Utility Solar PV Programs
 - Solar PV projects sized 1 – 20 MW
 - 776 MW program limit
- Feed-in Tariff
 - Projects sized 1 – 3 MW
 - 750 MW Program limit



New 33% RPS Procurement Framework



SB 2 (1X) (Simitian, 2011) Overhauls RPS

33% law balances the interests of numerous stakeholders

- Increases and extends California's RPS goal to not less than 33% by 2020
- Creates multi-year compliance periods (2011-2013; 2014-2016; (2017-2020) (§§ 399.15 (a),(b))
- Establishes three Portfolio Content Categories within which all new RPS procurement will be classified (§ 399.16)
- Requires new cost containment requirements that will establish a limitation on procurement expenditures to achieve RPS goals (§ 399.15(c))



Key CA RPS Market Rules are Established

- CPUC set long-term procurement quantity requirements (or RPS targets) increasing from 20% to 33% through 2020, and beyond (See § 399.15; D.11-12-020)
- CPUC implemented the RPS Portfolio Content Categories established in the 33% law (SB 2 (1X) (§ 399.16; D.11-12-052)
 - Includes all RPS-eligible facilities located within the Western Electricity Coordinating Council (WECC)
 - Three statutorily defined Portfolio Content Categories (or “buckets”) are differentiated by a project’s “impacts on the grid in supplying electricity, as well as, meeting the requirements” of the 33% RPS statute.
 - RECs associated with any contract or ownership agreement originally executed prior to June 1, 2010 is not subject to the portfolio content categories.



Portfolio Content Categories Characteristics (*high-level*)

RPS Facilities Within WECC May Produce Category 1, 2 or 3 RECs

- Category 1 procurement is:
 - Procurement of Energy and RECs delivered to a California balancing authority (CBA) without substituting electricity from another source
- Category 2 procurement is:
 - Procurement of Energy and RECs that cannot be delivered to a CBA without substituting electricity from another source
- Category 3 procurement is:
 - Procurement of unbundled RECs only, or RECs that do not meet the conditions for Category 1 and 2



RPS Category 1- Definition and Criteria

- Category 1 (§ 399.16(b)(1))
 - Energy and RECs from an RPS-eligible facility that is directly interconnected to the distribution or transmission grid within a California balancing authority area (CBA); or
 - Energy and RECs from an RPS-eligible facility, that is not directly interconnected to a CBA, but is delivered to a CBA without substituting electricity from another source; or
 - Energy and RECs dynamically transferred to a CBA
- Example
 - Wind facility in Washington state delivers Energy and RECs with firm or non-firm transmission according to an hourly or sub-hourly schedule
 - Biomass facility directly interconnected to CAISO delivers Energy and RECs



RPS Category 2 - Definition and Criteria

- Category 2 (§ 399.16(b)(2))
 - Buyer simultaneously purchases Energy and RECs from an RPS-eligible facility, where the energy must not be already committed to another party, without selling the energy back to the generator;
 - Renewable generation is firmed and shaped with substitute electricity that is scheduled into a CBA within the same calendar year as the RPS generation; and
 - Substitute electricity provides incremental electricity to the buyer.
- Example
 - Buyer procures Energy and RECs from Wind facility in Oregon; renewable Energy is firmed and shaped by third party; substitute electricity is delivered to buyer; RPS credit equals the volume of RECs generated by wind facility



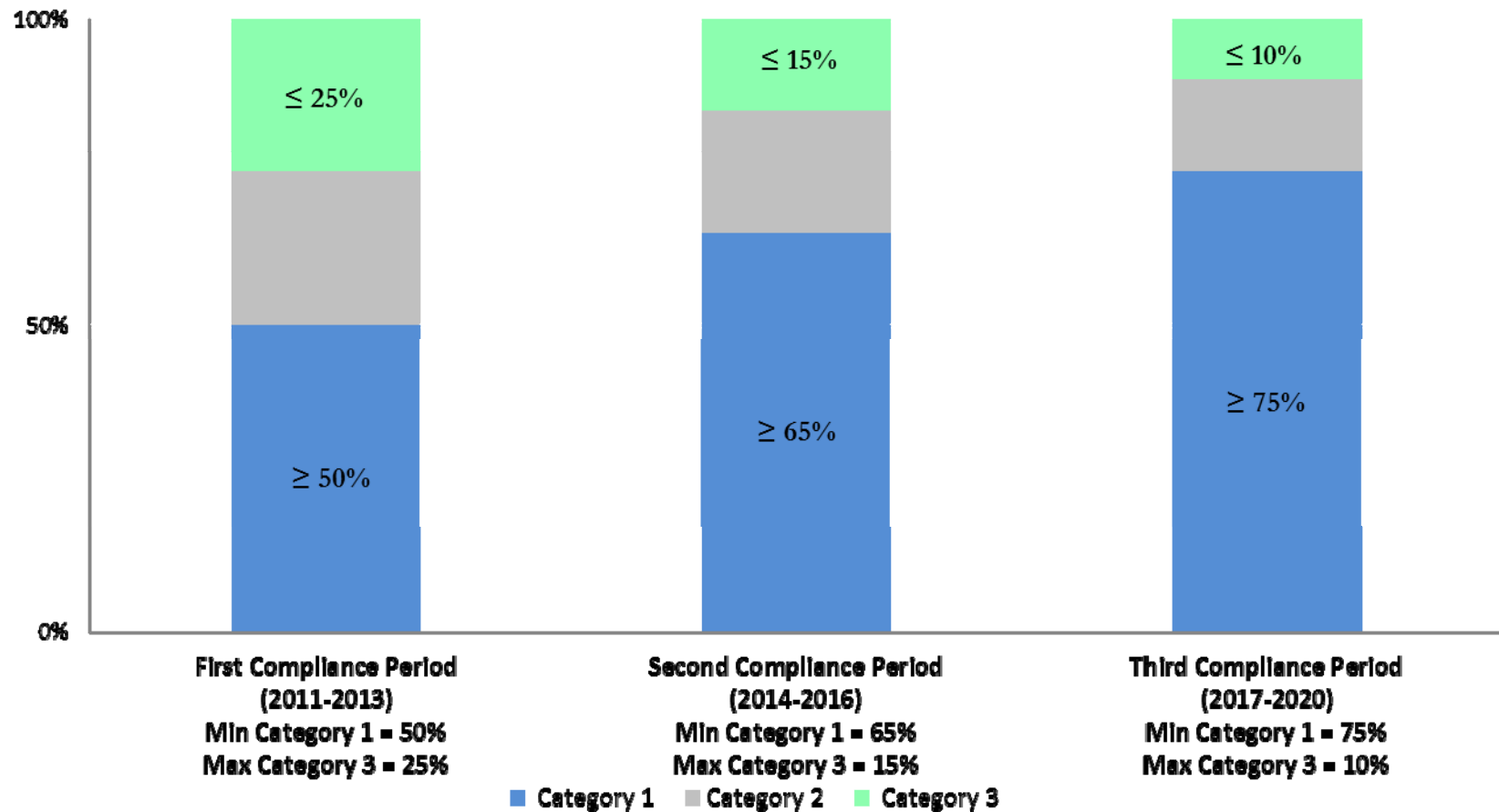
RPS Category 3 - Definition and Criteria

- Category 3 (§ 399.16(b)(3))
 - Unbundled RECs originally associated with generation from an RPS-eligible facility located in the WECC (i.e., no Energy procured);
 - Unbundled RECs that do not qualify under the criteria of Category 1 and 2.
- Example
 - Buyer procures unbundled RECs from RPS-eligible facility (could be from a wholesale generating facility or a customer-owned facility)
 - A Category 2, firmed and shaped transaction, where some of the substitute electricity is not scheduled in the calendar year of the RPS-eligible generation



Portfolio Content “Balance” Requirements

Pub. Util. Code 399.16(c) Sets Quantitative Procurement Limits



Planning Initiatives at the CPUC



Coordinated Planning Initiatives at the CPUC

- Through the RPS proceeding, CPUC authorizes RPS procurement for PG&E, SCE and SDG&E based on:
 - 10-year+ planning horizon
 - Assessment of current compliance position and delays in meeting RPS goals, including delays in permitting, interconnection and transmission
- Through the LTPP proceeding, CPUC evaluates electricity infrastructure needs within the CAISO
 - Identify the quantity and characteristics of new resources needed for reliability
 - Inform, and be informed by, other planning efforts (transmission, demand side management, RPS, etc)
 - Provide cost information at a system level perspective to inform decision-making.
- On June 12, RPS/LTPP staff are holding a workshop to discuss standardized methodologies to forecast a “CA Renewable Net Short” for California to meets RPS goals



More Information

- CPUC Website:
<http://www.cpuc.ca.gov/puc/>
- RPS Proceeding (R.11-05-005) and Program Information:
www.cpuc.ca.gov/renewables
- Long-Term Procurement Plan Proceeding (R.12-03-014):
www.cpuc.ca.gov/PUC/energy/Procurement/LTPP
- Resource Adequacy Proceeding (R.11-10-023)

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