



RENEWABLES PORTFOLIO STANDARD Quarterly Report



3rd Quarter 2016



I. ABOUT THE RPS AND THIS REPORT

California is aggressively bringing renewable generation online to meet its Renewables Portfolio Standard (RPS), one of the most ambitious renewable energy standards in the country.

California's RPS¹ requires retail sellers, investor-owned utilities (IOUs), electric service providers (ESPs) and community choice aggregators (CCAs) regulated by the California Public Utilities Commission (CPUC) to procure 33% of their annual retail sales from eligible renewable sources by 2020. Retail sellers must achieve interim RPS targets of 20% from 2011-2013 and 25% from 2014-2016. The CPUC and the California Energy Commission (CEC) are jointly responsible for implementing California's 33% RPS program. Senate Bill 350 (De León, 2015) revises the current RPS target to obtain 50% of total retail electricity sales from renewable resources by December 31, 2030, with interim targets of 40% by December 31, 2024, and 45% by December 31, 2027.

While the RPS program is the primary vehicle for new utility-scale renewable energy development in California, there are other programs that stimulate development of customer-side renewable generation. The California Solar Initiative (CSI) and Self-Generation Incentive Program (SGIP) provide incentives for customers to install renewable distributed generation technologies that directly serve their on-site load.² Electricity generated from power systems installed under CSI and SGIP may contribute to meeting RPS targets provided they meet eligibility requirements established by the CEC.³ In addition, electricity generated by these facilities indirectly contributes to the RPS by reducing demand when serving customer load.

Every quarter the CPUC issues an update on the RPS program as directed by the 2006 Budget Act Supplemental Report Item 8660-001-0462. The report focuses on California's three large IOUs, which provide approximately 68% of the state's electric retail sales: Pacific Gas and Electric Company (PG&E), Southern California Edison Company (SCE), and San Diego Gas & Electric Company (SDG&E).

¹ Codified in Public Utilities Code §§ 399.11 – 399.32, California's 20% RPS by 2020 was established in 2002 under Senate Bill (SB) 1078 (Sher) and modified in 2006 under SB 107 (Simitian). SB 2 of the First Extraordinary Session (SB 2 (1X)) (Simitian) (Stats. 2011, ch.1) expanded the mandate to a 33% RPS by 2020. SB 350 (De León) increased the mandate to 50% by 2030.

² More information on the CSI and SGIP can be found on the CPUC's website: <http://www.cpuc.ca.gov/PUC/energy/DistGen/>.

³ In the case of renewable customer generation, the system-owner owns the renewable energy credits (RECs), but could sell the RECs to retail sellers to contribute to their RPS targets.

II. EXECUTIVE SUMMARY

Status of RPS Procurement

- The Senate Bill (SB) 2 (1X) 2015 RPS procurement target is 23.3% of retail sales. On September 1, 2016 the large IOUs forecasted that they collectively served 27.6% of their retail electric load with RPS-eligible generation during 2015, exceeding the 2015 RPS procurement target.
- The second RPS compliance period (2014–2016) procurement requirement is approximately 23.3% of retail sales.⁴ The IOUs procured approximately 26% of retail sales in 2014, and anticipate procuring approximately 29% in 2015 and 31% in 2016.
- Since 2003, 14,214 MW of renewable capacity achieved commercial operation under the RPS program. In 2016, 1,622 MW of renewable capacity has reached commercial operation. An additional 1,367 MW of renewable capacity is forecasted to achieve its' commercial operation date (COD) in 2016, and an additional 874 MW is forecasted to achieve its' COD in 2017.

Highlights of Recent Events

- On April 15, 2016, the Commission issued a ruling to request comments on the implementation of SB 350. Specifically, the ruling requested stakeholder feedback on changes to the RPS procurement requirements (see below). The Commission will be issuing additional rulings that address the remaining RPS-related elements of SB 350 that need to be implemented.

New compliance periods for years after 2020 (Section 399.15(b)(1))

Changes to the procurement quantity requirements for the new compliance periods (Section 399.15(b)(2))

New requirements for RPS-eligible short- and long-term contracts and/or using utility-owned generation (UOG) or other ownership agreements for compliance periods after 2020 (Section 399.13(b))

Changes to excess procurement rules for all compliance periods beginning January 1, 2021 (Section 399.13(a)(4)(B))

Changes to the rules governing excess procurement related to early compliance with the new requirements for long term contracts (Section 399.13(a)(4)(B)(iii))

⁴During the second compliance period (2014-2016) the RPS obligation increases each year. In 2014 the Large IOUs must procure at least 21.7% of their retail sales from RPS eligible resources. The RPS procurement percentage increases to 23.3% in 2015 and 25.0% in 2016. Consequently, the average procurement percentage over second compliance period is approximately 23.3%.

- On June 22, 2016, the Commission issued a ruling to request stakeholder feedback on the IOUs' least-cost best-fit (LCBF) methodology for evaluation of RPS project bids. Energy Division staff developed a paper on LCBF reform that proposes a set of objectives, presents a draft work plan, and identifies a number of questions for party comment. This paper, "Energy Division Staff Paper on Least-Cost Best-Fit Reform" (June 6, 2016) (Staff Paper) was accepted into the record of R.15-02-020. Preliminary responses to Energy Division staff's questions were submitted on July 22, 2016, with additional reply comments received on August 9, 2016.
- On August 17, 2016, the Commission issued a ruling to request stakeholder feedback on two "trailer bills" relevant to the Bio-Market Adjusting Tariff (BioMAT) program. Specifically, as part of the budget process for 2016-2017, the Legislature proposed Senate Bill (SB) 840 and Assembly Bill (AB) 1612 which both contain identical language, proposing to add a new subsection (4) to Pub. Util. Code § 399.20(f). On August 22, 2016, the California Legislature approved SB 840 and the Governor signed the bill into law on September 13, 2016. The changes from the bill will change the eligibility criteria for projects characterized in Section 399.20(f)(2)(iii), i.e., "bioenergy using byproducts of sustainable forest management." The commission received comments on the ruling on August 24, 2016, and reply comments were submitted on August 31, 2016. The Commission will continue to work toward implementing the changes of SB 840 in the near future.

III. PROGRESS TOWARDS A 33% RPS BY 2020

California is aggressively procuring renewable generation to ensure that 33% of retail sales are met with renewable energy resources by 2020. Figure 1 below shows progress toward meeting that mandate, on a risk adjusted basis.⁵ The IOUs reported meeting the 20% requirement for 2011-13 in their 2016 Final 33% RPS Compliance Reports.^{6,7} These reports forecast that the IOUs are on track to meet the RPS requirement of 25% renewables by 2016 and are well-positioned to meet the 33% requirement by 2020.

Figure 1 on the next page forecasts a surplus of renewable generation for 2014-16 and a deficit for 2017-20. It is important to note that the IOUs have the option to apply excess procurement in 2011-13 and 2014-16 RPS procurement toward meeting RPS obligations in 2017-20 or beyond.

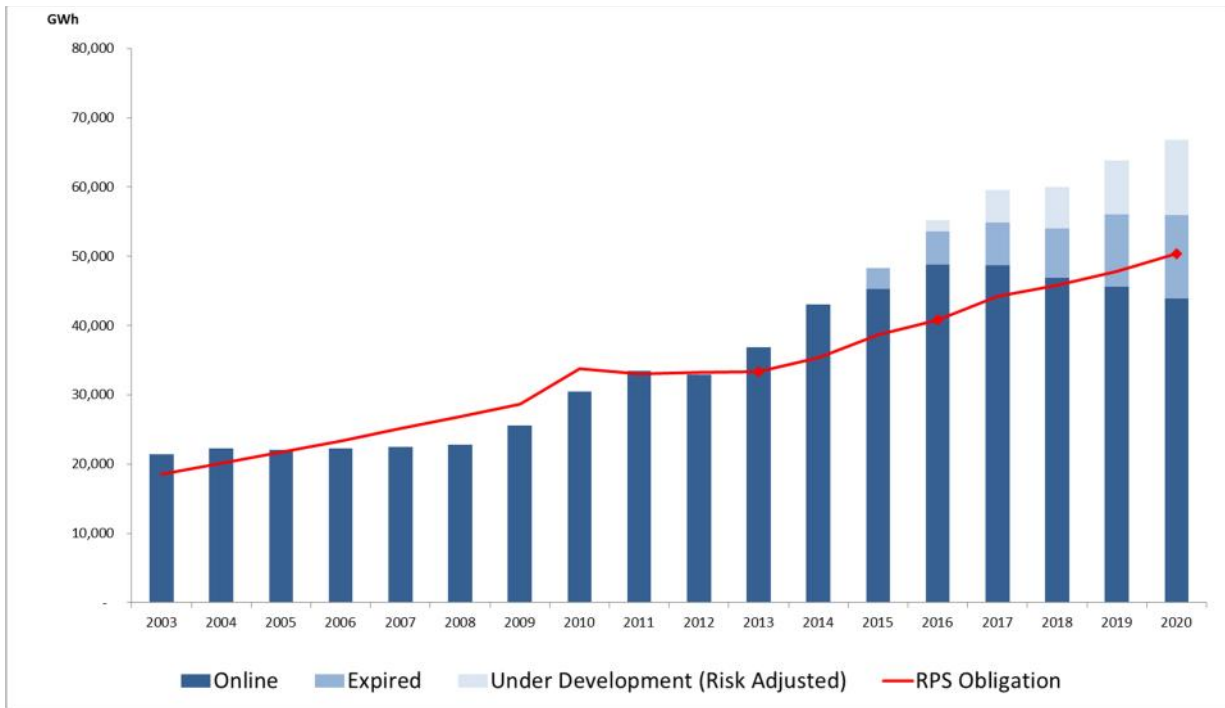
⁵ Values are risk adjusted to account for a certain degree of project failure. Failure rate assumptions are provided by the IOUs in their renewable net short calculation provided with the Annual 33% RPS Compliance Report submitted on September 1, 2016.

⁶ The California Energy Commission (CEC) is responsible for verifying RPS procurement claims for each compliance period.

⁷ The CPUC uses the CEC's verification analysis to make a final determination of retail sellers' RPS compliance positions. The CPUC will use the 2016 Final RPS Compliance Reports to make a determination of the IOUs' RPS Compliance in the first compliance period in Q4 2016.

Given that the CPUC is in the process of implementing the new RPS compliance period procurement targets, this report only presents the status of the large IOUs progress in achieving 33% RPS in 2020.⁸

Figure 1: IOU progress towards 33% renewables, actual and forecasted by year^{9, 10, 11 12}



⁸ SB 350 (DeLeon, 2015) adds three new compliance periods to the RPS program, i.e., 2021-2024, 2025-2027 and 2028-2030. Additionally, SB 350 increases the required RPS procurement percentage from 33% in 2020 to 50% in 2030. These new rules for the RPS program will be implemented in the RPS proceeding, i.e., Rulemaking (R.)15-02-020, in 2016.

⁹ Data Source: 2003-2010 data sourced from the Final 20% RPS Closing Report (January 2014); 2011-2020 data sourced from the Annual 33% Compliance Reports (September 2016).

¹⁰ The RPS obligation varies to reflect the targets defined in SB 2 (1X); 20% by December 31, 2013, 25% by December 31, 2016 and 33% by 2020.

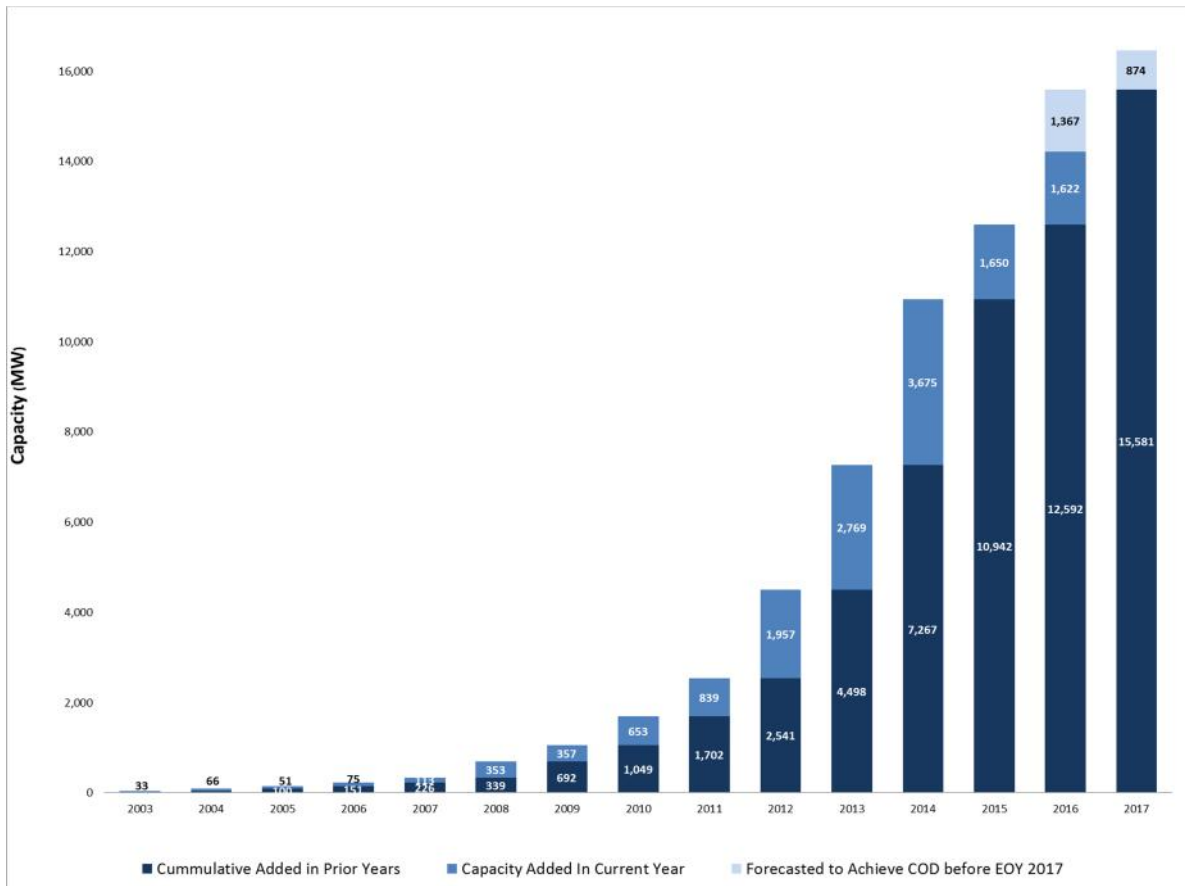
¹¹ The “Expired” field in this chart represents the amount of generation associated with facilities that no longer have a PPA with one of the Large IOUs. Although this generation is not under contract there is a high likelihood that one of the Large IOUs will re-contract with these facilities.

¹² Energy Division staff have not included projected obligations for 2021-2030 in this chart since the Commission has not yet implemented RPS requirements for the 50% RPS program.

CPUC APPROVED RENEWABLE CAPACITY ADDED IN 2015

Since 2003, 14,214 MW of renewable capacity achieved commercial operation under the RPS program. In 2016, 1,622 MW of renewable capacity has reached commercial operation. An additional 1,367 MW of renewable capacity is forecasted to achieve its' commercial operation date (COD) in 2016.

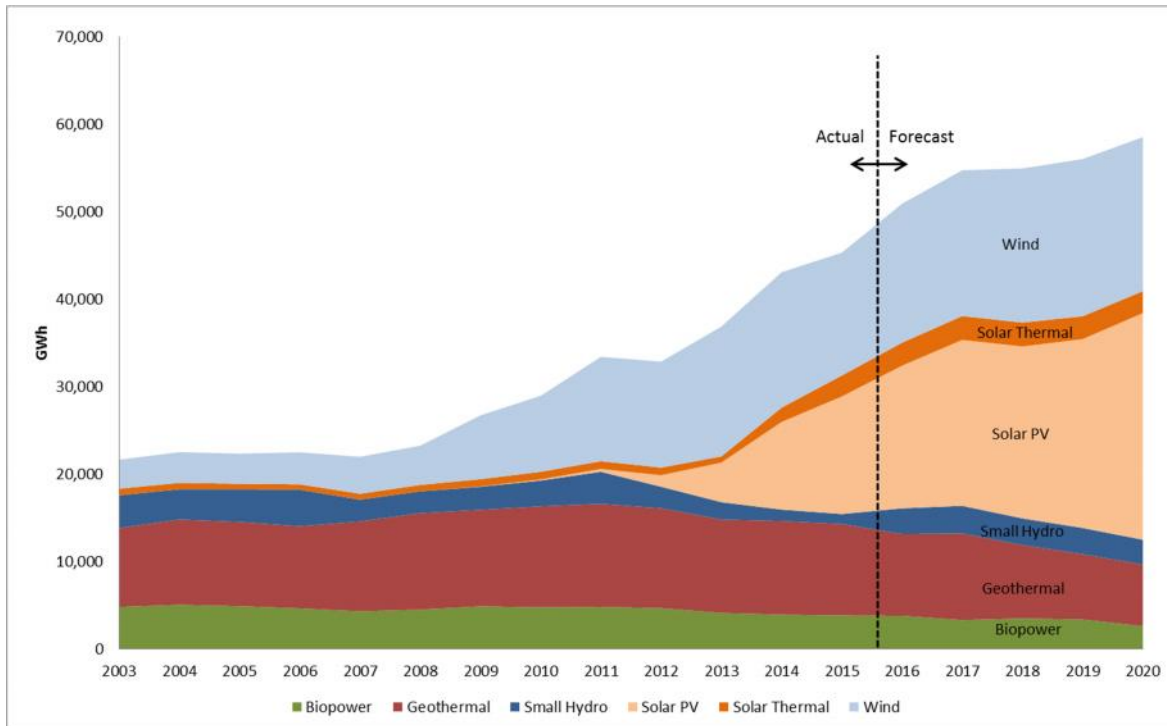
Figure 2: RPS capacity installed since 2003 by year



RPS RENEWABLE RESOURCE MIX

The mix of technologies bidding into and receiving power purchase agreements (PPAs) through RPS solicitations has shifted over the life of the RPS program. In 2015, wind contributed 31% and solar PV contributed 29.7%, supplying the majority of California's renewable generation. The generation mix in 2020 is expected to reflect a considerable increase in generation from new solar PV. Solar PV and solar thermal generating facilities are forecasted to contribute 44.3% and 4.3%, respectively, of the state's total renewable generation by 2020. The figure below displays California's actual and forecasted mix of renewable generation by technology type through 2020.

Figure 3: Renewable resource mix, actual and forecasted by year¹³



Biopower is a combination of all biomass and biogas procurement.

¹³ Data Source: IOUs' Annual 33% Compliance Reports (September 1, 2016). Figure 3 only depicts existing IOU renewable contracts. It does not account for facilities that may be online and may receive new contracts after their current contracts expire.

RPS CONTRACTING ACTIVITIES IN 2015

Since 2002, the CPUC has approved more than 436 RPS PPAs for over 23,705 MW of renewable capacity. As Table 1 below shows, the CPUC approved four additional contracts in the third quarter of 2016, representing 573 MW of RPS capacity.

Table 1: IOU RPS-eligible Advice Letters submitted and/or approved in 2015 ^{14,15,16,17}

| | | PGE | | SCE | | SDGE | | Total | |
|----|-----------|---------------------------|----|---------------------------|-------|---------------------------|----|---------------------------|-------|
| | | Number of Contracts | MW | Number of Contracts | MW | Number of Contracts | MW | Number of Contracts | MW |
| Q1 | Submitted | 2 | 0 | 7 | 546 | 3 | 20 | 12 | 566 |
| | Pending | 1 | 0 | 8 | 1,218 | 2 | 20 | 11 | 1,238 |
| | Approved | 2 | 0 | 6 | 456 | 2 | 0 | 10 | 456 |
| Q2 | Submitted | 2 | 0 | 1 | 0 | 1 | 0 | 4 | 0 |
| | Pending | 0 | 0 | 3 | 573 | 1 | 0 | 4 | 573 |
| | Approved | 3 | 0 | 6 | 645 | 2 | 20 | 11 | 665 |
| Q3 | Submitted | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| | Pending | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| | Approved | 0 | 0 | 3 | 573 | 1 | 0 | 4 | 573 |

¹⁴ Data Source: IOU submissions to the RPS Contract Database (September 15, 2016)

¹⁵ In Q1 PG&E, SCE and SDG&E each submitted an Advice Letter to modify specific components of their Renewable Auction Mechanism (RAM) Program for the sixth RAM Solicitation. These Advice Letters did not have any capacity value associated with them.

¹⁶ “Submitted” refers to the number of RPS contracts that were filed to the CPUC in a given quarter. “Pending” refers to how many advice letters were awaiting approval at the end of a given quarter.

¹⁷ In the Q2 RPS Quarterly Report to the Legislature, Energy Division staff reported that the as of the second quarter had approved 14 contracts for a total of 1140 MW. While reviewing the IOUs’ updated data for Q3, Energy Division noticed some errors in the Q1 and Q2 figures. Energy Division staff have corrected the errors and the figures for Q1 and Q2 in this report.

IV. RECENT AND UPCOMING EVENTS

| Timing | Deliverable | Notes |
|--------------------|---|---|
| June 22, 2016 | LCBF Ruling | Ruling to initiate reform of least cost best fit (LCBF) methodology used by utilities to evaluate and rank RPS bids. |
| August 17, 2016 | BioMAT Ruling | Administrative Law Judge's Ruling requesting comment on implementation of potential legislative changes related to the bioenergy feed-in tariff under the California Renewables Portfolio Standard and taking official notice of documents. |
| August 24, 2016 | RPS Calculator Portfolios Ruling | Administrative Law Judge's ruling that accepts 2016 RPS portfolios into the record for use in generation and transmission planning, i.e., the RPS Calculator. |
| September 1, 2016 | Determination of Retail Seller RPS Compliance for the first compliance period (2011-13) | On August 2, 2016, the CEC transmitted their Final RPS 2011-2013 Retail Sellers Verification Report to the CPUC. Consequently, all retail sellers were required to submit an RPS Compliance Report Spreadsheet, and any additional information required to substantiate RPS portfolio content category classification claims for years 2011-2013, on or before September 1, 2016. |
| September 26, 2016 | IRP Workshop | On Monday, September 26th, 2016, CPUC Staff will host a Workshop on Options for Implementing the CPUC Integrated Resource Planning (IRP) Process. |
| October 2016 | Determination of Retail Seller compliance for the first compliance period (2011-13) | Energy Division staff will review the 2016 Final RPS Compliance Reports that were submitted on September 1, 2016, and determine which retail sellers were able to meet the RPS requirement of the first compliance period (2011-13). Energy Division staff will notify retail sellers of their RPS compliance status for the first compliance period once the review process is complete. |