



# 2021 CALIFORNIA RENEWABLES PORTFOLIO STANDARD

Annual Report

---

NOVEMBER 2021



California Public  
Utilities Commission

A digital copy of this report can be found at:

<https://www.cpuc.ca.gov/industries-and-topics/electrical-energy/energy-reports-and-whitepapers/rps-reports-and-data>

Contributors:

Brent Tarnow – Analyst  
Michael Baltar – Analyst  
Cheryl Cox - Analyst  
Amanda Singh – Analyst  
Mallory Albright – Analyst

Cheryl Lee – Supervisor, Renewable Procurement and Market Development Section  
Judith Iklé – Program Manager, Procurement Strategy and Oversight, Energy Division

# Contents

EXECUTIVE SUMMARY .....	7
I. BACKGROUND .....	9
Legislative History.....	9
California's RPS Program .....	9
II. RPS PROGRESS AND STATUS .....	10
Current Renewable Portfolios.....	10
Small and Multi-Jurisdictional Utilities (SMJUs) .....	13
Community Choice Aggregators (CCAs) .....	14
Electric Service Providers (ESPs) .....	18
Renewable Technology Mix.....	19
Large Investor-Owned Utilities (IOUs) .....	19
Small and Multi-Jurisdictional Utilities (SMJUs) .....	20
Community Choice Aggregators (CCAs) .....	20
Electric Service Providers (ESPs) .....	22
Contracted Renewable Capacity .....	23
RPS Procurement Costs .....	23
III. RENEWABLE PROCUREMENT AND PROJECT DEVELOPMENT .....	26
Contracting and New Projects in Development.....	26
Large Investor-Owned Utilities (IOUs) .....	26
Small and Multi-Jurisdictional Utilities (SMJUs) .....	27
Community Choice Aggregators (CCAs) .....	28
Electric Service Providers (ESPs) .....	31
Progress in Long-Term Contracting .....	32
IV. COMPLIANCE AND ENFORCEMENT .....	36
Annual Compliance Reviews.....	36
V. 2020 RPS PROGRAM ACTIVITIES .....	40
Implementation of SB 100 .....	40
Integrated Resource Planning and RPS Alignment.....	40
Additional Mandated RPS Procurement Activities.....	41
Feed-in Tariff Programs .....	41
Interagency Program Planning and Coordination .....	44
Compliance and Enforcement .....	44
Bioenergy Issues and Forest Management .....	44
Offshore Wind Task Force and Marine Renewable Energy Working Group .....	45
Transmission Development Supporting RPS Implementation .....	45
VI. RPS WORKFORCE DEVELOPMENT AND DIVERSITY.....	48
IOU Workforce Development.....	48
Current IOU RPS Workforce.....	48

2021 CALIFORNIA RENEWABLES PORTFOLIO STANDARD ANNUAL REPORT

Current IOU RPS Workforce Diversity .....	49
Recruiting Strategies.....	52
SMJU Workforce Development .....	57
Bear Valley Electric Service.....	57
Liberty Utilities .....	58
PacifiCorp .....	59
CCA Workforce Development.....	59
ESP Workforce Development.....	61
VII. RPS CHALLENGES AND POLICY RECOMMENDATIONS.....	62
Challenge 1: Risk Assessments by Retail Sellers .....	62
Challenge 2: Evolution of Procurement Planning.....	63
Challenge 3: Bioenergy .....	64
APPENDICES .....	66
Appendix A – About the RPS Program .....	66
How the RPS Program Works.....	66
Portfolio Balance Requirement Rules .....	66
RPS Excess Procurement Rules.....	67
RPS Compliance Requirements .....	68
Appendix B – How RPS Compliance Works .....	69
CPUC Compliance Determinations .....	70
Enforcement .....	70
Appendix C – Glossary of Acronyms and Terms.....	72
Appendix D – California's Active Load Serving Entities .....	74
Appendix E – Public Utilities Code Section 913.4 .....	75
Appendix F – Summary of Accomplishments from January 2020 – October 2021	76

# Tables & Figures

<b>Figure 1:</b> Aggregated Retail Seller Progress Towards 60% RPS (2017-2030) .....	8
<b>Table 1:</b> Actual 2020 Large IOU RPS Procurement Percentages .....	9
<b>Figure 2:</b> Aggregated Large IOU Progress Towards 60% RPS (2017-2030) .....	10
<b>Table 2:</b> Aggregated Actual and Forecasted Large IOUs RPS Percentages for Pacific Gas and Electric, Southern California Edison, and San Diego Gas & Electric .....	11
<b>Figure 3:</b> Aggregated SMJU Progress Towards 60% RPS (2017-2030) .....	12
<b>Table 3:</b> Aggregated Actual and Forecasted SMJU RPS Percentages for Bear Valley Electric Service, Liberty Utilities, and PacifiCorp.....	12
<b>Table 4:</b> Aggregated Actual and Forecasted CCA RPS Percentages .....	13
<b>Figure 4:</b> Aggregated CCA Progress Towards 60% RPS (2017-2030).....	14
<b>Table 5:</b> Annual RPS Positions of CCAs (%).....	15
<b>Table 6:</b> Aggregated Actual and Forecasted ESP RPS Percentages.....	16
<b>Figure 5:</b> Aggregated ESP Progress Towards 60% RPS (2017-2030) .....	17
<b>Table 7:</b> Portfolio Percentages of 2020 RPS Mix for Large IOUs.....	18
<b>Table 8:</b> Portfolio Percentages of 2020 RPS Mix for SMJUs .....	18
<b>Table 9:</b> Portfolio Percentages of 2020 RPS Mix for CCAs .....	19
<b>Table 10:</b> Portfolio Percentages 2020 RPS Mix for ESPs.....	20
<b>Figure 6:</b> CPUC Approved Large IOU RPS Capacity Additions (2003-2020) .....	21
<b>Figure 7:</b> Historical Trend of All Load Serving Entities' RPS Contract Costs .....	22
<b>Table 11:</b> Large IOU BioMAT Contracts Executed.....	24
<b>Table 12:</b> Large IOU REC Sales Contracts Approved by the CPUC.....	24
<b>Figure 8:</b> Aggregated IOU Excess Procurement Bank Before and After REC Sales .....	25
<b>Table 13:</b> New California Renewables Projects with CCA Contracts with COD 2020-2021 .....	26
<b>Table 14:</b> New California Renewables Projects with CCA Contracts with COD 2022-2023.....	27
<b>Table 15:</b> New Out-of-State Renewables Projects with CCA Contracts with COD 2020-2022.....	27
<b>Table 16:</b> New Long-term Renewables Projects with ESP Contracts .....	28
<b>Table 17:</b> Disadvantaged Communities Considerations in LCBF for CCAs.....	30
<b>Figure 9:</b> New RPS Projects Contracted by CCAs and ESPs.....	31
<b>Table 18:</b> IOU and SMJU Forecasted Percentage of Long-Term Requirements Met .....	32
<b>Table 19:</b> Forecasted Percentage of CCA Long-Term Requirements Met .....	33
<b>Table 20:</b> Forecasted ESP Percentage of Long-Term Requirements Met.....	34
<b>Table 21:</b> IOU and SMJU Annual Compliance Review .....	40
<b>Table 22:</b> CCA Annual Compliance Review.....	41
<b>Table 23:</b> ESP Annual Compliance Review.....	42
<b>Table 24:</b> BioMAT Mandated Allocation Summary.....	45
<b>Figure 10:</b> BioMAT Progress by Category.....	46
<b>Table 25:</b> IOU BioRAM Contract Summary.....	47
<b>Table 26:</b> High Hazard Zone (HHZ) Forest Fuel Usage from BioRAM Contracts .....	48
<b>Table 27:</b> Total RPS Employees at Large IOUs .....	53
<b>Figure 11:</b> Full-Time RPS Employees at Large Investor-Owned Utilities (2013-2020).....	54
<b>Figure 12:</b> Full-Time RPS Employees at Large Investor-Owned Utilities (2013-2020) .....	55
<b>Table 28:</b> Pacific Gas and Electric's Women, Minority, and Veteran RPS Employees (2013-2020).....	55

**Table 29:** Pacific Gas and Electric’s Ethnic and Racial Background of RPS Employees (2019-2020) .....56

**Table 30:** Pacific Gas and Electric’s Women RPS Employees Workforce Development Level (2019-2020) .....56

**Table 31:** Pacific Gas and Electric’s Ethnic Minorities RPS Employees Workforce Development Level, 2019-2020 .....56

**Table 32:** Southern California Edison’s Women, Minority, and Disabled Veteran RPS Employees, 2013-2020.....57

**Table 33:** Southern California Edison’s Ethnic and Racial Background of RPS Employees from 2019-2020.....57

**Table 34:** Southern California Edison’s Women RPS Employees Workforce Development Level from 2019-2020 .....58

**Table 35:** Southern California Edison’s Ethnic Minorities RPS Employees Workforce Development Level from 2019-2020 .....58

**Table 36:** San Diego Gas & Electric’s Women, Minority, and Disabled Veteran RPS Employees from 2013-2020.....59

**Table 37:** San Diego Gas & Electric’s Ethnic and Racial Background of RPS Employees from 2019-2020 .....59

**Table 38:** San Diego Gas & Electric’s Women RPS Employees Workforce Development Level from 2019-2020 .....60

**Table 39:** San Diego Gas & Electric’s Ethnic Minorities RPS Employees Workforce Development Level from 2019-2020 .....60

**Table 40:** Total RPS Employees at Small and Multi-Jurisdictional Utilities .....64

**Table 41:** Number of Women, Minority, and Veteran RPS Employees from 2017-2020 Employed at SMJUs .....64

**Table 42:** Bear Valley Electric Service’s Ethnic and Racial Background of RPS Employees from 2019-2020.....65

**Table 43:** Bear Valley Electric Service’s Women RPS Employees Workforce Development Level from 2019-2020 .....65

**Table 44:** Bear Valley Electric Service’s Ethnic Minorities RPS Employees Workforce Development Level from 2019-2020.....65

**Table 45:** Liberty Utilities’ Ethnic and Racial Background of RPS Employees from 2019-2020 .....66

**Table 46:** Liberty Utilities’ Women RPS Employees Workforce Development Level from 2019-2020...66

**Table 47:** Liberty Utilities’ Ethnic Minorities RPS Employees Workforce Development Level from 2019-2020 .....67

**Table 48:** Total Number of CCA RPS Employees (2018-2020) .....68

**Table 49:** Total Number of Women, Minority, and Disabled Veterans RPS Employees from 2018 – 2020 Employed at CCAs.....69

**Table 50:** Total Number of ESP RPS Employees (2019-2020).....77

# Executive Summary

In compliance with Senate Bill (SB) 1222<sup>1</sup> (Hertzberg, 2016), the California Public Utilities Commission (CPUC) reports to the Legislature each year on the progress of the Renewables Portfolio Standard (RPS) program. This report describes the progress of the State's electricity retail sellers<sup>2</sup> in complying with the RPS program for 2020. Although 2020 is the final year of the 2017-2020 compliance period, this report does not include any reporting of compliance determinations. Final compliance determinations are made after the California Energy Commission (CEC) certifies retail sellers' renewable energy credits (RECs) and the CPUC finishes its compliance review.

## 1. California's Electricity Retail Sellers are Generally Meeting Annual RPS Targets<sup>3</sup>

- Most of the retail sellers report procuring at or above the 33 percent RPS annual target for 2020.<sup>4</sup>
- The large Investor-Owned Utilities (IOUs) and Small and Multi-Jurisdictional Utilities (SMJUs) have executed renewable electricity contracts necessary to exceed the annual 2020 RPS target of 33 percent.
- Most Community Choice Aggregators (CCAs) and Electric Service Providers (ESPs) have executed enough renewable electricity contracts to meet or exceed the annual 2020 RPS target.<sup>5</sup>

## 2. Community Choice Aggregators (CCAs) and Electric Service Providers (ESPs) Must Increase Renewable Procurement to Meet Long-Term RPS Requirements

- The IOUs and SMJUs all report enough planned procurement to meet the 65 percent long-term procurement requirement for the 2021-2024 compliance period. However, all of the SMJUs must procure additional resources to meet their 40% RPS requirement for the 2021-2024 compliance period.
- Nineteen of the twenty-nine CCAs that plan to serve load in the 2021–2024 compliance period and beyond have already executed long-term contracts to procure at or above the 65 percent requirement.<sup>6</sup>
- Only four of the ten ESPs that plan to serve load in the 2021–2024 compliance period and beyond have executed long-term contracts to procure at or above the 65 percent requirement.
- Nineteen CCAs and six ESPs were notified by the CPUC that their RPS compliance reports show a risk of not meeting RPS requirements in the current or next compliance period based on a compliance risk analysis of their procurement quantities and/or progress toward the long-term contracting requirement.

<sup>1</sup> As codified in Public Utilities Code § 913.4. See Appendix C for full text of § 913.4.

<sup>2</sup> See Appendix C for full list of active retail sellers.

<sup>3</sup> The CPUC and California Energy Commission (CEC) are currently reviewing retail sellers' compliance filings to make final determinations for the 2017-2020 compliance period.

<sup>4</sup> Based on preliminary 2020 Annual Compliance Report filings submitted to the CPUC in August 2021.

<sup>5</sup> Based on the most recent Renewable Net Short (RNS) calculations and RPS Compliance Reports. RNS is defined as the amount of additional renewable generation necessary to meet or exceed RPS requirements. The calculations are submitted to the CPUC in the retail sellers' Annual RPS Procurement Plans.

<sup>6</sup> SB 350 established the long-term contracting requirements for the RPS program and applies to all retail sellers beginning in Compliance Period 2021–2024. For more information, see Chapter III.

### 3. 2020 RPS Prices For New Contracts Increased and Portfolio Shows Additional Solar Procurement

- The average RPS eligible energy contract price had dropped an average of 13 percent per year from 2007 to 2019, but the average RPS contract price increased to \$35/MWh in 2020 from \$28/MWh in 2019. This increase is the result of the combination of fewer RPS contracts being executed in 2020 as compared to previous years, and the fact that a higher percentage of those contracts that were executed were more expensive contracts from diversified technologies such as bioenergy, geothermal, small hydro, and wind. The historic downward contract price decline is expected to continue because lower priced solar PV contracts are expected to continue to be a dominant portion of retail sellers' future executed RPS contracts.
- Approximately 79 percent of retail sellers' renewables portfolios were comprised of solar and wind resources in 2020.
- Of the 6,900 MW of renewables in development contracted by CCAs and ESPs, 88 percent are solar PV facilities.<sup>7</sup>

---

<sup>7</sup> See Tables 13–16 in Chapter III for a list of projects in development.

# I. Background

The California Public Utilities Commission (CPUC) reports to the Legislature each November on the progress of California’s electricity retail sellers in meeting the RPS requirements. This report complies with Public Utilities Code 913.4 sub-sections:

- (a) Progress on RPS procurement activities;
- (b) Details on RPS activities and implementation;
- (c) Projected ability to meet RPS under cost limitations;
- (d) Status of RPS plans, activities, procurement, and transmission;
- (e) Barriers and policy recommendations to achieving the RPS; and
- (f) Efforts of electrical corporations related to workforce development, training, and diversity.

## Legislative History

---

The California RPS program was established in 2002 by Senate Bill (SB) 1078 (Sher, 2002) with the initial requirement that 20 percent of electricity retail sales must be served by renewable resources by 2017. The program was accelerated in 2006 under SB 107 (Simitian, 2006), which required that the 20 percent mandate be met by 2010. In April 2011, SB 2 (1X) (Simitian, 2011) codified achievement of the 33 percent RPS requirement by 2020. In 2015, Governor Brown signed into law SB 350 (de León, 2015), which mandated a 50 percent RPS by December 31, 2030. SB 350 also includes interim annual RPS targets with three-year compliance periods. In addition, SB 350 requires that 65 percent of RPS procurement must be derived from long-term contracts of 10 or more years. In 2018, SB 100 (de León, 2018) accelerated and increased the RPS to 60 percent by 2030 and established a goal for 100 percent of the State’s electricity to come from renewable and carbon-free resources by 2045.

## California’s RPS Program

---

California’s ambitious RPS program is jointly implemented by the CPUC and the California Energy Commission (CEC). The RPS program requires the State’s retail sellers<sup>8</sup> to procure 60 percent of their total electricity retail sales from renewable energy resources by 2030. Increasing the amount of renewables in the State’s energy mix provides a range of benefits to Californians, such as reducing greenhouse gas emissions and air pollution, stabilizing electricity rates, and contributing to the reliable operation of the electrical grid. All California electricity retail sellers, or entities engaged in the sale of electricity to end-use customers, are required to comply with the requirements of the RPS program.<sup>9</sup> Entities under the CPUC’s jurisdiction serve approximately 75 percent of the total electricity demand in California. The Publicly Owned Utilities (POUs) serve the remaining 25 percent.<sup>10</sup> Of these retail sellers within the CPUC’s jurisdiction, the large IOUs served approximately 61 percent of the total electricity load in 2020, while SMJUs served 1 percent, CCAs served 26 percent, and ESPs served the remaining 12 percent.<sup>11</sup>

---

<sup>8</sup> Also referred to as load serving entities: large investor-owned utilities (IOUs), small and multi-jurisdictional utilities (SMJUs), community choice aggregators (CCAs), electric service providers (ESPs), and publicly owned utilities (POUs). See Appendix C for a complete list of active retail sellers that the CPUC regulates.

<sup>9</sup> See Chapter IV: Compliance & Enforcement for more details on RPS program requirements.

<sup>10</sup> POUs report their RPS compliance to the CEC and their information is not included in this report.

<sup>11</sup> Retail Sellers’ Annual RPS Compliance Reports, August 2021.

## II. RPS Progress and Status

This chapter uses historical annual data through December 31, 2020 to illustrate the state of the RPS program. The data was obtained from the 2021 Draft RPS Procurement Plans<sup>12</sup> and the 2020 RPS Compliance Reports<sup>13</sup> of all retail sellers, including the large investor-owned utilities (IOUs), small and multi-jurisdictional utilities (SMJUs), community choice aggregators (CCAs), and electric service providers (ESPs). Although this Annual Report provides an update on the retail sellers' progress toward meeting RPS requirements for 2020, which is the final year of the 2017-2020 compliance period, and at times highlights retail sellers' progress toward annual RPS procurement targets and RPS procurement requirements for the entire compliance period, it does not include any reporting of compliance determinations. Final compliance determinations are made after the California Energy Commission (CEC) verifies retail sellers' renewable energy credits (RECs) and the CPUC finishes its compliance review. Greater detail regarding the compliance process is provided in Chapter IV: Compliance and Enforcement.

### Current Renewable Portfolios

---

All electricity retail sellers had an annual target to serve at least 33 percent of their electric load with RPS-eligible resources by December 31, 2020. In general, retail sellers either met or exceeded the 33 percent interim RPS target<sup>14</sup> and almost all reported meeting their 2017–2020 compliance period requirements.<sup>15</sup> Figure 1 below shows statewide progress in meeting the 2030 60 percent RPS requirements.<sup>16</sup>

---

<sup>12</sup> Each year, retail sellers are required to submit their RPS Procurement Plans to the CPUC for approval. Draft 2021 RPS Procurement Plans were submitted in July 2021.

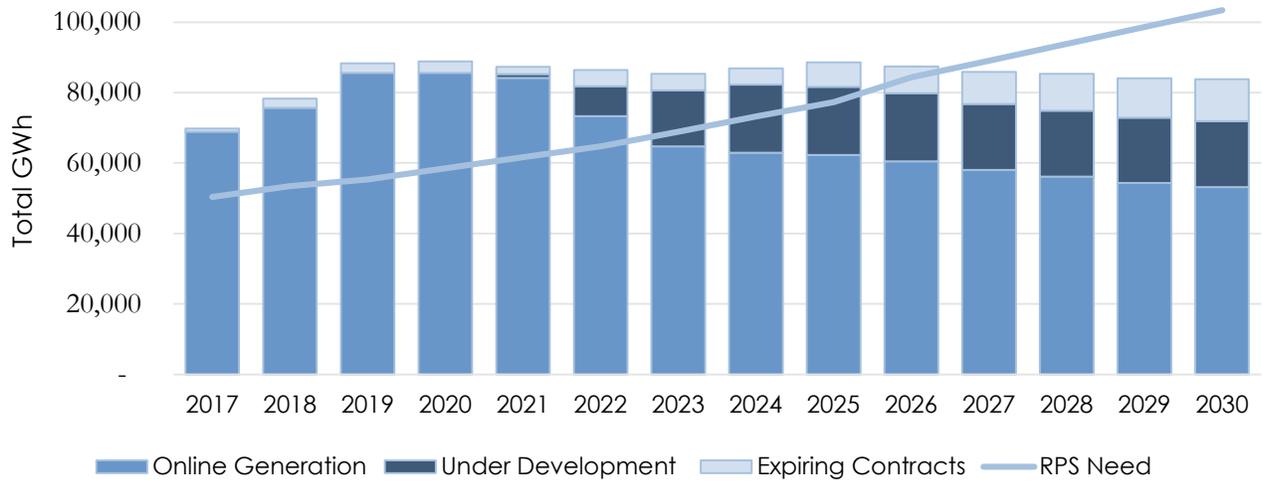
<sup>13</sup> Retail sellers are required to submit preliminary RPS Compliance Reports each year on August 1 to demonstrate progress towards meeting their RPS requirements.

<sup>14</sup> Compliance with California's RPS program is determined by multi-year compliance periods.

<sup>15</sup> See Chapter IV: Compliance and Enforcement, Annual Compliance Review for more information.

<sup>16</sup> See the 2014 Administrative Law Judge Ruling on Renewable Net Short for full definitions of Online Generation, Under Development, and Expiring Contracts: <https://docs.cpuc.ca.gov/PublishedDocs/Efile/G000/M091/K331/91331194.PDF>

Figure 1: Aggregated Retail Seller Progress Towards 60% RPS (2017-2030)



CPUC 2021 RPS Annual Report (November 2021)

Data Source: All Retail Sellers’ 2021 Draft RPS Procurement Plans

The large IOUs serving electric load in California are Pacific Gas and Electric Company (PG&E), Southern California Edison Company (SCE), and San Diego Gas & Electric Company (SDG&E). PG&E’s service territory spans from Santa Barbara to Shasta Counties, SCE’s territory spans from Riverside to Mono Counties, and SDG&E serves San Diego County and southern Orange County.<sup>17</sup> The three large IOUs are on track to meet their 60 percent 2030 RPS procurement mandate. The IOUs have procured to either meet or surpass the 2020 annual RPS percentage target of 33 percent, as illustrated in Table 1.<sup>18</sup>

Table 1: 2020 Large Investor-Owned Utilities’ RPS Procurement Percentages	
Pacific Gas and Electric	35%
Southern California Edison	34%
San Diego Gas & Electric	39%

Data Source: IOUs’ 2021 Draft RPS Procurement Plans (July 2021)

The three large IOUs are currently forecasted to continue to surpass RPS requirements as they are forecasted to have excess procurement for the next seven years.<sup>19</sup> The IOUs may choose to apply excess renewable electricity procured in prior and future years to meet their RPS requirements in future compliance periods. Alternatively, they may sell the energy and renewable energy credits (RECs)<sup>20</sup>

<sup>17</sup> For more information on California electric utility service areas, see the CEC’s California Energy Maps website:

<https://cecgis-caenergy.opendata.arcgis.com/documents/electric-utility-service-territories-and-balancing-authorities/explore>

<sup>18</sup> Based on their annual Draft 2021 RPS Procurement Plans, as well as Compliance Reports filed with the CPUC in 2021.

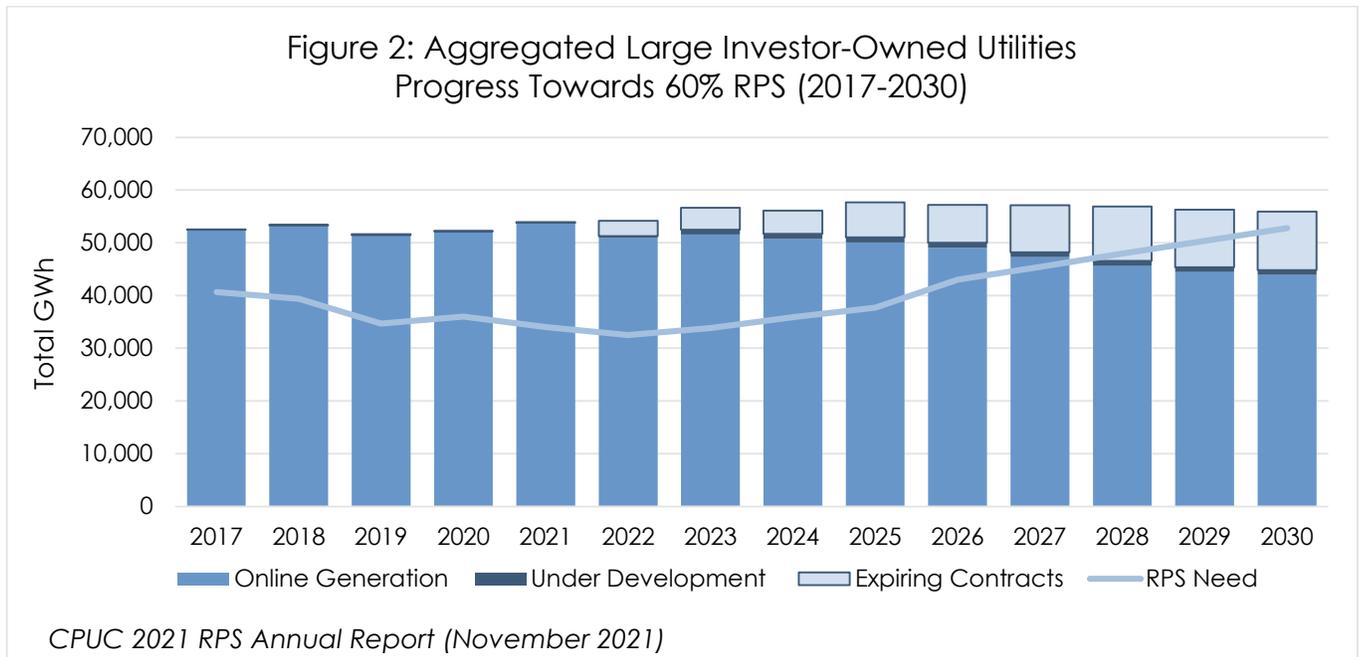
<sup>19</sup> The IOUs’ excess procurement is based on the current forecast of bundled electricity load and the amount of RPS resources already under contract.

<sup>20</sup> See Appendix B: Glossary and Terms for the full definition of a renewable energy credit (REC).

associated with the future excess procurement to other retail sellers, such as CCAs or ESPs, or provide higher than required amounts of renewable energy to their customers.

A variety of market factors have contributed to the IOUs being procured beyond their minimum RPS requirements. These market factors include the initial need to hedge against early program experience with project failure, the continued trend of load departing from IOUs, and the increase in behind-the-meter solar generation.

Figure 2 below uses the most current annual data to illustrate the actual and forecasted progress the IOUs have made toward meeting the 60 percent RPS mandate by 2030. Generation forecasts from projects “Under Development” are risk-adjusted to account for a certain degree of project failure.<sup>21</sup> The “Expired Generation” data represent the amount of generation associated with facilities that will no longer have a Power Purchase Agreement (PPA) with one of the IOUs. Although this generation will not be under contract, there is a possibility that these facilities will re-contract with their current counterparty or another retail seller in the future.



Data Source: IOUs’ 2021 Draft RPS Procurement Plans (July 2021), Renewable Net Short Calculations

The IOUs forecast that they will exceed their RPS requirements by using online generation from existing contracts with a physical deficit beginning in 2028. As Figure 2 shows, the IOUs will have a forecasted surplus of renewable generation through 2027 (otherwise known as excess procurement), which may be used to fulfill RPS obligations in subsequent compliance periods or be sold to other retail sellers.<sup>22</sup> Given that the IOUs have significant excess eligible RPS procurement to apply in later years, they did not conduct annual RPS solicitations in 2016, 2017, 2018, 2019, and 2020 and will not conduct annual solicitations for renewables in 2021. SDG&E and SCE have requested in their 2021 RPS Plans authorization to hold solicitations for additional renewables in 2022, if needed.<sup>23</sup>

<sup>21</sup> Failure rate assumptions are provided by the IOUs in their renewable net short calculation provided with their Draft Annual RPS Procurement Plans.

<sup>22</sup> The calculations for excess procurement rely on a combination of the REC classification and whether the RECs are associated with a short-term or long-term contract. For excess procurement rules for Compliance Periods prior to 2021, see D.12-06-038 and D.17-06-026. For excess procurement rules for Compliance Period 2021–2024 and beyond, see D.17-06-026.

<sup>23</sup> The CPUC must approve solicitations outlined in an IOU’s annual RPS Procurement Plan in a Decision.

Table 2 includes aggregate data<sup>24</sup> to demonstrate the IOUs’ actual procurement and forecasted RPS procurement percentages. The data show that the IOUs expect to exceed their 2021 RPS compliance target and will have procured approximately 47 percent RPS by the end of 2021. The data show that by the end of 2024, the IOUs will still exceed the State mandates. The forecasted RPS percentages of the aggregated large IOUs increases from 47% in 2021 to over 50% in 2022 and beyond. This large amount of forecasted procurement above the RPS requirements is primarily driven by load migration to CCAs in the IOUs’ territories, but has been mitigated by REC sales.

<b>Table 2: Aggregated Actual and Forecasted Large Investor-Owned Utilities’ RPS Percentages for Pacific Gas and Electric, Southern California Edison, and San Diego Gas &amp; Electric</b>								
<b>Compliance Period 2017–2020</b>				<b>Compliance Period 2021–2024</b>				
33% Requirement				44% Requirement				
<b>2017</b>	<b>2018</b>	<b>2019</b>	<b>2020</b>	<b>2021</b>	<b>2022</b>	<b>2023</b>	<b>2024</b>	
33%	38%	35%	35%	47%	56%	54%	53%	

*Data Source: IOUs’ 2021 Draft RPS Procurement Plans (July 2021), Renewable Net Short Calculations*

### Small and Multi-Jurisdictional Utilities (SMJUs)

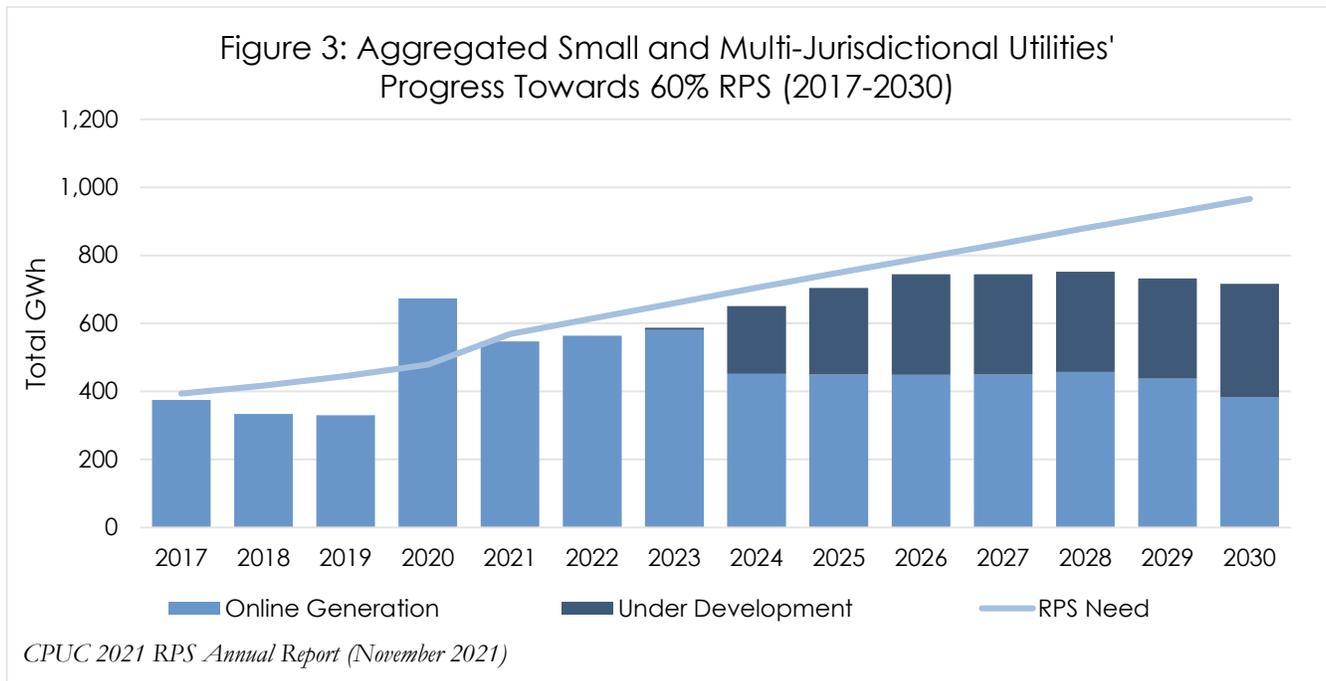
The SMJUs<sup>25</sup> serving electric load in California are Bear Valley Electric Service (BVES), Liberty Utilities<sup>26</sup> (Liberty), and PacifiCorp. BVES provides electricity service to the Big Bear Valley in the San Bernardino Mountains and Liberty serves the counties located in the Lake Tahoe Basin. PacifiCorp is a multi-jurisdictional utility that provides service in several states and to four Northern California counties: Del Norte, Modoc, Siskiyou, and Shasta.

As illustrated in Figure 3, the aggregate SMJU data indicates that the SMJUs will collectively need to procure additional resources to meet the 2021–2024 Compliance Period requirements as well as future requirements. The SMJUs have historically met their requirements towards the end of the compliance period. SMJUs’ RPS procurements do not need to meet the Portfolio Balance Requirement rules, and they may procure unbundled REC contracts from existing facilities which tend to have quicker transaction times. For example, Figure 3 shows how SMJUs renewables generation increased significantly in 2020 to meet their requirements for the 2017-2020 compliance period. SMJUs are currently showing a similar need in the next compliance period, as illustrated in Table 3.

<sup>24</sup> Each retail seller must file its RPS Procurement Plan and Compliance Report annually. Renewable procurement data is not automatically confidential but may be claimed as such through a formal filing. In the formal confidentiality filing, the retail seller must justify why the information should be treated as confidential by the CPUC. Generally, historical data should be public and individual contracts may be confidential for 3 years from the date that energy deliveries begin. Additionally, retail sellers may redact forecast information three years forward. See the CPUC’s Decision on Confidentiality (D.06-06-066) for more information: [http://docs.cpuc.ca.gov/PublishedDocs/WORD\\_PDF/FINAL\\_DECISION/57772.PDF](http://docs.cpuc.ca.gov/PublishedDocs/WORD_PDF/FINAL_DECISION/57772.PDF)

<sup>25</sup> SMJUs are also investor-owned utilities but are considered either small or multijurisdictional and have different rules per Public Utilities Code §§ 399.17 and 399.18.

<sup>26</sup> Formerly CalPeco Electric.



Data Source: SMJUs’ 2021 Draft RPS Procurement Plans (July 2021), Renewable Net Short Calculations

Table 3 shows aggregate SMJU data for their actual and forecasted RPS procurement percentages.<sup>27</sup>

<b>Table 3: Aggregated Actual and Forecasted Small and Multi-Jurisdictional Utilities’ RPS Percentages for Bear Valley Electric Service, Liberty Utilities, and PacifiCorp</b>								
	<b>Compliance Period 2017–2020</b>				<b>Compliance Period 2021–2024</b>			
	33% Requirement				44% Requirement			
	<b>2017</b>	<b>2018</b>	<b>2019</b>	<b>2020</b>	<b>2021</b>	<b>2022</b>	<b>2023</b>	<b>2024</b>
	26%	23%	23%	46%	37%	38%	39%	30%

Data Source: SMJUs’ 2021 Draft RPS Procurement Plans (July 2021), Renewable Net Short Calculations

### Community Choice Aggregators (CCAs)

CCAs are local government entities that are certified by the CPUC to procure electricity on behalf their communities instead of being served by the IOUs.<sup>28</sup> All of the operating CCAs procured at or above the 2020 annual RPS targets, as shown in Table 5.

The CCAs play an increasingly significant role in meeting the State’s renewable energy and CPUC-jurisdictional greenhouse gas reduction goals. In 2020, twenty-two CCAs<sup>29</sup> operated in California and

<sup>27</sup> The CPUC has aggregated RPS procurement data for confidentiality purposes, as reporting individual percentages would disclose market sensitive information.

<sup>28</sup> AB 117 (Migden, 2002) allows local governments to form Joint Powers Authorities to establish community choice energy programs.

<sup>29</sup> In 2014, only Marin Clean Energy and Sonoma Clean Power were serving customers, and Lancaster Choice started serving load in 2015. In 2016, Peninsula Clean Energy and CleanPowerSF began service, and in 2017, Apple Valley, Pico Rivera, Redwood Coast and Silicon Valley started service. Ten additional CCAs launched in 2018, including Clean Power Alliance, East Bay Community Energy, King City Community Power, Central Coast Community Energy, Pioneer Community Energy, Rancho

collectively served 26 percent of electric load. The data show that the following percentages of total IOU load has departed to CCAs and ESPs: PG&E: 63 percent; SCE: 38 percent; SDG&E: 42 percent. CCAs serve 33 percent of the load across California’s three IOU service territories.<sup>30</sup>

Table 4 uses aggregated CCA data to show actual and forecasted RPS procurement percentages in the current and next compliance period.<sup>31</sup>

<b>Table 4: Aggregated Actual and Forecasted Community Choice Aggregators’ RPS Percentages</b>								
<b>Compliance Period 2017–2020</b>					<b>Compliance Period 2021–2024</b>			
33% Requirement					44% Requirement			
<b>2017</b>	<b>2018</b>	<b>2019</b>	<b>2020</b>	<b>2021</b>	<b>2022</b>	<b>2023</b>	<b>2024</b>	
54%	50%	55%	47%	46%	36%	32%	36%	

*Data Source: CCAs’ 2021 RPS Draft Procurement Plans (July 2021), Renewable Net Short Calculations*

Annual RPS Compliance Reports indicate that most CCAs will need to procure additional renewable resources to meet the 60 percent RPS target by 2030.<sup>32</sup> Throughout the 2017-2020 Compliance Period, the CCAs’ procurement has been fairly steady and many forecast to exceed RPS targets. However, the aggregate percentage in 2020 dropped 8 percent from 2019, and is forecasted to drop again by 10 percent in 2022, primarily because of expiring short-term contracts and several new CCAs coming online with minimal to no RPS procurement. Figure 4 illustrates the actual and forecasted progress the CCAs have made toward meeting the RPS requirements in aggregate.

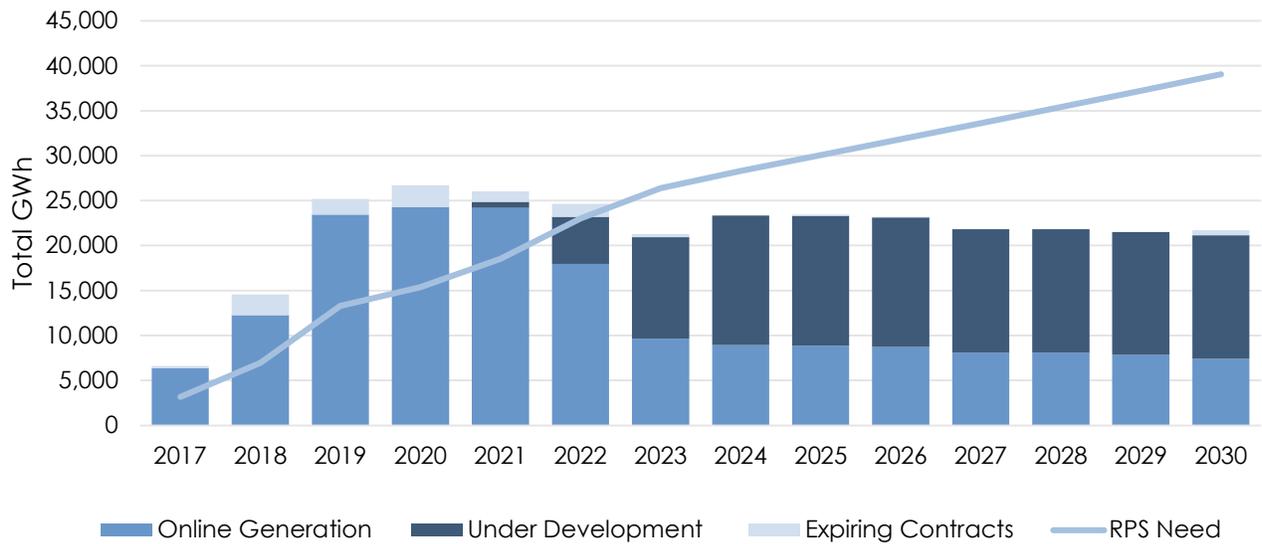
Mirage, San Jacinto Power, San José Clean Energy, Solana Energy Alliance and Valley Clean Energy Alliance. There were no new CCAs that launched in 2019. In 2020, City of Baldwin Park, City of Pomona, Desert Community Energy and Western Community Energy launched as CCAs. In 2021, two new CCAs began operating: Clean Energy Alliance and San Diego Community Power.

<sup>30</sup> Load share data is derived from the California Energy Commission’s (CEC) 2018–19 Integrated Energy Policy Report and CCA Implementation Plans certified by the CPUC, including CCAs that have not yet begun serving load.

<sup>31</sup> The aggregated RPS compliance percentages are adjusted for CCA launch years and include data from all 25 registered CCAs.

<sup>32</sup> See Table 5 for a breakdown of RPS position by each individual operating CCA.

Figure 4: Aggregated Community Choice Aggregators' Progress Towards 60% (2017-2030)



CPUC 2021 RPS Annual Report (November 2021)

Data Source: CCAs' 2021 Draft RPS Procurement Plans (July 2021), Renewable Net Short Calculations

Retail sellers submit annual compliance filings to the CPUC demonstrating their progress toward annual RPS procurement targets. While these forecasts are not determinative of their compliance status, they offer insight into retail sellers' ability to meet RPS goals. In aggregate, the CCAs are contracted to exceed their forecasted 2020 and 2021 targets. However, two CCAs that began serving load in 2021 have not yet procured any RPS energy, as shown in Table 5.

In 2020, the operational CCAs served a total of 46,600 GWh of load<sup>33</sup> and had an average RPS position of 50 percent. The CCAs generation has increased to keep pace with RPS requirements through 2021, even exceeding the 2021 forecast. In 2022, CCAs still rely heavily on projects that remain under development and must come online. In 2023, online generation dips considerably as nine of the 27 CCAs forecast a drop in renewable generation while projects under development have not yet contributed fully. Table 5 below shows the actual positions of individual CCAs that were operational in 2020 and their forecasted positions for 2021 and 2022.<sup>34</sup> The CPUC anticipates that any year-to-year fluctuations in CCAs' RPS positions will decrease substantially by the end of 2024 in response to SB 350, which requires that 65 percent of required RPS procurement must be procured from contracts for ten or more years.<sup>35</sup>

<sup>33</sup> Total number of retail sales reported in the Draft 2021 RPS Procurement Plans, submitted July 2021.

<sup>34</sup> The forecasted positions of LCE, MCE, Pioneer, PRIME, RMEA, and SJP have been adjusted due to reporting errors.

<sup>35</sup> Senate Bill (SB) 350 (de León, 2015) requires that 65 percent of total RPS procurement comes from long term contracts (≥ 10 years) beginning in 2021.

**Table 5: Annual RPS Position of Community Choice Aggregators (%)**

First Year Serving Load	CCA	Actuals	Forecast	
		2020	2021	2022
2010	Marin Clean Energy	63%	65%	59%
2014	Sonoma Clean Power	50%	50%	51%
2015	Lancaster Choice Energy	36%	34%	31%
2016	Peninsula Clean Energy	54%	53%	51%
2016	CleanPowerSF <sup>36</sup>	33%	-	-
2017	Apple Valley Choice	30%	47%	28%
2017	Pico Rivera	45%	30%	31%
2017	Redwood Coast Energy Authority	39%	35%	19%
2017	Silicon Valley Clean Energy	50%	52%	53%
2018	Valley Clean Energy Alliance	44%	12%	20%
2018	Central Coast Community Energy	31%	41%	32%
2018	San Jacinto Power	33%	28%	30%
2018	Rancho Mirage Energy Authority	39%	32%	29%
2018	Clean Power Alliance	40%	50%	46%
2018	East Bay Community Energy	38%	39%	29%
2018	Pioneer Community Energy	28%	30%	23%
2018	Solana Energy Alliance	50%	56%	-
2018	San José Clean Energy	44%	49%	45%
2018	King City Community Power	43%	27%	29%
2020	City of Baldwin Park <sup>37</sup>	35%	33%	32%
2020	City of Pomona	35%	37%	35%
2020	Desert Community Energy	54%	23%	14%
2020	Western Community Energy <sup>38</sup>	33%	0%	-
2021	Clean Energy Alliance	-	15%	2%
2021	San Diego Community Power	-	21%	19%

Data Source: CCA Draft RPS Procurement Plans (July 2021), CCA RPS Compliance Reports (August 2021)

<sup>36</sup> CleanPowerSF has requested confidential treatment of their forecasted RPS position per CPUC D.06-06-066. For more information on forecasted positions, see Chapter IV.

<sup>37</sup> On October 6, 2021, Baldwin Park's City Council voted to terminate Baldwin Park Resident Owned Utility District (BPROUD) CCA service. They will continue operations through at least February 2022.

<sup>38</sup> Western Community Energy (WCE) filed for Chapter 9 bankruptcy on May 24, 2021 in United States Bankruptcy Court, Central District of California, Riverside Division. WCE is no longer serving load and is dissolving as a CCA.

## Electric Service Providers (ESPs)

ESPs serve customers in the Direct Access (DA) program.<sup>39</sup> ESPs currently serve approximately 12 percent of electricity load within the CPUC’s jurisdiction.<sup>40</sup> Senate Bill (SB) 237 (Hertzberg, 2018) authorized an increase in the maximum allowable electric load cap of 4,000 GWh for Direct Access. The current total load cap for ESPs in California is approximately 25,000 GWh, which has been reached by existing ESPs.<sup>41</sup>

On January 1st, 2021 the additional 4,000 GWh of Direct Access load granted by SB 237 became available to already-determined customers from the 2019 and 2020 Direct Access Waitlists. SB 237 also required the CPUC to provide recommendations on the further expansion of Direct Access. In September 2020, the CPUC issued a Staff Report for public comment, which provides an assessment of reopening Direct Access with the outlined requirements of SB 237.<sup>42</sup> In June 2021, the CPUC issued its findings on the staff recommendations and provided them to the Legislature.<sup>43</sup> The CPUC recommends that the Legislature does not expand Direct Access transactions as doing so would create risks to electric system reliability.

Table 6 provides aggregate actual and forecasted RPS procurement percentages of ESPs. Most ESPs will need to procure additional RPS energy to meet the RPS Compliance Period 2021–2024 requirements.

<b>Table 6: Aggregate Actual and Forecasted Electric Service Providers’ RPS Percentages</b>								
<b>Compliance Period 2017–2020</b>					<b>Compliance Period 2021–2024</b>			
33% Requirement					44% Requirement			
<b>2017</b>	<b>2018</b>	<b>2019</b>	<b>2020</b>	<b>2021</b>	<b>2022</b>	<b>2023</b>	<b>2024</b>	
40%	41%	43%	37%	27%	33%	33%	33%	

*Data Source: ESPs’ 2021 Draft RPS Procurement Plans (July 2021)*

Though ESPs are required to file both RPS Compliance Reports and Procurement Plans, some do not provide detailed long-term forecasts on their renewable procurement. The ESPs’ forecasted procurement percentages are lower into the future because most of the ESPs’ RPS procurement has been undertaken with short-term contracts, despite the 65 percent long-term requirement commencing in 2021.

As illustrated in Figure 5, the aggregated ESP data indicates that ESPs will collectively need to procure additional resources to meet the RPS requirements in Compliance Period 2021–2024 and beyond.

<sup>39</sup> Direct Access (DA) service is retail electric service where customers have the choice to purchase electricity from an ESP, instead of from a regulated electric utility. For more information on DA, visit <https://www.cpuc.ca.gov/industries-and-topics/electrical-energy/electric-costs/electric-service-provider-list-and-registration-information>.

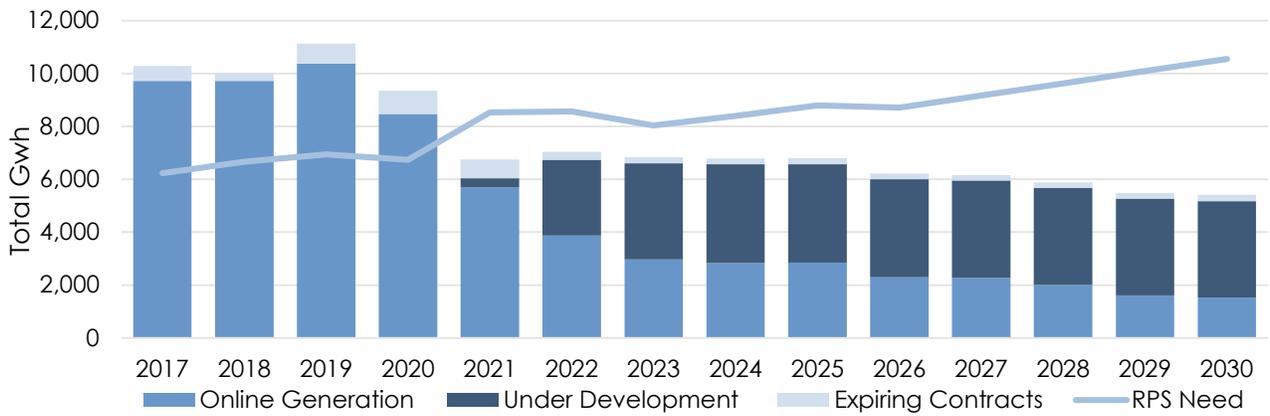
<sup>40</sup> See Appendix C for a list of active ESPs.

<sup>41</sup> See D.10-03-022, “Decision Regarding Increased Limits for Direct Access Transactions,” for more information.

<sup>42</sup> See R.19-03-009 for more information on the implementation of SB 237. The Staff Report can be found here: <https://docs.cpuc.ca.gov/PublishedDocs/Efile/G000/M347/K810/347810936.PDF>

<sup>43</sup> See D.21-06-033, “Decision Recommending Against Further Direct Access Expansion” for more information.

Figure 5: Aggregated Electric Service Providers' Progress Towards 60% RPS (2017-2030)



CPUC 2021 RPS Annual Report (November 2021)

Data Source: ESPs' 2021 Draft RPS Procurement Plans (July 2021), Renewable Net Short Calculations

## Renewable Technology Mix

Resource diversity can contribute to achieving a balanced and reliable energy generation portfolio to support increasing the amount of renewables in California.<sup>44</sup> Since the inception of the RPS program in 2002, the renewable technology mix of the State's energy portfolio has become increasingly diversified. A robust mix of renewable technologies will aid in the transition to a carbon-free electricity by 2045 and is crucial for meeting the State's climate and emissions reduction goals.

### Large Investor-Owned Utilities (IOUs)

As shown below in Table 7, the IOUs have procured a mix of renewable energy resources including wind, solar thermal, solar photovoltaic (PV), geothermal, bioenergy, and small hydroelectric facilities to meet the requirements of the RPS program.<sup>45</sup>

In 2020, the majority of the IOUs' RPS portfolios were comprised of solar and wind technologies.

<sup>44</sup> See Public Utilities Code § 399.11(b) for a list of the benefits the RPS program is intended to provide to California, among which is renewable resource diversity.

<sup>45</sup> The technology category of "Bioenergy" consists of biomass, biogas, biodiesel, landfill gas, and municipal solid waste.

**Table 7: Portfolio Percentages of 2020 RPS Mix for Large IOUs**

	Bioenergy	Geothermal	Small Hydro <sup>46</sup>	Conduit Hydro <sup>47</sup>	Solar PV	Solar Thermal	Wind
<b>PG&amp;E</b>	6%	7%	4%	-	41%	4%	38%
<b>SCE</b>	0.4%	16%	2%	0.1%	42%	2%	37%
<b>SDG&amp;E</b>	2%	-	-	<0.1%	46%	-	52%

Data Source: IOUs' Annual RPS Compliance Reports (August 2021)

### Small and Multi-Jurisdictional Utilities (SMJUs)

As Table 8 below shows, in 2020, BVES procured RECs from small hydro, conduit hydro, and wind resources, whereas Liberty procured primarily from solar PV facilities. PacifiCorp had the most diverse renewable energy portfolio mix with six different technologies in its portfolio,<sup>48</sup> with the majority of its renewables being wind and small hydroelectric.

In 2020, the majority of the SMJUs' RPS portfolios were comprised of wind and bioenergy technologies.

**Table 8: Portfolio Percentages of 2020 RPS Mix for SMJUs**

	Bioenergy	Geothermal	Small Hydro	Conduit Hydro	Solar PV	Wind
<b>Bear Valley Electric Service</b>	-	-	47%	37%	0%	15%
<b>Liberty Utilities</b>	1%	13%	-	-	86%	-
<b>PacifiCorp</b>	20%	1%	5%	0.1%	17%	56%

Data Source: SMJUs' Annual RPS Compliance Reports (August 2021)

### Community Choice Aggregators (CCAs)

In 2020, the majority of the CCAs' RPS portfolios were comprised of wind and solar resources, but many also included significant amounts of bioenergy, geothermal, and small hydroelectric resources. Table 9 illustrates the renewable energy portfolio mixes of the CCAs that operated in California in 2020.

<sup>46</sup> Small Hydro projects are defined as hydroelectric facilities that are under 30 MW in capacity by the CEC's RPS Eligibility Guidebook.

<sup>47</sup> Conduit Hydro facilities use the hydroelectric potential of an existing man-made conduit that is operated to distribute water and must have a facility capacity of 30 MW or less to be considered RPS-eligible.

<sup>48</sup> PacifiCorp's California RPS portfolio refers to the portfolio of resources PacifiCorp uses to meet compliance with California's RPS program and does not refer to all resources in its portfolio.

**Table 9: Portfolio Percentages of 2020 RPS Mix for CCAs**

	Bioenergy	Geothermal	Small Hydro	Solar PV	Wind	Solar Thermal
<b>Apple Valley Choice Energy</b>	16%	16%	-	54%	11%	-
<b>City of Baldwin Park</b>	42%	-	-	-	58%	-
<b>Central Coast Community Energy</b>	5%	28%	9%	49%	9%	-
<b>Clean Power Alliance</b>	2%	17%	2%	43%	39%	-
<b>City of Pomona</b>	29%	-	-	-	71%	-
<b>CleanPowerSF</b>	-	10%	2%	56%	30%	1%
<b>Desert Community Energy</b>	-	-	4%	44%	52%	-
<b>East Bay Community Energy</b>	4%	6%	3%	39%	47%	0.2%
<b>King City Community Energy</b>	-	-	-	13%	87%	-
<b>Lancaster Choice Energy</b>	20%	18%	27%	16%	18%	-
<b>Marin Clean Energy</b>	3%	9%	5%	29%	48%	4%
<b>Peninsula Clean Energy</b>	19%	5%	2%	59%	15%	1%
<b>Pioneer Community Energy</b>	4%	14%	15%	47%	21%	-
<b>Pico Rivera Innovative Municipal Energy</b>	24%	39%	2%	10%	25%	-
<b>Redwood Coast Energy Authority</b>	26%	15%	4%	27%	28%	-
<b>Rancho Mirage Energy Authority</b>	19%	65%	6%	10%	0.3%	-
<b>Sonoma Clean Power</b>	-	32%	-	20%	48%	-
<b>Solana Energy Alliance</b>	-	51%	-	-	49%	-
<b>San José Clean Energy</b>	4%	8%	-	37%	50%	-
<b>San Jacinto Power</b>	14%	61%	15%	8%	-	-
<b>Silicon Valley Clean Energy</b>	7%	4%	12%	43%	34%	-
<b>Valley Clean Energy Alliance</b>	5%	-	3%	59%	35%	-
<b>Western Clean Energy</b>	5%	22%	5%	12%	57%	-

Data Source: CCAs' Annual RPS Compliance Reports (August 2021)

As Table 9 shows, CCAs such as East Bay Community Energy, Lancaster Choice Energy, Marin Clean Energy, Peninsula Clean Energy, Pico Rivera, and San Jose Clean Energy have some of the most diverse RPS portfolios.

## Electric Service Providers (ESPs)

Table 10 illustrates the renewable energy portfolio mixes of the ESPs that operated in California in 2020.

<b>Table 10: Portfolio Percentages 2020 RPS Mix for ESPs</b>						
	<b>Bioenergy</b>	<b>Geothermal</b>	<b>Small Hydro</b>	<b>Solar PV</b>	<b>Solar Thermal</b>	<b>Wind</b>
<b>3 Phases Renewables</b>	11%	5%	5%	79%	-	0.2%
<b>American PowerNet</b>	51%	-	-	23%	-	26%
<b>Calpine Energy Solutions</b>	10%	18%	2%	37%	-	34%
<b>Calpine Power America</b>	-	51%	-	22%	-	27%
<b>Commercial Energy of CA</b>	62%	-	7%	14%	18%	-
<b>Constellation New Energy</b>	16%	39%	2%	12%	-	-
<b>Direct Energy Business</b>	14%	8%	2%	23%	-	53%
<b>EDF Industrial Power Services</b>	5%	1%	2%	22%	59%	12%
<b>Just Energy Solutions</b>	14%	-	25%	-	-	60%
<b>Liberty Power Holdings</b>	-	-	-	100%	-	-
<b>Pilot Power Group</b>	-	-	-	10%	-	90%
<b>Shell Energy North America</b>	13%	7%	1%	45%	-	34%
<b>Tiger Natural Gas</b>	3%	-	76%	-	-	21%
<b>UC Regents</b>	-	-	-	64%	-	36%

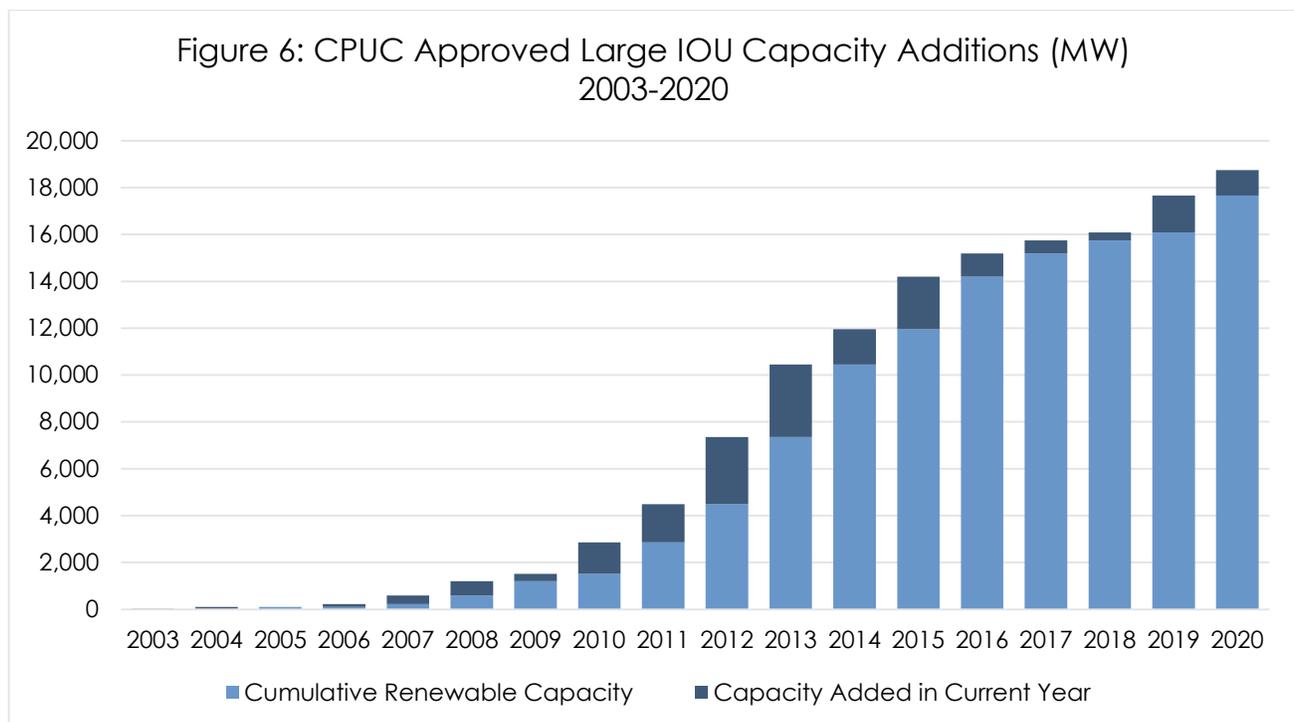
Data Source: ESPs' Annual RPS Compliance Reports (August 2021)

As Table 10 shows, certain ESPs such as 3 Phases Renewables, Calpine Energy Solutions, Direct Energy Business, EDF Industrial Power Services, and Shell Energy North America have diverse RPS portfolios. These portfolios are comprised of a variety of renewable technologies including bioenergy, geothermal, hydroelectric, solar, and wind.

## Contracted Renewable Capacity

Since 2003, the three large IOUs have contracted for over 21,000 MW of renewable capacity<sup>49</sup> under the RPS program. The CPUC must approve all new RPS capacity additions proposed by the large IOUs and SMJUs but is not required to approve capacity additions for CCAs and ESPs. Accordingly, the data collected by the CPUC on approved capacity is primarily for the large IOUs.

The approved RPS capacity shown in Figure 6 includes both in-state and out-of-state facilities that have contracted with the IOUs and have come online between 2003 and 2020. Most of the new facilities procured for the RPS program are located in-state. Approximately 300 additional MW of renewables contracted by the IOUs are scheduled to come online in 2021–2023.



Data Source: CPUC RPS Database, October 2021

## RPS Procurement Costs

To understand the impact that RPS procurement costs will have on ratepayers, the CPUC collects various pricing data to evaluate cost trends and analyzes rate impacts. The IOUs use competitive procurement mechanisms and a Least-Cost Best-Fit evaluation methodology<sup>50</sup> to ensure procurement of renewable resources that provide the most value to their customers. Although the CPUC has not established cost limitations for RPS procurement, it uses the Integrated Resource Planning<sup>51</sup> (IRP) proceeding to identify the most cost-effective portfolio of resources to inform future procurement activities.

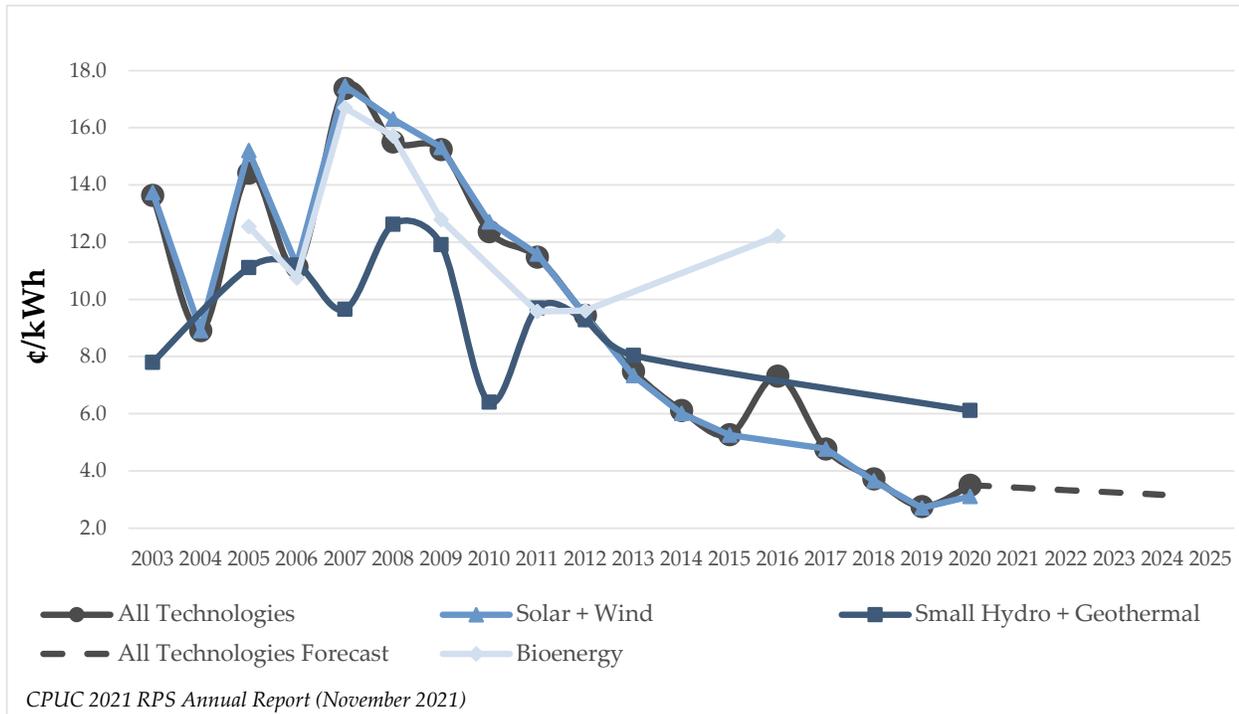
<sup>49</sup> Renewable capacity is defined as the maximum power generating capacity of power plants that use renewable energy sources to produce electricity.

<sup>50</sup> The Least-Cost Best-Fit methodology is a valuation framework that the IOUs use for the rank ordering and selection of least-cost and best-fit renewable resources to comply with annual RPS obligations on a total cost basis.

<sup>51</sup> For more information on the IRP proceeding (R.20-05-0023), visit <https://www.cpuc.ca.gov/industries-and-topics/electrical-energy/electric-power-procurement/long-term-procurement-planning>.

The overall contracted commitment in renewables by retail sellers in California has increased over time, which has contributed to the cost competitiveness of technologies, particularly solar and wind. Figure 7 illustrates the average annual contract prices by technology category for procuring RPS eligible projects with capacities greater than 3 MW in cents per kilowatt-hour (¢/kWh) for all load-serving entities.

Figure 7: Historical Trend of All Load Serving Entities' RPS Contract Costs by Technology and Year of Execution from 2003-2025 (Real Dollars)



Data Source: CPUC 2021 Annual Report on Costs and Cost Savings for the RPS Program (Padilla Report) <sup>52</sup>

Figure 7 shows that RPS contract prices, in real dollars, decreased on average of 8.3% annually between 2007 and 2020 for the “all technologies” group. The overall downward trend in contract prices can be attributed to falling prices for wind and solar technologies, which together make up 86 percent of the large IOUs’ collective RPS generating capacity. To remove non-representational trends, contracts with a nameplate capacity of less than 3 MW and those reported as net cost instead of total contract price were not included in Figure 7.<sup>53</sup>

The average price of IOU, CCA, and ESP contracts executed in 2020 was 3.5¢/kWh compared to 2.8¢/kWh in 2019. The 2020 price increase can be attributed to an atypically high proportion of contracts from traditionally more costly technologies (bioenergy, geothermal, small hydro and wind). However, in light of the overall historical downward trend in renewable resource prices, as shown in Figure 7, it is

<sup>52</sup> RPS 2021 Padilla Report to the Legislature on Costs and Savings for the RPS in 2020: <https://www.cpuc.ca.gov/industries-and-topics/electrical-energy/energy-reports-and-whitepapers/rps-reports-and-data>. Values were adjusted for inflation using the U.S. Bureau of Labor Statistics’ Producer Price Index (PPI) for the Electric Power Generation, Transmission, and Distribution Industry.

<sup>53</sup> Projects with a capacity of 3 MW or less made up roughly 2% of all of the IOUs’ contracted RPS capacity, and removing these figures eliminated non-representative trends from the data. As a result of this size exclusion, feed-in-tariff projects were not considered in the analysis above. In California, feed-in-tariff programs provide projects with a capacity of 3 MW or less capacity a predetermined price (\$/MWh) to encourage market transformation for projects at these sizes. Additionally, contracts identified as REC only payments were excluded as these values are not comparable to all in energy, capacity, and REC contract prices.

reasonable to expect a return to the trend from 2007-2019 of decreasing average renewable contract prices as more renewable procurement, especially lower-priced solar, takes place to meet the State's GHG goals as indicated in the CPUC's IRP process.<sup>54</sup> For more information on the costs of the RPS program, see the 2020 Annual Report on RPS Costs and Cost Savings (Padilla Report).<sup>55</sup>

---

<sup>54</sup> CPUC IRP Ruling (August 17, 2021): [https://www.cpuc.ca.gov/-/media/cpuc-website/divisions/energy-division/documents/integrated-resource-plan-and-long-term-procurement-plan-irp-ltpp/2019-2020-irp-events-and-materials/ruling\\_proposed-ppsp.pdf](https://www.cpuc.ca.gov/-/media/cpuc-website/divisions/energy-division/documents/integrated-resource-plan-and-long-term-procurement-plan-irp-ltpp/2019-2020-irp-events-and-materials/ruling_proposed-ppsp.pdf)

See also Lazard, Levelized Cost of Energy Analysis – Version 14.0 (October 2020) at 13: Certain renewable energy generation technologies are already cost-competitive with conventional generation technologies; a key factor regarding the continued cost decline of renewable energy generation technologies is the ability of technological development and industry scale to continue lowering operating expenses and capital costs for renewable energy generation technology.

<sup>55</sup>[https://www.cpuc.ca.gov/uploadedFiles/CPUCWebsite/Content/About\\_Us/Organization/Divisions/Office\\_of\\_Governmental\\_Affairs/Legislation/2020/2020%20Padilla%20Report.pdf](https://www.cpuc.ca.gov/uploadedFiles/CPUCWebsite/Content/About_Us/Organization/Divisions/Office_of_Governmental_Affairs/Legislation/2020/2020%20Padilla%20Report.pdf)

### III. Renewable Procurement and Project Development

This chapter uses the most current procurement and contracting data available as of October 2021 for all retail sellers in order to evaluate the state of new renewable project development.

#### Contracting and New Projects in Development

##### Large Investor-Owned Utilities (IOUs)

In 2020, the IOUs collectively executed two BioMAT contracts for a total of 6 MW of newly contracted RPS capacity.<sup>56</sup> Table 11 below shows the BioMAT project capacity executed for each IOU. In 2020, only PG&E executed BioMAT contracts.

**Table 11: Large IOUs BioMAT Contracts Executed**

	PG&E		SCE		SDG&E		Totals	
	Contracts	MW	Contracts	MW	Contracts	MW	<b>Contracts</b>	<b>MW</b>
<b>2019</b>	7	12	3	8	-	-	<b>10</b>	<b>20</b>
<b>2020</b>	2	6	-	-	-	-	<b>2</b>	<b>6</b>

*Data Source: CPUC RPS Database, October 2021*

##### REC SALES

Due to the IOUs' forecasted excess RPS procurement, the CPUC authorized the IOUs to hold REC sales solicitations in 2019, 2020, and 2021 to sell RPS energy from their portfolios.<sup>57</sup> The IOUs' long RPS position is a result of forecasted excess RPS procurement and customer load departure. REC sales solicitations provide IOUs with the opportunity to optimize their portfolios as well as provide renewable resources for other retail sellers. PG&E, SCE, and SDG&E held REC sales solicitations in 2020 and executed a total of 13 contracts as a result of their solicitations. Table 12 below shows REC sales solicitation summaries by IOU.

<sup>56</sup> Per D.12-06-038 and D.17-12-007, the CPUC collects monthly data from the large IOUs on RPS projects, including contract details, project development status, technology type, location, capacity, financing status, construction start date, commercial online date, regulatory status, and interconnection details. Table 11 illustrates data from the large IOUs, but there were also other RPS contracts signed by the SMJUs, CCAs, and ESPs.

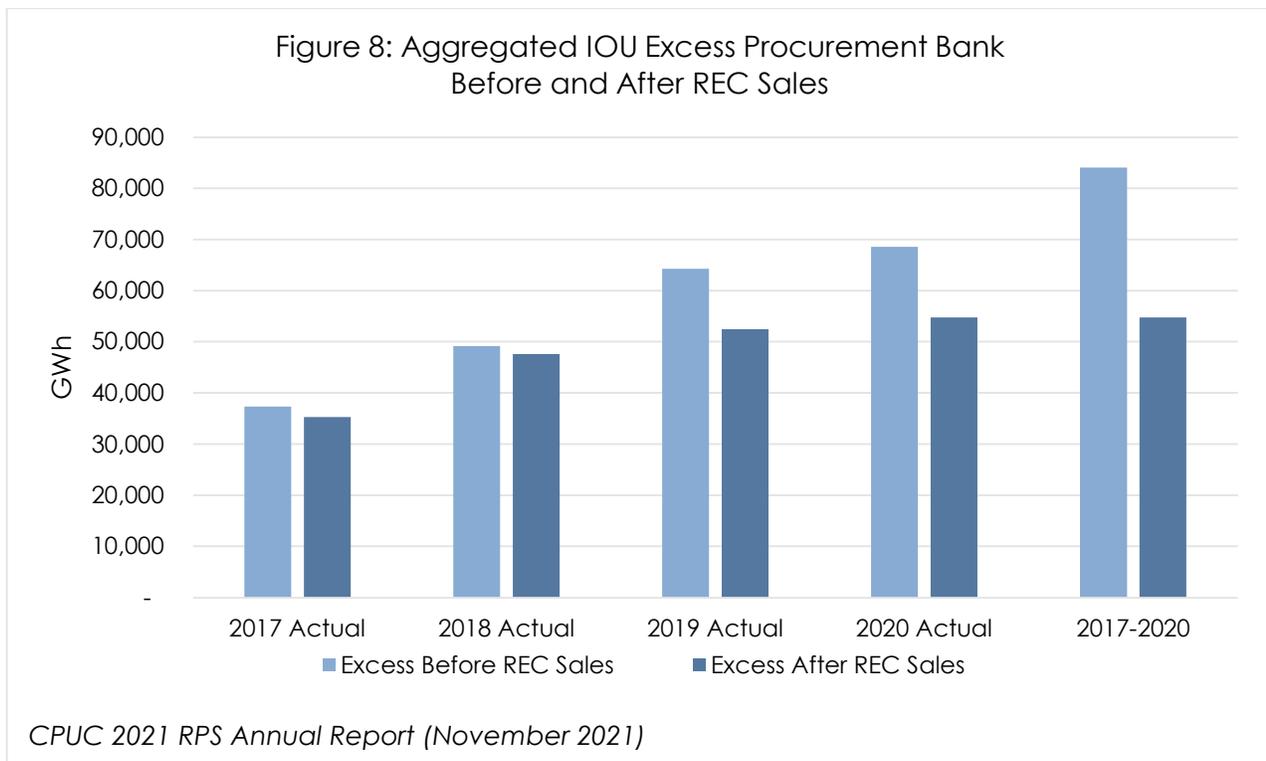
<sup>57</sup> See D.19-12-042.

Table 12: Large IOU REC Sales Contracts Approved by the CPUC								
	PG&E		SCE		SDG&E		Totals	
	Contracts	GWh	Contracts	GWh	Contracts	GWh	Contracts	GWh
<b>2019</b>	13	6,389	25	13,347	-	-	<b>37</b>	<b>19,736</b>
<b>2020</b>	2	500	12	4,742	1	175	<b>15</b>	<b>5,417</b>

Data Source: CPUC RPS Database, October 2021

The IOUs’ REC sales also offer a path for smaller or newer retail sellers to procure quantities to meet their RPS compliance needs. All three of the large IOUs have held REC sales solicitations in 2019, 2020, and 2021 and have requested CPUC approval of additional REC sales solicitations in 2022.

As Figure 8 below shows, the IOUs’ REC sales solicitations over the last four years have resulted in a 33 percent decrease of their aggregate excess procurement bank in Compliance Period 2017–2020.



Data Source: IOUs’ 2021 Draft Procurement Plans, Renewable Net Short calculations

In aggregate, the IOUs have sold nearly 30,000 GWh of RPS energy from their portfolios from 2017 to 2020 and will sell additional RPS energy in 2021 and 2022 from existing executed REC sales contracts.

### Small and Multi-Jurisdictional Utilities (SMJUs)

BVES did not procure any additional RPS resources for 2019 and Liberty executed two new short-term unbundled REC contracts from solar PV facilities in 2019 and 2020. PacifiCorp executed two short-term

contracts for deliveries in 2020 and six long-term unbundled REC contracts for solar PV and wind procurement from Oregon, Wyoming, and Utah.

## Community Choice Aggregators (CCAs)

To date, 20 CCAs have executed long-term contracts with new utility-scale<sup>58</sup> renewable projects that have not yet reached their commercial operation dates. The data in the tables below include projects that will come online in the future and does not represent an exhaustive list of all new CCA projects that have been contracted for and built over the last decade. Table 13 shows the in-state renewable energy projects that are currently under development by CCAs with commercial online dates in 2021 and 2022. Of the contracts listed, about 83% are for new solar PV resources many of which include storage.

---

<sup>58</sup> Utility-scale projects refer to contract capacities of 20 MW or greater.

**Table 13: New California Renewables Projects with CCA Contracts  
COD 2021–2022**

CCA	Technology	Capacity (MW)	County Location	Contract Term (Years)	COD <sup>59</sup>
Central Coast Community Energy	Geothermal	66	Inyo	15	2022
Central Coast Community Energy	Solar PV	68	Kings	17	2021
Central Coast Community Energy	Solar PV	58	Kern	20	2021
Central Coast Community Energy	Solar PV	60	Kern	15	2022
Central Coast Community Energy	Solar PV	120	Kern	20	2022
Clean Power Alliance	Solar PV	40	Kern	15	2021
Clean Power Alliance	Solar PV	100	San Bernardino	15	2021
Clean Power Alliance	Solar PV	233	Riverside	15	2021
Clean Power Alliance	Geothermal	50	Lake	15	2022
Clean Power Alliance	Solar PV	60	Kern	15	2022
Clean Power Alliance	Solar PV	56	Los Angeles	15	2022
CleanPowerSF	Wind	60	Kern	15	2021
CleanPowerSF	Solar PV	100	Riverside	20	2021
East Bay Community Energy	Wind	56	Alameda	20	2021
East Bay Community Energy	Solar PV	100	Kern	15	2022
East Bay Community Energy	Solar PV	56	Tulare	15	2022
East Bay Community Energy	Solar PV	100	Fresno	20	2022
East Bay Community Energy	Solar PV	125	Kern	20	2022
Marin Clean Energy	Wind	100	Santa Barbara	15	2021
Marin Clean Energy	Solar PV	110	San Bernardino	15	2022
Peninsula Clean Energy	Wind	30	Kern	20	2021
Pioneer Community Energy	Solar PV	34	Kern	15	2022
Redwood Coast Energy Authority	Solar PV	100	Kern	15	2022
San José Clean Energy	Solar PV	62	Kern	12	2021
San José Clean Energy	Solar PV	100	Kern	15	2022
San José Clean Energy	Solar PV	100	Fresno	20	2022
Silicon Valley Clean Energy	Geothermal	33	Inyo	14	2022
Silicon Valley Clean Energy	Solar PV	93	Kings	17	2021
Silicon Valley Clean Energy	Solar PV	70	Kern	20	2021
Silicon Valley Clean Energy	Solar PV	40	Kern	15	2022
Valley Clean Energy	Solar PV	50	Kings	15	2021
Valley Clean Energy	Solar PV	90	San Bernadino	20	2022
<b>Total</b>		<b>2,520</b>			

Data Source: CCAs' RPS Draft Procurement Plans (July 2021), CCAs' Annual RPS Compliance Reports (August 2021)

<sup>59</sup> Commercial operation date (COD) is defined as the date which a project has achieved or is expected to achieve full commercial operation.

The CCAs also contracted with new renewable projects with commercial online dates further into the future and located outside of California. The table below lists additional in-state renewables contracts with commercial online dates in 2022 – 2024. Of the contracts listed, about 92% are for new solar PV resources many of which include storage.

<b>Table 14: New California Renewables Projects with Community Choice Aggregator Contracts COD 2023–2024</b>					
<b>CCA</b>	<b>Technology</b>	<b>Capacity (MW)</b>	<b>County Location</b>	<b>Contract Term (Years)</b>	<b>COD</b>
Central Coast Community Energy	Solar PV	20	Tulare	15	2023
Central Coast Community Energy	Solar PV	70	Kern	12	2024
Central Coast Community Energy	Solar PV	100	Riverside	15	2023
Central Coast Community Energy	Solar PV	63	Fresno	15	2023
Central Coast Community Energy	Wind	33	Riverside	20	2023
Clean Power Alliance	Solar PV	65	Kern	15	2023
Clean Power Alliance	Solar PV	300	Tulare	15	2023
Clean Power Alliance	Solar PV	123	San Bernadino	15	2023
Clean Power Alliance	Solar PV	94	Riverside	15	2023
Clean Power Alliance	Solar PV	65	San Bernadino	15	2023
Clean Power Alliance	Solar PV	48	San Bernadino	20	2023
CleanPowerSF	Solar PV	20	Stanislaus	20	2023
CleanPowerSF	Solar PV	75	Alameda	25	2023
Desert Community Energy	Solar PV	50	Tulare	20	2023
San Diego Community Power	Solar PV	100	Imperial	20	2023
San Diego Community Power	Solar PV	90	San Diego	20	2023
San Diego Community Power	Solar PV	150	Riverside	15	2023
Silicon Valley Clean Energy	Solar PV	20	Tulare	15	2023
Silicon Valley Clean Energy	Solar PV	80	Kern	20	2023
Silicon Valley Clean Energy	Solar PV	100	Riverside	15	2023
Silicon Valley Clean Energy	Solar PV	63	Fresno	15	2023
Silicon Valley Clean Energy	Wind	33	Riverside	20	2023
Silicon Valley Clean Energy	Wind	78	Kern	15	2023
Sonoma Clean Power	Solar PV	50	Stanislaus	20	2023
Valley Clean Energy Alliance	Solar PV	20	Yolo	20	2023
<b>Total</b>		<b>1,910</b>			

Data Source: CCAs’ RPS Draft Procurement Plans (July 2021), CCAs’ Annual RPS Compliance Reports (August 2021)

Table 15 lists the CCAs' out-of-state contracts for new renewables projects.

<b>Table 15: New Out-of-State Renewables Projects with Community Choice Aggregator Contracts COD 2021–2023</b>					
<b>CCA</b>	<b>Technology</b>	<b>Capacity (MW)</b>	<b>Location</b>	<b>Contract Term (Years)</b>	<b>COD</b>
<b>Central Coast Community Energy</b>	Solar PV	150	La Paz, AZ	10	2022
<b>Central Coast Community Energy</b>	Solar PV	75	Clark, NV	20	2022
<b>San Jose Clean Energy</b>	Wind	225	Torrance and Guadalupe, NM	15	2021
<b>Silicon Valley Clean Energy</b>	Solar PV	50	Clark, NV	20	2022
<b>Silicon Valley Clean Energy</b>	Solar PV	50	La Paz, AZ	10	2022
<b>Multiple: Apple Valley Choice Energy, City of Baldwin Park, City of Pomona, Lancaster Choice Energy, Pico Riviera Innovative Municipal Energy, Rancho Mirage Energy Authority, San Jacinto Power</b>	Wind	30	Torrance, NM	15	2021
<b>Total</b>		<b>425</b>			

*Data Source: CCAs' RPS Draft Procurement Plans (July 2021), CCAs' Annual RPS Compliance Reports (August 2021)*

Several operating CCAs have only entered into contracts with RPS facilities that are already in commercial operation. One CCA that launched in 2021 has not yet procured any RPS energy.<sup>60</sup>

### Electric Service Providers (ESPs)

The vast majority of ESPs exclusively contract with existing renewable energy facilities that have already achieved commercial operation. As previously explained in this chapter, ESPs have historically contracted for short-term procurement, ranging from one to three-year terms. However, four ESPs have recently executed long-term contracts with new utility-scale renewable resources to meet the 65% long-term contracting requirement.

Table 16 shows the new long-term contracts executed by ESPs that have not yet reached their commercial operation dates, where 95% of total new procurement is from in-state solar PV resources.

<sup>60</sup> RPS Compliance Report, City of Santa Barbara, August 2021.

**Table 16: New Long-term Renewables Projects with ESP Contracts**

ESP	Technology	Capacity (MW)	County Location	Contract Term (Years)	COD
Direct Energy Business	Solar PV	250	Riverside	15	2022
Calpine Energy Solutions	Solar PV	20	Kings	10	2022
Calpine Energy Solutions	Solar PV	40	Kern	10	2022
Calpine Energy Solutions	Solar PV	150	Maricopa, AZ	10	2023
Calpine Energy Solutions	Solar PV	65	San Bernadino	10	2023
Calpine Power America	Solar PV	63	Kings	25	2022
Calpine Power America	Solar PV	132	Kern	10	2022
Constellation NewEnergy	Solar PV	200	Riverside	12	2022
Constellation NewEnergy	Solar PV	260	Kern	13	2022
Constellation NewEnergy	Solar PV	52	San Bernadino	11	2023
Constellation NewEnergy	Solar PV	200	Riverside	15	2023
Shell Energy North America	Solar PV	200	Kern	15	2023
Shell Energy North America	Solar PV	132	Riverside	15	2022
Shell Energy North America	Solar PV	100	La Paz, AZ	10	2023
Shell Energy North America	Wind	100	Riverside	12	2021
<b>Total</b>		<b>1,964</b>			

Data Source: ESPs' Draft RPS Procurement Plans (July 2021) and ESPs' Annual RPS Compliance Reports (August 2021)

## Progress in Long-Term Contracting

A key aspect of meeting RPS requirements is meeting the long-term contracting requirement which requires all retail sellers to procure 65 percent of their RPS portfolios using long-term contracts<sup>61</sup> beginning in Compliance Period 2021–2024. Retail sellers were allowed to elect early compliance with the new long-term contracting requirements.<sup>62</sup> Retail sellers who elect to comply early with the 65 percent long-term contracting requirement must begin procuring 65 percent of their RPS requirements from long-term contracts in Compliance Period 2017–2020, instead of Compliance Period 2021–2024. Six retail

<sup>61</sup> Long-term contracts are defined as contracts with a term of ten or more years.

<sup>62</sup> See D.17-06-026 "Decision Revising Compliance Requirements for the California Renewables Portfolio Standard in Accordance with Senate Bill 350," for more information.

sellers, including all IOUs, have elected to early-comply.<sup>63</sup> This section uses RPS compliance report data to identify the status and progress of all retail sellers in meeting the long-term contracting requirement. See Chapter IV for the status and progress regarding overall RPS requirements.

The IOUs and SMJUs are well-positioned to meet the 65 percent long-term contracting requirement. Some CCAs' and ESPs' forecasted shortfalls in meeting the 65 percent long-term contracting requirement; thus, raising concerns for their potential failure in meeting overall RPS requirements.

The table below illustrates how much of the IOUs' and SMJUs' procurement quantity requirement is met with long-term contracts to date for Compliance Period 2017–2020 and Compliance Period 2021–2024.

Table 18: IOU and SMJU Percentage of Long-Term Requirement Met <sup>64</sup>		
	Forecasted Percentage of Requirement Met	
Retail Seller Type	Compliance Period 2017–2020	Compliance Period 2021–2024
IOU	100%	100%
SMJU	100%	100%

*Data Source: Retail sellers' Annual RPS Compliance Reports (August 2021)*

**Large Investor-Owned Utilities:** Each IOU has elected to comply early with Compliance Period 2021–2024 and the three large IOUs are forecasted to meet their 2017–2020 long-term contracting requirements. Nearly all RPS contracts executed by the three IOUs for the purposes of complying with the RPS program have contract term lengths of 10 or more years.

**Small and Multi-Jurisdictional Utilities:** The three SMJUs are well-positioned to meet their future long-term contracting requirements. BVES and PacifiCorp have elected to early-comply with Compliance Period 2021–2024 and are forecasted to meet their 2017–2020 long-term contracting requirements. BVES must execute additional long-term contracts to meet its long-term requirement for Compliance Period 2025–2027, as it has one contract fulfilling its long-term obligations that expires at the end of 2023. Based on their current load forecasts for Compliance Period 2021–2024, Liberty and PacifiCorp are forecasted to be sufficiently contracted to meet their long-term contracting requirement. Liberty has already executed long-term contracts, and nearly all of PacifiCorp's RPS procurement from 2019 through 2030 is derived from long-term contracts.

**Community Choice Aggregators:** All the CCAs are forecasted to meet their long-term procurement requirement in Compliance Period 2017–2020, but some need to make more progress to meet the 65 percent long-term procurement requirement commencing in Compliance Period 2021–2024.

<sup>63</sup> Retail sellers with early compliance elections include PG&E, SCE, SDG&E, BVES, PacifiCorp, and The Regents of the University of California.

<sup>64</sup> The procurement contracts have not been fully reviewed by the CPUC and these are forecasted compliance percentages based on self-reported data.

**Table 19: Forecast Percentage of CCA Long-Term Requirements Met<sup>65</sup>**

CCA Name	Compliance Period 2017–2020	Compliance Period 2021–2024
Apple Valley Choice Energy	100%	100%
Central Coast Community Energy	100%	100%
City of Baldwin Park	100%	100%
City of Commerce	N/A	0%
City of Palmdale	N/A	0%
City of Pomona	100%	100%
City of Santa Barbara	N/A	0%
Clean Energy Alliance	N/A	0%
Clean Power Alliance	100%	100%
CleanPowerSF	100%	100%
Desert Community Energy	100%	100%
East Bay Community Energy	100%	63%
King City Community Power	100%	3%
Lancaster Choice Energy	100%	100%
Marin Clean Energy	100%	100%
Orange County Power Authority	N/A	0%
Peninsula Clean Energy	100%	95%
Pico Rivera Innovative Municipal Energy	100%	100%
Pioneer Community Energy	100%	81%
Rancho Mirage Energy Authority	100%	100%
Redwood Coast Energy Authority	100%	100%
San Diego Clean Power	N/A	34%
San Jacinto Power	100%	100%
San José Clean Energy	100%	10%
Silicon Valley Clean Energy	100%	100%
Solana Energy Alliance	100%	100%
Sonoma Clean Power Authority	100%	100%
Valley Clean Energy	100%	100%
Western Community Energy	100%	0%

Data Source: CCAs' Annual RPS Compliance Reports (August 2021)

Out of the 29 CCAs that plan to serve load in Compliance Period 2021–2024, 23 CCAs have already made progress towards meeting their long-term requirements. There are several CCAs that have executed sufficient RPS energy from long-term contracts to report meeting their 65 percent long-term contracting requirement ahead of schedule. However, the majority of the CCA long-term contracts are currently under development and have not yet reached commercial operation, and final assessments of the 65 percent requirement are based on delivered generation.

<sup>65</sup> The procurement contracts have not been fully reviewed by the CPUC and these are forecasted compliance percentages based on self-reported data.

Six CCAs<sup>66</sup> that have or plan to serve load in Compliance Period 2021–2024 have not procured any long-term RPS contracts. Out of these six, one has procured only short-term contracts<sup>67</sup> and five have no RPS contracts for 2021–2024. Short-term RPS contracts executed by the CCAs are generally either energy from the IOUs’ portfolios sold through RPS sales solicitations or energy from other market participants.

**Electric Service Providers:** Historically, most ESPs have only executed the minimum quantity required for long-term contracting. With the long-term contracting requirement increasing from 0.25 percent of retail sales<sup>68</sup> to 65 percent of a retail sellers’ procurement quantity requirement, the ESPs collectively need to execute significant amounts of long-term contracts to meet the RPS requirements.

Of the ten ESPs that forecast serving load in the 2021–2024 Compliance Period, three ESPs forecast having enough long-term RPS energy procurement and six have procured some long-term RPS energy towards meeting the 65 percent requirement. Four ESPs will stop serving load.

**Table 20: Forecasted ESP Percentage of Long-Term Requirements Met<sup>69</sup>**

ESP Name	Compliance Period 2017–2020	Compliance Period 2021–2024
3 Phases Renewables	100%	78%
American PowerNet	100%	N/A
Calpine Energy Solutions	100%	87%
Calpine Power America	100%	100%
Commercial Energy of California	100%	100%
Constellation NewEnergy	100%	97%
Direct Energy Business	100%	100%
EDF Industrial Power Services	10%	84%
Just Energy Solutions	100%	N/A
Pilot Power Group	100%	39%
Shell Energy North America	100%	57%
Tiger Natural Gas	100%	N/A
UC Regents	100%	100%

*Data Source: ESPs’ Annual RPS Compliance Reports (August 2021)*

<sup>66</sup> The six CCAs that have not procured any long-term RPS energy include City of Commerce, City of Santa Barbara, City of Palmdale, Clean Energy Alliance, Orange County Power Alliance, and Western Community Energy.

<sup>67</sup> The CCAs is Clean Energy Alliance.

<sup>68</sup> See D.12-06-038 “Decision Setting Compliance Requirements for the California Renewables Portfolio Standard Program,” for more information on the long-term contracting requirement under SB 2 (1X) (Simitian, 2011).

<sup>69</sup> The procurement contracts have not been fully reviewed by the CPUC and these are forecasted compliance percentages based on self-reported data.

## IV. Compliance and Enforcement

This chapter provides an overview of the RPS program’s compliance and enforcement and the status of the CPUC’s current compliance determinations and enforcement activities. Each August, retail sellers are required to submit annual preliminary RPS Compliance Reports to the CPUC that contain historical and forecasted data on their renewable procurement. The CPUC uses these reports to conduct analysis of retail sellers’ progress towards the RPS mandate and identify any compliance risks based on the information provided by retail sellers.. The reports are necessary for the CPUC to quantify each retail seller’s procurement and facilitates determination of the forecasted compliance status of each retail seller.

Specifically, compliance with the RPS program is measured in eligible RECs<sup>70</sup> and evaluated on a multi-year compliance basis. The CPUC works closely with the CEC to make formal compliance determinations, using the CEC’s Verification Report<sup>71</sup> to confirm each retail seller’s annual REC claims. The CEC utilizes reports from the Western Renewable Energy Generation Information System (WREGIS)<sup>72</sup> to determine the amount of renewable electricity generated by each eligible facility. The CEC analyzes the eligibility of the facility, the quantity of RECs created, and ensures each REC claimed by retail sellers is eligible for compliance and not double-counted. The CPUC reviews retail sellers’ annual RPS Compliance Reports in conjunction with the CEC’s Verification Report to determine compliance. These compliance determinations cannot take place until the CEC completes its verification process and the CPUC thereafter completes its compliance review. Consequently, there have not been any enforcement actions related to the CPUC’s compliance review of Compliance Period 2017-2020. Additional details regarding RPS compliance and enforcement are in Appendix B of this report.

### Annual Compliance Reviews

---

Enforcement action is taken by the CPUC once the compliance period has ended and the CEC has verified all procurement claims. In 2019, Governor Newsom signed into law Senate Bill 155 (Bradford, 2019) which requires the CPUC, as part of its annual RPS compliance reports review process, to (a) notify retail sellers that are at risk of not meeting the renewable procurement requirements for the current or future RPS compliance period and (b) provide recommendations regarding satisfying those requirements.

Annual monitoring and notifications to retail sellers provide the State and stakeholders greater transparency concerning which retail sellers may be at risk of not meeting their procurement requirements, and what actions the retail sellers should take to ensure their compliance with the RPS program.

The tables below show the results from the 2021 annual preliminary RPS Compliance Report review and are based on data reported by all retail sellers in their annual preliminary RPS Compliance Reports. Retail sellers that have contracted for a quantity equal to or greater than 100% of their RPS procurement quantity requirements (PQR), and met the long-term contracting requirement and portfolio balance requirement (PBR) for near-term Compliance Periods were considered to be “On Track.” Retail sellers that have not

<sup>70</sup> A REC is a market-based instrument that represents the property rights to the environmental, social, and other non-power attributes associated with the production of electricity from a renewable source. RECs represent a claim on the renewable attributes of one unit of energy (MWh) generated from a renewable resource. RECs are "created" by a renewable generator and its creation is simultaneous with the production of electricity. When an LSE decides to use RECs for compliance with the State’s RPS program, it must be retired and cannot be used again.

<sup>71</sup> See <https://www.energy.ca.gov/programs-and-topics/programs/renewables-portfolio-standard/renewables-portfolio-standard-1-0> for the most recent RPS Verification Report issued by the CEC.

<sup>72</sup> The Western Renewable Energy Generation Information System (WREGIS) is an independent renewable energy tracking system for the region covered by the Western Electricity Coordinating Council (WECC). All renewable generation in the WECC must be tracked through WREGIS and used for state RPS programs.

met their PQR, PBR, and/or long-term contracting requirement were considered to be “At Risk” of non-compliance.

The retail sellers at risk of non-compliance were placed into one of three risk levels:

- **High Risk:** Retail sellers that have contracted for less than 50 percent of their RPS procurement quantity requirements and/or have not met their long-term requirement for the compliance period.
- **Medium Risk:** Retail sellers that have contracted for between 50 percent and 75 percent of their RPS procurement quantity requirements for the compliance period and/or have not met their long-term requirement for the compliance period.
- **Low Risk:** Retail sellers that have contracted for more than 75 percent of their RPS procurement quantity requirements but have not yet contracted 100 percent.

Table 21: IOU and SMJU Annual Compliance Review			
Reporting LSE	LSE Type	Compliance Period 2021–2024	Risk Level
Pacific Gas and Electric	IOU	On Track	-
Southern California Edison	IOU	On Track	-
San Diego Gas & Electric	IOU	On Track	-
Bear Valley Electric Service	SMJU	At Risk	Medium
PacifiCorp	SMJU	At Risk	Low
Liberty Utilities	SMJU	At Risk	Low

*Data Source: IOU and SMJU RPS Compliance Reports (August 2021)*

**IOU/SMJU:** All of the large IOUs are on track to meet their 2017-2020 and 2021-2024 Compliance period requirements. All three SMJUs must procure additional RPS energy to meet their future compliance requirements, and Liberty Utilities’ August 2021 compliance report did not show sufficient procurement to meet its 2017-2020 compliance requirements.

Table 22: CCA Annual Compliance Review		
Reporting LSE	Compliance Period 2021–2024	Risk Level
Apple Valley Choice Energy	At Risk	Low
Central Coast Community Energy	On Track	-
City of Baldwin Park	At Risk	Low
City of Commerce	At Risk	High
City of Palmdale	At Risk	High
City of Pomona	At Risk	Low
City of Santa Barbara	At Risk	High
Clean Energy Alliance	At Risk	High
Clean Power Alliance	On Track	-
CleanPowerSF	On Track	-
Desert Community Energy	At Risk	Low
East Bay Community Energy	At Risk	Medium
King City Community Power	At Risk	High
Lancaster Choice	At Risk	Medium
Marin Clean Energy	On Track	-
Orange County Power Authority	At Risk	High
Peninsula Clean Energy	On Track	-
Pico Rivera Innovative Municipal Energy	At Risk	Low
Pioneer Community Energy	At Risk	Medium
Rancho Mirage Energy Authority	At Risk	Medium
Redwood Coast Energy Authority	On Track	-
San Diego Community Power	At Risk	High
San Jacinto Power	At Risk	Medium
San José Clean Energy	At Risk	Medium
Silicon Valley Clean Energy	On Track	-
Solana Energy Alliance	On Track	-
Sonoma Clean Power	On Track	-
Valley Clean Energy Alliance	On Track	-
Western Community Energy	At Risk	High

*Data Source: CCA RPS Compliance Reports (August 2021)*

**CCA:** All CCAs serving load in the 2017–2020 compliance period reported meeting requirements. Nineteen must procure additional RPS energy to meet their future compliance requirements.

Table 23: ESP Annual Compliance Review		
Reporting LSE	Compliance Period 2021–2024	Risk Level
3 Phases Renewables	At Risk	Medium
Calpine Energy Solutions	At Risk	Medium
Calpine Power America	On Track	-
Commercial Energy of CA	On Track	-
Constellation NewEnergy	At Risk	Medium
Direct Energy Business	On Track	-
EDF Industrial Power	At Risk	High
Pilot Power Group	At Risk	High
Shell Energy North America	At Risk	High
Regents of University of CA	On Track	-

*Data Source: ESP RPS Compliance Reports (August 2021)*

**ESP:** EDF Industrial Power Service’s report does not show them meeting their RPS compliance period 2017–2020 requirements. Six ESPs have compliance risk for meeting their RPS Compliance Period 2021–2024 requirements. The three ESPs with high risk levels have not met their PQR, PBR, or long-term contracting requirement. The three ESPs with medium risk levels have executed sufficient renewables contracts, but have not yet met at least one compliance element (PQR, PBR, or long-term contracting requirement).

## V. 2020 RPS Program Activities

This chapter identifies and discusses key 2020/2021 RPS program activities and accomplishments including implementation of legislation, procurement activities, and interagency planning and coordination. Appendix E includes a detailed list of RPS program activities.

### Implementation of SB 100

---

On September 10, 2018, Governor Brown signed SB 100 (de León, 2018) into law. SB 100 accelerates and increases the RPS requirements to 60 percent by 2030 and establishes a goal that renewable and zero-carbon resources supply 100 percent of electric retail sales to California end-use customers by 2045. In June 2019,<sup>73</sup> the CPUC implemented SB 100 by adopting the new RPS PQRs and compliance targets.<sup>74</sup> SB 100's goal of carbon free resources will be examined in the IRP proceeding.<sup>75</sup>

SB 100 also directed the CEC, CPUC, and the California Air Resources Board (CARB) to collaborate on a joint agency report to evaluate the challenges and opportunities in implementing SB 100. The SB 100 Joint Agency Report was issued in March 2021 and included an initial assessment of the additional energy resources and the resource building rates needed to achieve 100 percent clean electricity, along with the associated costs and benefits.<sup>76</sup>

### Integrated Resource Planning and RPS Alignment

---

Since SB 350 was adopted in 2015, the CPUC has been coordinating between the RPS program and the IRP program. The CPUC adopted an IRP framework in 2018 to coordinate and refine long-term planning requirements for CPUC-jurisdictional retail sellers, which includes planning for increasing renewables.<sup>77</sup> Activities in the IRP proceeding are complementary to RPS procurement activities and resource planning for the electric sector.

The CPUC is working to align the IRP and RPS proceedings to further coordinate planning efforts and address the overlap in reporting requirements. In September 2020, the CPUC released a Staff proposal that incorporates RPS Procurement Plans into retail sellers' IRP filings and requires retail sellers to submit IRP off-year filings to meet annual statutorily mandated RPS reporting requirements. The Staff proposal included a streamlined, coordinated schedule to allow the RPS and IRP proceedings to converge on the same timeline, and parties to the RPS proceeding have commented on this Staff proposal. The Staff proposal and party comments are under consideration by the CPUC, and next steps will be provided by subsequent CPUC decision(s) or ruling(s).<sup>78</sup>

---

<sup>73</sup> See D.19-06-023.

<sup>74</sup> As mandated by the amendments to § 399.15(b)(2)(B).

<sup>75</sup> See R.16-02-007.

<sup>76</sup> See <https://www.energy.ca.gov/sb100>.

<sup>77</sup> See D.18-02-018.

<sup>78</sup> To be issued in R.18-07-003 or R.16-02-007 or subsequent proceedings.

## Additional Mandated RPS Procurement Activities

---

The IOUs are required to procure renewable energy through mandated programs to meet other State policy goals. Although SMJUs, CCAs, and ESPs are not required to procure RPS resources through these mandated programs, all customers pay for the programs.<sup>79</sup>

### Feed-in Tariff Programs

California's Feed-in Tariff (FIT) program is a policy mechanism designed to accelerate investment in small, distributed renewable energy technologies. The goal of the FIT program is to offer long-term contracts and price certainty for financing renewable energy investments to aid in transforming these markets. The RPS program has two FIT programs:

- Renewable Market Adjusting Tariff (ReMAT)
- Bioenergy Market Adjusting Tariff (BioMAT)

Both programs have capacity procurement mandates established by the Legislature, which are allocated to each IOU based on their proportionate share of statewide electric load served.

### RENEWABLE MARKET ADJUSTING TARIFF (REMAT)

ReMAT<sup>80</sup> is a FIT program established by SB 32 (Negrete McLeod, 2009) and SB 2 (1X) (Simitian, 2011), which commenced offering fixed-price standard contracts in 2013. ReMAT is an IOU procurement program for small RPS-eligible facilities (generating up to 3 MW),<sup>81</sup> such as small hydro, solar PV, and wind, to sell renewable electricity to utilities under standard terms and conditions.

In October 2020, the Commission approved a decision that reopened the ReMAT program after being suspended on December 15, 2017.<sup>82</sup> The revised program has administratively set prices by product category with a time-of-delivery adjustment.<sup>83</sup> The IOUs subsequently reopened their ReMAT programs in February 2021 and, as of August 2021, have executed ReMAT contracts for 2.3 MW of small hydro resources.

### BIOENERGY MARKET ADJUSTING TARIFF (BIOMAT)

BioMAT is a FIT program established by SB 1122 (Rubio, 2012), which set a 250 MW procurement program requirement for small-scale bioenergy projects. The program was implemented in 2014<sup>84</sup> and uses a standard contract and a market-based mechanism to arrive at the offered program contract price.

---

<sup>79</sup> Per SB 859, all customers are required to support the BioRAM program through a non-bypassable charge as implemented in D.18-12-003; the BioMAT program implemented a similar non-bypassable charge in D.20-08-043 as part of program improvements.

<sup>80</sup> The ReMAT program replaced California's original FIT program established by AB 1969 (Yee, 2006) to expand the program and increase eligible project size from a maximum of 1.5 MW to 3 MW.

<sup>81</sup> AB 1979 (Bigelow, 2016) modified the program to increase the maximum project capacity to 4 MWs for conduit hydroelectric facilities, if they deliver no more than 3 MW.

<sup>82</sup> The ReMAT Program was found by the Northern District Court of California to be out of compliance with the Public Utilities Regulatory Policies Act (PURPA) (*Winding Creek Solar LLC v. Peevey, et al.*). As a result the CPUC suspended the ReMAT program. The federal court order was upheld by the Ninth Circuit U.S. Court of Appeals on July 29, 2019: <http://cdn.ca9.uscourts.gov/datastore/opinions/2019/07/29/17-17531.pdf>.

<sup>83</sup> See D.20-10-005: <https://docs.cpuc.ca.gov/SearchRes.aspx?DocFormat=ALL&DocID=348746212>.

<sup>84</sup> See D.14-12-081.

The goal of the BioMAT program is to promote competition for entrants to the bioenergy market using a simple procurement mechanism. BioMAT allocates procurement to the discrete bioenergy categories of Biogas, Agriculture, and Sustainable Forest Management. The table below shows the BioMAT targets and capacity (MW) procured over the life of the program by the three IOUs.

<b>BioMAT Category</b>	<b>BioMAT MW Allocation</b>	<b>MW Contracted</b>	<b>MW Remaining</b>	<b>Contract Price (\$/MWh)</b>
Biogas	110	10	100	127.72
Dairy/Agriculture	90	26.5	63.5	187.72 (Dairy) 183.72 (Other Agriculture)
Sustainable Forest Management	50	11	39	199.72
<b>Total</b>	<b>250</b>	<b>47.5</b>	<b>202.5</b>	<b>-</b>

*Data Source: CPUC RPS Database, October 2021*

**Category 1 (Biogas):** Since the start of the BioMAT program, five biogas contracts have been executed across the three IOUs for a total of 10 MW of capacity.<sup>85</sup> All contracts in this category have been executed at the program starting price of \$127.72/MWh.

**Category 2 (Agriculture):** This category consists of Dairy and Other Agriculture sub-categories. There has been a total of 17 Category 2 contract executions in PG&E's and SCE's service territories for a total of 26.5 MW of capacity. PG&E and SCE executed three Category 2 – Other Agriculture contracts for a total of 20 MWs of capacity.

**Category 3 (Sustainable Forest Management):** In 2020, one Forest contract was executed by PG&E for a total of 3 MW. In total, four active Forest contracts have been executed by PG&E for a total of 11 MW of capacity. All contract executions in this category have occurred at a price of \$199.72/MWh.

### **BioMAT Program Review**

The BioMAT program underwent a formal program review in 2018 that assessed BioMAT program performance. After the review, the CPUC issued a draft Staff proposal that recommended programmatic and procedural improvements to the program. The goal of the program review was to simplify the BioMAT procurement process, enable expanded program participation, address program barriers, reduce ratepayer expenditures, and promote statewide goals. The CPUC held a workshop in July 2019 to engage public comment and stakeholder collaboration on potential BioMAT program changes proposed by the CPUC.<sup>86</sup>

In March 2020, the final Staff proposal was issued to parties in Rulemaking 18-07-003. The Staff proposal recommended changes intended to simplify procurement, enable increased participation, reduce ratepayer expenditures, and help achieve statewide goals. Decision (D).20-08-043<sup>87</sup> was issued in September 2020

<sup>85</sup> SDG&E's BioMAT contract with Lakeside Biogas for 3 MW of capacity was terminated in March 2021.

<sup>86</sup> For BioMAT workshop materials, visit [https://www.cpuc.ca.gov/SB\\_1122/](https://www.cpuc.ca.gov/SB_1122/).

<sup>87</sup> See D.20-08-043, Decision Revising the Bioenergy Market Adjusting Tariff: <https://docs.cpuc.ca.gov/PublishedDocs/Published/G000/M346/K112/346112503.PDF>

directing changes to the BioMAT program rules, contract terms, as well as clarifications to the procurement process.

**BioMAT Technical Working Group on GHG Emissions**

Pursuant to D.20-08-043, in April 2021 the CPUC established a technical working group of stakeholders to develop a project specific lifecycle greenhouse gas emissions reduction model to quantify the net emissions of the BioMAT program project operations. The CPUC solicited participation from technical experts from parties, public agencies, academia, industry, national labs, and research institutions. The working group is utilizing a Lifecycle Assessment (LCA) approach to assessing BioMAT project emissions by analyzing the impacts of these emissions relative to an alternate baseline scenario. The final BioMAT LCA tool is expected to be available for public comment in 2022.

**BIOENERGY RENEWABLE AUCTION MECHANISM (BIORAM)**

In 2016, the CPUC implemented Governor Brown’s October 2015 Emergency Order Addressing Tree Mortality by establishing the BioRAM program. BioRAM uses the RPS standardized renewable auction mechanism (RAM) contract to streamline the procurement process.<sup>88</sup> Subsequently, SB 859 (2016)<sup>89</sup> directed additional BioRAM procurement which resulted in the large IOUs requirement to procure 146 MWs of bioenergy from High Hazard Zones (HHZ)<sup>90</sup> fuel. Senate Bill 901 (Dodd, 2018) further amended the BioRAM program to add program flexibility and extend certain biomass contracts by five years. In January 2019, the CPUC issued Resolution E-4977 implementing Senate Bill 901.<sup>91</sup>

The table below lists the IOUs’ BioRAM contracts.

<b>Table 25: IOU BioRAM Contract Summary</b>			
<b>IOU</b>	<b>Facility Name</b>	<b>Location</b>	<b>Capacity (MW)</b>
PG&E	<b>Burney</b>	<b>Shasta County, CA</b>	<b>29</b>
PG&E	<b>Wheelabrator Shasta</b>	<b>Shasta County, CA</b>	<b>34</b>
PG&E	<b>Woodland Biomass</b>	<b>Yolo County, CA</b>	<b>25</b>
SCE	<b>Rio Bravo Fresno</b>	<b>Fresno County, CA</b>	<b>24</b>
SCE	<b>Rio Bravo Rocklin</b>	<b>Placer County, CA</b>	<b>24</b>
SCE	<b>Pacific Ultrapower Chinese Station</b>	<b>Tuolumne County, CA</b>	<b>18</b>
SDG&E	<b>Honey Lake Power Company / Greenleaf</b>	<b>Lassen County, CA</b>	<b>24</b>
<b>Total</b>			<b>178</b>

Data Source: CPUC RPS Database, October 2021

<sup>88</sup> See [https://www.ca.gov/archive/gov39/wp-content/uploads/2017/09/10.30.15\\_Tree\\_Mortality\\_State\\_of\\_Emergency.pdf](https://www.ca.gov/archive/gov39/wp-content/uploads/2017/09/10.30.15_Tree_Mortality_State_of_Emergency.pdf).

<sup>89</sup> Senate Bill 859 (Committee on Budget and Fiscal Review, 2016) directs the CPUC to extend contracts for biomass facilities and addresses the statewide tree mortality issue by requiring that 60 percent of forest biomass used to create bioenergy is harvested from Tier 1 and Tier 2 high hazard zones. In 2018, Governor Brown signed SB 901 (Dodd, 2018), which modifies the HHZ definition and expands flexibility for certain BioRAM facilities that choose to modify their contracts.

<sup>90</sup> For more information on high hazard zone areas, see CALFIRE’s website: <https://frap.fire.ca.gov/mapping/maps/>.

<sup>91</sup> Resolution E-4977 ordered the IOUs to amend their BioRAM contracts to expand the eligible fuel stock that can be classified as HHZ fuel, offer BioRAM sellers a monthly opt-out and reporting option for annual fuel use requirements, and remove missed fuel requirements as an event of default.

<https://docs.cpuc.ca.gov/PublishedDocs/Published/G000/M264/K677/264677864.PDF>

The IOUs collect quarterly data from the BioRAM facilities to track the amount of bioenergy that is being produced from HHZ forest fuel. In addition, the IOUs are required to perform an annual audit to verify the amount of HHZ fuel that BioRAM facilities utilize on a calendar year basis and measure the verified amount. In 2021, the IOUs completed independent audits on each facility’s 2020 HHZ fuel usage.

HHZ fuel usage data for the current IOU-contracted BioRAM facilities is aggregated in Table 26.

<b>Table 26: High Hazard Zone (HHZ) Forest Fuel Usage from BioRAM Contracts</b>				
<b>Year</b>	<b>BioRAM HHZ % Requirements</b>	<b>Average % of Total Biomass Fuel from HHZ Fuel</b>	<b>Total HHZ Delivered (BDT)<sup>92</sup></b>	<b>Total HHZ Usage To-Date (BDT)</b>
2017 <sup>93</sup>	50%	54.6%	267,745	267,745
2018	60%	56.5%	671,847	939,592
2019	60% and 80% <sup>94</sup>	84%	823,515	1,763,107
2020	60% and 80%	79%	829,522	2,592,629

*Data Source: CPUC Aggregated Data from IOUs as Described in Annual HHZ Fuel Verification Reports*

## Interagency Program Planning and Coordination

The CPUC coordinates closely with its sister state agencies on an ongoing basis to promote and implement consistent statewide RPS policies that benefit all Californians. The CPUC, for instance, works with the CEC, CARB, California Independent System Operator (CAISO), and CAL FIRE on issues and projects such as: statewide RPS compliance and enforcement, wildfire safety and mitigation, offshore wind development, and transmission planning.

### Compliance and Enforcement

The CPUC coordinates closely with the CEC to ensure a consistent policy approach for RPS compliance and enforcement. The CPUC depends on the CEC’s compliance verification report to inform its RPS compliance determinations. See Chapter IV for more details on RPS compliance and enforcement.

### Bioenergy Issues and Forest Management

The issue of forest health and its impact on wildfire mitigation intersects with the RPS programs of BioMAT and BioRAM. To ensure that these programs effectively address the State’s policy goals, CPUC staff work

<sup>92</sup> Bone Dry Tons, which commonly accepted to be a 1:1 equivalent with megawatt-hours (MWh), refers to the measurement of biomass that has a 0 percent moisture content.

<sup>93</sup> The 2017 amount of delivered HHZ fuel has been updated from the 2018 RPS Annual Report to reflect the aggregate HHZ Annual Fuel Verification Reports.

<sup>94</sup> Individual tree mortality BioRAM facility HHZ requirements varied based on the contract.

with stakeholders and other state agencies to address program costs and barriers to HHZ woody biomass procurement.

The CPUC participates in regular, ongoing forums that address the State’s wildfire mitigation efforts due to high fire threat exacerbated by prolonged drought conditions, bark beetle infestation, and climate change. Specifically, the CPUC is an active participant in the Governor’s Wildfire and Forest Resilience Task Force, and RPS staff participate in monthly meetings of the California Forest Biomass Working Group. In 2020, the CPUC participated in a cross-agency effort to identify strategies that consider the role of bioenergy and align across agencies on woody biomass utilization in the context of State goals, including climate change, air quality, and affordability.

## Offshore Wind Task Force and Marine Renewable Energy Working Group

The CPUC is a member of the California Offshore Wind Task Force (Task Force) and the Marine Renewable Energy Working Group (MREWG), inter-agency efforts led by the CEC and Ocean Protection Council, respectively. The Task Force seeks to promote regulatory consistency and to improve scientific data that balances emerging technologies and planning for siting marine renewables for the energy needs of all Californians. The MREWG coordinates across state agencies to streamline regulatory processes.

The CPUC’s role is to offer insight into the RPS procurement and IRP processes, as well as details of CPUC proceedings that inform procurement need from offshore wind. The CPUC supports offshore wind development with the caveat that additional research and data are needed before moving forward. The CPUC considers offshore wind in its IRP process, where the resource is available for potential selection in the IRP capacity expansion model. The IRP proceeding continues to refine offshore wind data to optimally inform the procurement process.

## Transmission Development Supporting RPS Implementation

---

### SCE’s West of Devers 220kV Upgrade Project

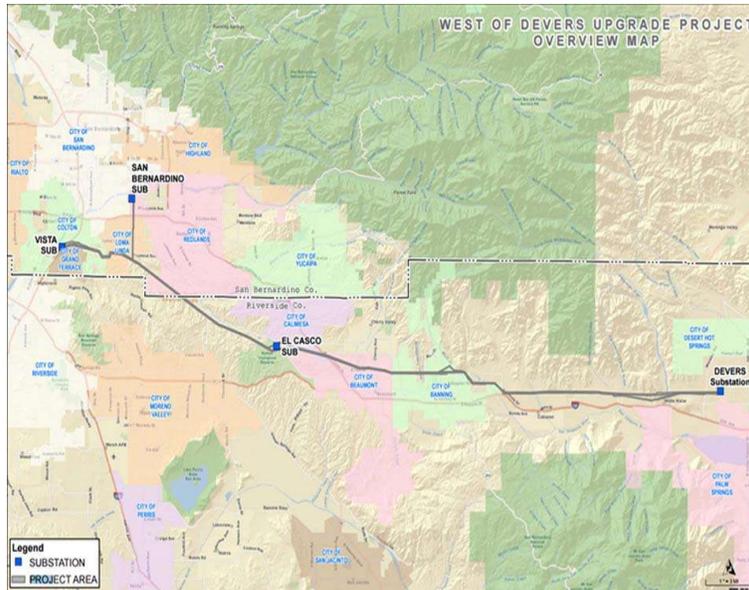
The West of Devers Upgrade was approved in D.16-08-017 by the CPUC. After a lengthy CEQA/NEPA review in conjunction with the BLM, construction of this major project is complete, and on May 14, 2021 the project was fully energized. This project will allow deliverability of new renewable resources — more than 7,000 MW of renewable and battery energy storage in the coming years — from desert areas in the eastern part of California to the population centers of the Inland Empire and San Gabriel Valley.

Construction began in October 2017 and after four years the final restoration and monitoring activities are expected to be completed in the fall of 2021. The project consisted of removing and replacing conductors and supporting structures (386 lattice steel towers and 83 tubular steel poles) on four separate circuits of 220-kV transmission lines through the existing 48-mile corridor from the Devers substation near Palm Springs to the Vista and San Bernardino substations in Grand Terrace and San Bernardino, respectively — about 200 miles of power lines.

The project triples the capacity of power delivery from 1,600 MW to 4,800 MW, which helps with system reliability in Southern California population centers during peak summer demand. As part of the West of Devers Project, SCE entered into a transaction with Morongo Transmission for it to invest in the project, which allowed SCE to build the project across the Morongo Indian Reservation. The total cost of the project was \$740 million, with Morongo Transmission expected to invest \$400 million.

The project was built in an environmentally beneficial way by rebuilding within a corridor containing existing transmission lines, despite the unique operational challenges of this approach. The project spans several Riverside and San Bernardino communities, including Banning, Beaumont, Calimesa, Colton, Grand Terrace, Loma Linda, Redlands and other unincorporated areas of Riverside and San Bernardino counties. The corridor also passes through the reservation trust land of the Morongo Band of Mission Indians, a key partner with SCE in its bid to obtain environmental permits.

Commercial operation of the line began six months ahead of schedule and the project’s success is a testament to the commitment and dedication of all the project team members and multitude of stakeholders.



### SCE’s Eldorado – Lugo – Mojave Series Capacitor Project

SCE filed an application with the CPUC for a Certificate of Public Convenience and Necessity (CPCN) on April 19, 2019 requesting to construct the Eldorado – Lugo – Mojave (“ELM”) 500 kV Series Capacitor Project. The project had previously been approved through the CAISO’s 2013-2014 Transmission Planning Process. SCE proposes the ELM Project to deliver electricity from renewable and conventional generation resources outside of California to help meet growing electricity demand in the region, as well as to reduce greenhouse gases.

The ELM Project consists of the following major components: 1) Construct two new 500 kV mid-line series capacitors (the proposed Newberry Springs Series Capacitor and Ludlow Series Capacitor) and associated equipment; and 2) Relocate, replace, or modify existing transmission, sub-transmission, and distribution facilities at approximately 12 locations along the Eldorado-Lugo, Eldorado-Mohave, and Lugo-Mohave 500 kV Transmission Lines to address 14 potential overhead clearance discrepancies.

The Commission approved the Project on August 27, 2020. Preconstruction compliance review has been completed and NTP #1 was issued December 14, 2020, NTP #2 was issued April 1, 2021, NTP #3 was

issued May 19, 2021, and NTP #4 was issued June 8, 2021. Construction on California non-federal lands began January 2021. Construction is scheduled to continue through 2022.

## VI. RPS Workforce Development and Diversity

This chapter describes RPS workforce development activities of the IOUs, SMJUs, CCAs, and some of the ESPs, consistent with Public Utilities Code 913.4(f).<sup>95</sup> The state requires collection of this information to ensure an adequately trained and available workforce is able to support California’s increasing dependence on advanced renewable energy technologies. The sections below provide data and trends on workforce development related to retail sellers’ current RPS workforce, diversity of staff, strategies used to proactively recruit and train their staff to support California’s ambitious goals for reliable, clean energy. To provide this overview, the CPUC collected information on workforce development data directly from the IOUs, SMJUs, CCAs and ESPs.

### IOU Workforce Development

---

The IOUs report having a significant focus on offering equal employment opportunities with respect to the recruitment, hiring, and professional development practices associated with the implementation of the RPS program.

#### Current IOU RPS Workforce

Table 27 and Figure 11 provide an overview of the number of full-time PG&E, SCE, and SDG&E employees who worked on RPS-related issues from 2013–2021. In total, the three IOUs reported a cumulative increase in total employees working on RPS issues from 271 to 307 in the past year.

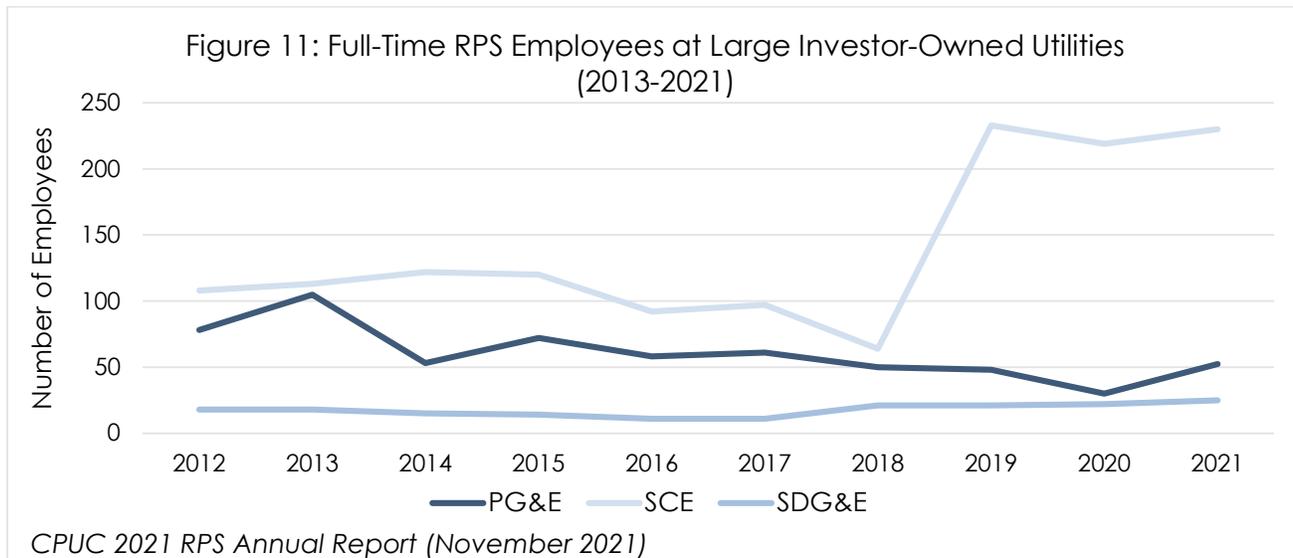
<b>Table 27: Total RPS Employees at Large Investor-Owned Utilities</b>									
	<b>2013</b>	<b>2014</b>	<b>2015</b>	<b>2016</b>	<b>2017</b>	<b>2018</b>	<b>2019</b>	<b>2020</b>	<b>2021</b>
<b>Totals</b>	236	190	206	161	169	135	302	271	307

*Data Source: PG&E, SCE, SDG&E, August 2021*

Figure 11 illustrates how the IOUs’ RPS employees have changed over the past ten years.<sup>96</sup>

<sup>95</sup> Public Utilities Code § 913.4(f) applies to retail sellers and the reporting in this chapter does not reflect the workforce development and diversity efforts of renewables project developers. Only half of the ESPs responded to the data request that this chapter is based on.

<sup>96</sup> This time series data is current as of August 2020 and includes employment data from January 2013 through July 2020.



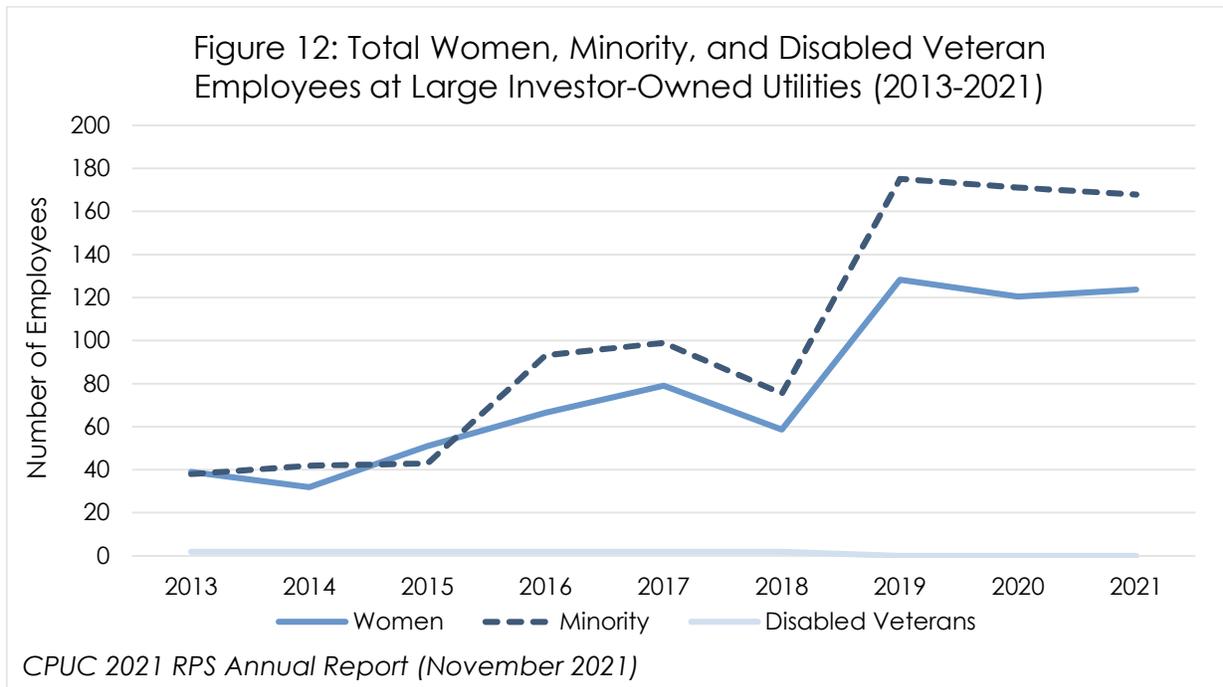
### Current IOU RPS Workforce Diversity

Each of the IOUs reported having company-wide diversity goals to build a workforce that reflects the diversity of the State of California. Common diversity efforts across the IOUs include providing equal employment opportunities in all aspects of their employment practices and hiring more women, minorities, and disabled veterans to implement the RPS program. In 2021, all three large IOUs reported working with organizations that focus on professional development for women, minorities, and disabled veterans.<sup>97</sup>

Figure 12 illustrates aggregated data on the number of women, minorities, and disabled veterans who are full-time employees who work on the RPS program at the three large IOUs.<sup>98</sup>

<sup>97</sup> General Order 156 refers to the rules governing the development of programs to increase participation of women, minority, disabled veterans, and LGBT business enterprises in procurement contracts from IOUs as required by Public Utilities Code §§ 8281-8286. The IOUs are compliant with General Order 156 requirements on Supplier Diversity. <https://www.cpuc.ca.gov/supplierdiversity/>.

<sup>98</sup> The value displayed for the total number of RPS employees is based on the percentage of time employees spend working on RPS issues (a range of 0 to 100 percent). Employees may fall into multiple categories (i.e., both minority female or female disabled veterans) and their time may be distributed between the RPS program and other non-RPS functions.



Data Source: PG&E, SCE, SDG&E, August 2021

PACIFIC GAS AND ELECTRIC COMPANY (PG&E):

Table 28 shows the number of PG&E’s RPS employees who are women, minorities, and disabled veterans compared with total PG&E RPS staff. In 2021, PG&E’s RPS staff was comprised of 21 percent women and 33 percent minority staff members.

Table 28: Pacific Gas and Electric’s Women, Minority, and Veteran RPS Employees from 2013–2021									
	RPS Employees (Full-Time)								
	2013	2014	2015	2016	2017	2018	2019	2020	2021
<b>Women</b>	39	20	36	13	27	19	20	10	11
<b>Minority</b>	38	35	32	28	29	22	24	18	17
<b>Veterans<sup>99</sup></b>	2	2	2	2	2	n/a <sup>100</sup>	n/a	n/a	n/a
<b>Total RPS Staff</b>	105	53	72	58	61	50	48	30	52

Data on the Ethnic and Racial backgrounds of PG&E RPS employees for 2019-2021 is displayed below in Table 29.

<sup>99</sup> In past reporting years, PG&E reported two U.S. military veteran employees working on the RPS Program, but neither reported having a disability.

<sup>100</sup> PG&E no longer tracks disabled veterans as a separate reporting category.

**Table 29: Pacific Gas and Electric’s Ethnic and Racial Background of RPS Employees from 2019–2021**

	RPS Employees (Full-Time)		
	2019	2020	2021
<b>American Indian or Alaskan Native</b>	0	0	0
<b>Asian</b>	20	14	12
<b>Black/African American</b>	1	0	0
<b>Hispanic/Latino</b>	4	3	4
<b>Native Hawaiian or Pacific Islander</b>	0	0	0
<b>Two or more races</b>	2	1	1
<b>White</b>	21	12	17
<b>Other</b>	0	0	0

SOUTHERN CALIFORNIA EDISON (SCE):

SCE reported that 46 percent of the company’s RPS employees are women and 64 percent identify as minorities. The table below shows the number of SCE’s RPS employees that are women, minority, or disabled veterans.

**Table 32: Southern California Edison’s Women, Minority, and Disabled Veteran RPS Employees from 2013–2021**

	RPS Employees (Full Time)								
	2013	2014	2015	2016	2017	2018	2019	2020	2021
<b>Women</b>	No Data			40	38	27	97	100	102
<b>Minority</b>	No Data			54	59	40	138	141	139
<b>Total RPS Staff</b>	113	122	120	92	97	64	233	219	230

The Ethnic and Racial backgrounds of SCE’s RPS employees are displayed below.

**Table 33: Southern California Edison’s Ethnic and Racial Background of RPS Employees from 2019–2021**

	RPS Employees (Full-Time)		
	2019	2020	2021
<b>American Indian or Alaskan Native</b>	0	0	0
<b>Asian</b>	76	78	75
<b>Black/African American</b>	15	13	14
<b>Hispanic/Latino</b>	40	41	40
<b>Native Hawaiian or Pacific Islander</b>	2	3	2
<b>Two or more races</b>	5	6	8
<b>White</b>	91	93	91
<b>Other</b>	0	0	0

SAN DIEGO GAS & ELECTRIC COMPANY (SDG&E):

Table 36 illustrates the number of SDG&E’s RPS employees who are women, minorities, or disabled veterans. The value displayed for the total number of RPS staff is based on the percentage of time employees spend working on RPS issues (a range of 0 to 100 percent).

Accordingly, the number of women and minority employees can be greater than the number of total RPS staff, given that an employee can fall under multiple reporting categories and their time dedicated to the RPS program may range from 0 to 100 percent.

<b>Table 36: San Diego Gas &amp; Electric’s Women, Minority, and Disabled Veteran RPS Employees from 2013–2021</b>									
	RPS Employees (Full-Time)								
	2013	2014	2015	2016	2017	2018	2019	2020	2021
<b>Women</b>	No Data	12	15	13	14	10	11	10	11
<b>Minority</b>	No Data	7	11	11	11	12	11	10	12
<b>Disabled Veterans</b>	No Data				2 <sup>101</sup>	n/a	0	0	0
<b>Total RPS Staff</b>	18	15	14	11	12	21	21	22	25

The Ethnic and Racial background of SDG&E’s RPS employees is shown below.

<b>Table 37: San Diego Gas &amp; Electric’s Ethnic and Racial background of RPS Employees from 2019–2021</b>			
	RPS Employees (Full-Time)		
	2019	2020	2021
<b>American Indian or Alaskan Native</b>	0	0	0
<b>Asian</b>	2	1	2
<b>Black/African American</b>	3	3	2
<b>Hispanic/Latino</b>	5	7	8
<b>Native Hawaiian or Pacific Islander</b>	0	0	0
<b>Two or more races</b>	1	1	0
<b>White</b>	10	10	13
<b>Other</b>	0	0	0

Recruiting Strategies

Recruiting efforts at each of the IOUs tend to utilize both broad candidate outreach and targeted strategies to recruit diverse candidates. In addition, the utilities also offer programs that can act as training and recruitment of future employees, including long-term efforts within California’s school systems.

<sup>101</sup> SDG&E reported disabled veterans for the 2018 California RPS Annual Report but excluded these data points in their 2019 workforce development reporting.

PG&E

**General Outreach**

As part of its broad recruiting efforts, PG&E utilizes online job boards to advertise to prospective external candidates.

**Diverse Employee Recruitment**

PG&E works with groups such as the Society of Women Engineers, National Society of Black Engineers, Society of Hispanic Professional Engineers, and targeted university programs to encourage a diverse candidate pool. PG&E is a member of the U.S. business leadership network of Disability:IN, a business-to-business national membership organization that focuses on sharing and developing strategies for inclusion of people with disabilities in the workplace. For executive level positions, PG&E partners with external executive search firms that specialize in recruiting women and minorities. PG&E does not have a formal company policy outlining diversity strategies for specific programs such as RPS but does have a policy for organizational diversity and inclusion.

**University Outreach**

PG&E has a “University Programs” team primarily focused on collegiate recruitment from California campuses. The University Programs team targets candidates majoring in engineering and information technology for both internships and regular full-time entry-level training positions. In addition to supporting campus specific activities like the Minorities in Engineer Program at Cal Poly, the team also participates & recruits at diversity job fairs for the National Society of Black Engineers, the Society of Hispanic Professional Engineers, and the Society of Women Engineers.

**Special Programs & Workforce Development**

PG&E designed and manages an external training program, PowerPathway, which partners with local workforce development community agencies to design and deliver training programs. Participation in these programs improves access to skilled trades job opportunities for those in historically underserved communities. In addition, the programs provide up to three years of career coaching for program graduates. Through its charitable giving process, PG&E also donates to workforce development agencies including Cypress Mandela and Swords to Plowshares.

SCE

**Recruitment**

SCE’s recruitment outreach generally include the following categories:

- Recruitment Marketing, Social Media, Recruitment Tools and Resources
- Professional and Community Association Outreach
- Military Veteran Outreach
- Individuals with Disabilities Outreach
- University & Campus Relations
- Internal Business Resource Group (BRG) Partnerships

## Recruitment Marketing, Social Media, Recruitment Tools, and Resources

The career site includes targeted pages focusing on women, individuals with disabilities, military veterans, diversity & inclusion, early career, and critical positions like cybersecurity, skilled trades, engineering, and IT.

SCE's career site is also fully mobile and accessible to individuals with disabilities. Visitors on the site and other channels are invited to join the SCE Talent Network that allows active and future job seekers to stay connected and updated on company news, events and job opportunities.

SCE also shares and promotes jobs and content on major social and job sites such as LinkedIn, Glassdoor, and Indeed for maximum visibility. Content developed and shared across our major channels is focused on company initiatives, storytelling and featuring employees across the organization with different backgrounds. To help the job opportunities and content reach particular demographics, they use targeted paid advertisements through LinkedIn, Facebook, Glassdoor, and Instagram.

To assist SCE with meeting federal contractor job posting requirements, they have partnered with Direct Employers to promote their jobs. To help with female recruitment outreach, SCE has been a member of Fairygodboss, the largest career community for women.

SCE uses SmashFly, a talent marketing platform that combines CRM, career site, and programmatic advertising. SmashFly helps with automating our high-volume tasks and allows the company to connect with candidates at any time. SmashFly can also help with measuring the return on their recruitment marketing spend.

The augmented writing platform, Textio, is used by recruiters and hiring leaders to help SCE with writing inclusive and compelling job descriptions.

## Professional and Community Association Outreach

SCE employees are active and continue to partner with several professional and community groups. The participation includes attending their career related events, being on-podium (keynote) at their annual conferences and mentoring their more early-career members. Some of the professional and community associations include the following:

- Society of Women Engineers (SWE)
- Society of Hispanic Professional Engineers (SHPE)
- National Society of Black Engineers (NSBE)
- Asian American Professional Association (AAPA)
- American Association of Blacks in Energy (AABE)
- Native American Tribes, specifically the 13 tribes within the SCE service territory

## Military Veteran Outreach

SCE states that it is committed to hiring and supporting military veterans. Some of its recruitment outreach and strategies to the veteran communities include the following:

- Hosting company information sessions for active military and veterans.
- Maintaining a military/veteran page on their career site which includes a military translator tool through Recruit Rooster. The translator tool allows job seekers to identify which careers at SCE are a good match with their military background.
- Posting jobs on sites such Getting Hired and Vocational Rehab+ to help the company reach the disabled veteran job seekers.
- Leveraging VALOR, our veteran Business Resource Group (BRG) to help the company engage and stay connected with the veteran community.

### **Individuals with Disabilities (IWD)**

SCE is a member of the U.S. business leadership network, Disability:IN. Disability:IN is the leading nonprofit resource for business disability inclusion worldwide. Employees from various parts of the company are active members of this network and attend their annual conference to remain current on how companies can best attract and retain IWD and strengthen their inclusive culture.

Job sites such as Getting Hired and Vocational Rehab+ also help SCE connect with the IWD community.

### **University & Campus Relations**

The company's college recruitment efforts are generally targeted to students pursuing degrees in engineering, accounting, finance, information technology, and cyber security at mostly California based universities and colleges. The company also developed a leadership development program for MBA graduates from select schools.

In addition, SCE partners with organizations such as TELACU (The East Los Angeles Community Union), GMiS (Great Minds in STEM), and MESA (Mathematics Engineering Science Achievement) to help with attracting a diverse group of early career talent.

The Company promotes all early-career job opportunities at most Historically Black Colleges and Universities (HBCU) through Handshake. Handshake is recognized platform for college students and alumni to find job opportunities. In addition, SCE currently has strategic relationships with two HBCUs, which includes virtual recruiting activities and outreach, such as company information sessions.

Since 2017, SCE has worked with Cal Poly Pomona's Open University to help prepare students for careers in utility planning. Several instructors for Cal Poly Pomona's Energy Planner Certification are SCE employees.

**Lineworker Scholarship Program:** In 2021, Edison International developed a four-year, \$1-million pilot scholarship program to provide scholarships and additional support totaling up to \$25,000 per recipient. The purpose of this scholarship program is to increase Black representation in the lineworker role. Scholarship recipients will eventually enroll in an applicable program at Los Angeles Trade Tech College (LATTC).

## Company Business Resource Group (BRG) Partnerships

SCE's Talent Acquisition partners with the company BRGs on outreach activities, specifically on job preparation strategies. Some examples include the following:

- Through the Networkers BRG, the Black Male Initiative was formed to partner with community, spiritual and non-profit organizations to help promote SCE job opportunities and career paths to members of their organizations.
- In partnership with the BRG, Latinos Engagement Advancement and Development (LEAD), Talent Acquisition presented to Latino student and community groups on resume writing best practices and interview preparation.
- SCE employees worked with the Native American Alliance BRG and representatives from other companies to host a virtual career expo to the members of the 13 tribes within SCE's service territory. Attendees were able to hear about job opportunities and practical advice about how to best prepare for their next job.

## SDG&E

### General Outreach

SDG&E has a stated commitment to diversity and inclusion. Their recruiting program includes posting job opportunities on various job boards such as LinkedIn and Local Job Network, and also utilizes social media outlets such as Instagram, Facebook and YouTube to provide company information and advertise openings.

### Diverse Employee Recruitment

As part of its recruiting program, SDG&E partners with diverse organizations including Association of Women in Water, Energy and Environment, National Association of Women in Construction (NAWIC), and Blacks in Technology. SDG&E's recruitment staff also focus on military outreach and work with organizations such Employment Development Department (EDD), Hire GI, and support programs like Onward to Opportunity.

SDG&E's partnership includes providing funding, attending events and hiring participants, posting job opportunities on their websites, helping them to expand their membership and collaborating with them on events by facilitating workshops and serving as panels.

### University Outreach

Candidates for internship and associate rotation programs are recruited from several schools in California, as well as Historically Black Colleges and Universities across the country. These schools are chosen due to their academic excellence and focused disciplines, such as offering Electrical Engineer power programs.

SDG&E has structured internship and rotation programs for engineering, accounting & finance, information technology, operations support, and supply management. Each program rotates employees through a series of company departments as development opportunities and exposure to various parts of the organization. Additionally, programs include the following components:

- Mentoring by management and director level leaders

- Work experience, field trips, lunch & learns, and social activities
- Participation by school professors
- University Advisory Board membership by many leaders to influence curriculum
- Program management by leadership, typically directors, to monitor development
- Maintaining relationships with diverse student organizations, such as American Indian Science & Engineering Society, National Society of Black Engineers, Mathematics Engineering Science Achievement, Society of Asian Scientists and Engineers, Society of Women Engineers, etc.

## SMJU Workforce Development

Given the smaller size of the three SMJUs’ (BVES, Liberty, PacifiCorp) RPS staff, they have fewer resources dedicated to RPS workforce development compared to the IOUs.

**Table 40: Total RPS Employees at Small and Multi-Jurisdictional Utilities from 2017–2021**

	2017	2018	2019	2020	2021
<b>BVES</b>	11	13	3	3	3
<b>Liberty</b>	9	11	13	12	No Data Provided
<b>PacifiCorp</b>	-	-	-	-	-
<b>Totals</b>	20	24	16	15	

Data source: BVES and Liberty August 2021

The table below shows the number of SMJU RPS employees who are women, minority, or disabled veterans.

**Table 41: Number of Women, Minority, and Veteran RPS Employees from 2017–2021 Employed at SMJUs**

	2017	2018	2019	2020	2021
<b>Women</b>	6	6	4	3	1
<b>Minority</b>	4	6	4	2	1
<b>Disabled Veterans</b>	0	0	0	0	0

Data source: BVES and Liberty August 2021

In 2020, approximately 67 percent of BVES’s total RPS staff was comprised of women and minorities. In 2020, approximately 42 percent of Liberty’s total RPS staff was comprised of women and minorities.

### Bear Valley Electric Service

BVES did not execute any RPS procurement contracts in 2020 and therefore did not execute any RPS contracts with a WMDV-LGBT owned business enterprise. BVES will include opportunity for diverse suppliers to bid in renewing its ten-year contract to meet its RPS obligation.

The Ethnic and Racial background of BVES’ RPS employees is shown in the table below.

**Table 42: Bear Valley Electric Service’s Ethnic and Racial Background of RPS Employees from 2019–2021**

	RPS Employees (Full-Time)		
	2019	2020	2021
<b>American Indian or Alaskan Native</b>	0	0	0
<b>Asian</b>	1	1	1
<b>Black/African American</b>	0	0	0
<b>Hispanic/Latino</b>	0	0	0
<b>Native Hawaiian or Pacific Islander</b>	0	0	0
<b>Two or more races</b>	0	0	0
<b>White</b>	2	2	2
<b>Other</b>	0	0	0

BVES has a supplier diversity program to measure organizational diversity and inclusion. BVES has not engaged in college recruitment efforts or offered scholarships to students within its service territory. The utility does not conduct internal training courses, but RPS employees are encouraged to attend training and workshops elsewhere in the State.

**Liberty Utilities**

The Ethnic and Racial backgrounds of Liberty Utilities’ RPS employees are shown below.

**Table 45: Liberty Utilities’ Ethnic and Racial Background of RPS Employees from 2019–2020**

	RPS Employees (Full-Time)		
	2019	2020	2021
<b>American Indian or Alaskan Native</b>	0	0	
<b>Asian</b>	2	1	
<b>Black/African American</b>	2	2	
<b>Hispanic/Latino</b>	0	0	
<b>Native Hawaiian or Pacific Islander</b>	0	0	
<b>Two or more races</b>	0	0	
<b>White</b>	9	9	
<b>Other</b>	0	0	

Liberty Utilities formed a Diversity and Inclusion Council in early 2019 comprised of representatives from all its regions and intended to set up the framework and activities to enable inclusion across the company. In addition, Liberty Utilities conducted an all employee Diversity and Inclusion training in 2019.

Of the three SMJUs, Liberty is the only utility to engage in recruitment efforts with local high schools and universities in 2020. Liberty offers scholarships to graduating high school students within the service territory and offers one annual community college scholarship. Liberty executed two RPS procurement contracts in 2020 and neither were with WMDV-LGBT owned business enterprises. Liberty stated that it is an equal opportunity employer and is committed to ensuring an equal and diverse workforce to implement the RPS program.

## PacifiCorp

PacifiCorp has policies to support diversity and inclusion, including a diversity, equity and inclusion task force, but these are corporate-wide, and PacifiCorp does not implement workforce development programs related to recruitment, training, and retention of WMDV employees specific to California's RPS program. PacifiCorp currently employs one person to work on RPS issues for all states, with assistance from additional staff in environmental policy, regulation, and legal work on RPS-related matters, but their time is not tracked by issue or state, and PacifiCorp did not provide specific diversity statistics.

## CCA Workforce Development

---

The CPUC requested data from all certified CCAs. The CCAs generally report that they implement workforce development and diversity policies to build a workforce that promotes economic sustainability and inclusion in the renewable energy sector. Common diversity efforts across the CCAs include providing equal employment opportunities in their employment practices, fair compensation, quality training and apprenticeship programs, and the development of locally based jobs.

Table 48 shows the amount of total full-time RPS employees at each CCA in response to the CPUC's data request.<sup>102</sup>

---

<sup>102</sup> The CCAs have varying interpretations of the data request categories and, therefore, reported RPS employees may not be directly comparable across the CCAs and the IOUs.

<b>Table 48: Total Number of CCA RPS Employees (2018 – 2021)</b>				
	<b>2018</b>	<b>2019</b>	<b>2020</b>	<b>2021</b>
<b>Apple Valley Choice Energy</b>	1	2	2	0
<b>City of Baldwin Park</b>	-	-	0	0
<b>City of Pomona</b>	-	-	0	0
<b>Clean Energy Alliance</b>	-	0	0	No Data
<b>Clean Power Alliance</b>	2	5	6	7
<b>CleanPowerSF</b>	3	5	11	11
<b>Desert Community Energy</b>	-	-	No Data	No Data
<b>East Bay Community Energy</b>	1	3	2	No Data
<b>King City Community Power</b>	1	3	3	3
<b>Lancaster Choice Energy</b>	1	1	1	2
<b>Marin Clean Energy</b>	56	73	72	72
<b>Central Coast Community Energy</b>	1	4	5	No Data
<b>Peninsula Clean Energy</b>	6	4	4	No Data
<b>Pico Rivera Innovative Municipal Energy</b>	2	0	0	0
<b>Pioneer Community Energy</b>	No Data	No Data	No Data	No Data
<b>Rancho Mirage Energy Authority</b>	1	1	1	1
<b>Redwood Coast Energy Authority</b>	6	7	8	8
<b>San Diego Community Power</b>	-	-	-	6
<b>San Jacinto Power</b>	1	0	0	0
<b>San Jose Clean Energy</b>	2	8	12	No Data
<b>Silicon Valley Clean Energy</b>	4	2	2	No Data
<b>Solana Energy Alliance</b>	1	0	0	No Data
<b>Sonoma Clean Power</b>	6	6	9	No Data
<b>Valley Clean Energy Alliance</b>	0	0	2	2
<b>Western Community Energy</b>	0	2	4	No Data

Data Source: CCAs, August 2021

In 2021, the CCAs reported engaging in business and workforce initiatives located in low-income and disadvantaged communities. Table 49 illustrates aggregated data on the number of women, minorities, and disabled veterans who are full time employees at the CCAs who work on the RPS program.

<b>Table 49: Total Number of Women, Minority, and Disabled Veterans RPS Employees from 2018 – 2021 (Community Choice Aggregators)</b>				
	<b>2018</b>	<b>2019</b>	<b>2020</b>	<b>2021</b>
<b>Women</b>	49	63	79	65
<b>Minority</b>	24	29	40	37
<b>Disabled Veterans</b>	No Data	No Data	No Data	No Data

## ESP Workforce Development

The CPUC requested data from all ESPs that were operational in 2020. The ESPs that responded generally report that they implement workforce development and diversity policies to build a workforce that promotes diversity and inclusion in the renewable energy sector. Common diversity efforts across the ESPs include providing equal employment opportunities in their employment practices and quality training and apprenticeship programs.

Table 50 shows the amount of total full-time RPS employees at each ESP in response to the CPUC’s data request.<sup>103</sup>

<b>Table 50: Total Number of ESP RPS Employees (2019 – 2021)</b>			
	<b>2019</b>	<b>2020</b>	<b>2021</b>
<b>3 Phases Renewables</b>	8	9	No Data
<b>American PowerNet</b>	1	1	No Data
<b>Calpine Energy Solutions</b>	No Data	No Data	13
<b>Constellation NewEnergy, Inc</b>	No Data	No Data	No Data
<b>Calpine Power America-CA, LLC</b>	No Data	No Data	5
<b>Direct Energy Business</b>	No Data	No Data	No Data
<b>EDF Industrial Power Solutions</b>	No Data	No Data	No Data
<b>Just Energy Solutions, Inc.</b>	5	6	No Data
<b>Pilot Power Group, LLC</b>	0	0	3
<b>Shell Energy North America, L.P.</b>	No Data	No Data	No Data
<b>Tiger Natural Gas, Inc.</b>	0	0	No Data
<b>UC Regents</b>	2	2	2

*Data Source: CES, CPA, PPG, UC Regents (August 2021)*

<sup>103</sup> The ESPs have varying interpretations of the data request categories and, therefore, reported RPS employees may not be directly comparable.

## VII. RPS Challenges and Policy Recommendations

Public Utilities Code § 913.4 requires the CPUC to identify barriers to achieving the RPS requirements and to propose recommendations to address those barriers. This chapter examines RPS program challenges at a high level and describes actions the CPUC is taking to address these issues, as well as offers recommendations for future actions.

The challenges addressed in this chapter include:

- Challenge 1: Limited CCA/ESP Planning Information to Inform Risk Assessment
- Challenge 2: The Evolution of Procurement Planning
- Challenge 3: Bioenergy

### Challenge 1: Risk Assessments by Retail Sellers

#### ISSUE

Through CPUC’s annual RPS procurement planning process there are several requirements directed in statute<sup>104</sup> that compel retail sellers to report on individual risk factors that have implications for RPS compliance, reliability needs, and California’s climate goals. Retail sellers are expected to incorporate a variety of considerations into their risk assessments that inform the likelihood of compliance so as to capture any possible scenarios that may lead to less than expected renewable energy deliveries across retail sellers’ portfolios. Some foundational risk considerations include the evaluation of seller and developer experience, load variation and underlying forecasts, resource availability, instances of curtailment, market supply and demand, delays in project development, and possibility of project failure, among others.

Many CCAs and ESPs often rely on the strategy of short-term contracting with existing eligible renewable energy resources exclusively to minimize risk of project failure, construction delay, and other factors that may impact RPS compliance. While there are numerous reasons that this procurement strategy is insufficient for assessing the risk of lower than expected renewable electricity generation, the structure of this risk mitigation strategy does not necessarily facilitate the development of new long-term resources essential in meeting California’s GHG reduction goals and reliability needs. In addition, this procurement and risk strategy will need to change to meet the 65 percent long-term contracting requirement that begins in Compliance Period 2021-2024.

While all retail sellers are subject to the same annual RPS Procurement Plan requirements, recent RPS Procurement Plans show that many CCAs and ESPs continue to provide risk assessments that are insufficient for the CPUC to make a realistic analysis on retail sellers’ ability to meet RPS obligations. Further, without adequate assessment of a variety of risk factors and considerations, the CPUC is limited in its ability to take proactive action if a retail seller is at risk of not meeting its RPS requirements.

#### RECOMMENDATION

Beginning in 2021 the CPUC began issuing quarterly data requests to collect information from all retail sellers on recently executed RPS contracts and the progress of all retail sellers’ projects in development.

---

<sup>104</sup> Pub. Util. Code Sections 399.13(a)(6)(B), 399.13(a)(6)(D), and 399.13(a)(6)(F).

Previously, project development data was only collected monthly from the IOUs. This change in data collection will allow the CPUC to monitor project development throughout the year rather than an annual basis through the CCAs' and ESPs' annual RPS Plans.

The CPUC will continue to direct retail sellers to perform increasingly robust risk assessments in annual RPS Procurement Plans, consistent with statutory requirements. In addition, the CPUC will highlight retail sellers' risk assessments considered to be best practices in order to provide retail sellers that have less experience in RPS procurement planning with examples to consult when developing suitable risk assessments for their RPS planning and procurement as well as for CPUC review. Finally, the CPUC will continue to monitor the progress of new resource development and near-term planning risks in the IRP and RPS proceedings to ensure that new resources are built in support of California's climate goals and reliability needs.

## Challenge 2: Evolution of Procurement Planning

### ISSUE

For the first 10 years of the RPS program, renewables procurement was primarily conducted through IOU solicitations that the CPUC monitored and to which the CPUC provided guidance. The renewables market in California was still developing and there were limited participants procuring renewable resources at utility scale. This limited universe of retail sellers participating in the market, paired with a predictable process of IOU solicitations administered almost exclusively by the RPS Program, allowed the CPUC and other state agencies to reliably plan for renewables procurement to ensure that the State meets renewable energy while maintaining a safe, reliable electric system. That process has since changed in two main ways, creating challenges for statewide renewables procurement planning. First, as noted in the description of Challenge 1 above, the California renewable market has matured with many new retail sellers entering the market. Second, as renewables overtake conventional resources in California, renewables procurement is considered in CPUC programs outside of the RPS Program, requiring greater coordination.

As the State heads toward its 60 percent RPS and 100 percent carbon-free energy goals, the renewables market in California has matured considerably. Part of the maturation in the renewable market includes a large growth in the number of CCAs and ESPs operating within the state, disaggregating renewable electricity market from the large IOUs and spreading it among a variety of retail sellers. As of 2021 there are 29 CCAs and 13 ESPs operating in California, collectively serving over 44% of California's electrical load. In addition, six certified are CCAs expected to come online in 2022 and 2023.

Fragmented renewable procurement creates challenges for the CPUC and other state agencies that are trying to plan for renewables procurement to optimize for – among other considerations – cost, safety, and reliability. Today, however, non-IOU retail sellers highlight within their RPS Procurement Plans a number of local policy priorities and business models that may not necessarily align with the State's climate and reliability goals. It is common for these retail sellers to show that they prioritize keeping customer rates low over broader State policy goals, such as safety, reliability, and risk of non-compliance. ESPs argue that the State's RPS requirements are at odds with their business model of meeting changing customer demands.

Prior to the proliferation of CCAs and ESPs, the CPUC had access to the majority of the state's renewable procurement planning in the IOUs RPS Procurement Plans. While CCAs and ESPs are subject to the same annual RPS Plan requirements as required by the IOUs, many CCA and ESP RPS Plans continue to provide minimal information to the CPUC. Some LSEs' RPS Plans have improved immensely and offer clear insight

to innovative procurement planning. However, others rely on limited, superficial information using boilerplate language found across multiple retail seller filings that do not offer insight into their unique service territories, despite the LSEs being active retail sellers for a number of years, in some cases.

The lack of information in these procurement plans makes the CPUC’s task of effective renewable procurement planning far more difficult. This lack of insight on statewide procurement planning may put the State at risk for meeting its reliability needs and climate goals. The proliferation of renewable resources impact grid reliability such that many CPUC proceedings – including IRP and Resource Adequacy – need to plan and consider renewable procurement in a way that was not necessary several years ago. For instance, the IRP proceeding recommends certain levels of particular renewable resources for an optimal statewide portfolio, and has considered clean energy procurement within that proceeding. Similarly, the Resource Adequacy proceeding faces a new set of challenges with the proliferation of variable renewable resources, and has ordered procurement within that proceeding as well. As the RPS Program evolves such that it is not the sole proceeding considering the procurement of renewable resources, it is imperative to remain aligned with the other CPUC proceedings to optimize procurement planning.

## RECOMMENDATION

To optimize procurement planning across a host of retail sellers, the CPUC will have to continue to refine and update its procurement planning requirements, primarily through RPS Procurement Plans and data requests. The CPUC will also consider strategies for ensuring that retail sellers provide the information required of them, which may include penalties or citations for noncompliance.

To remain efficient as more renewable resources are required to meet state goals, the RPS proceeding will coordinate closely with the CPUC’s IRP and Resource Adequacy proceedings. The CPUC plans to continue its statutory mandates through CPUC decisions and communications with all LSEs, conveying the significant and pivotal role in oversight that it has for RPS procurement and system reliability.

## Challenge 3: Bioenergy

### ISSUE

Bioenergy combustion technologies are considered RPS-eligible and will likely play a role in meeting California’s SB 100 goals for zero-carbon resources by 2045. Although bioenergy is a comparatively expensive renewable resource, the state looks to bioenergy to play a role in addressing biomass waste, wildfire risk reduction, land use impacts, and transportation fuels. The CPUC has implemented numerous revisions to its bioenergy programs, but challenges remain.

At the regional SB 100 scoping workshops held across the state, stakeholders asked that the definition of “zero-carbon resource” include electricity from bioenergy to contribute to system reliability and wildfire risk reduction,<sup>105</sup> but various regions in California view bioenergy differently and argue against it because of air quality and land use impacts. However, focusing on expensive bioenergy solutions could detract from developing more sophisticated technologies with potential for market transformation that could be of greater benefit to Californians. In addition, the contributions of bioenergy projects to reducing emissions are not fully quantified and more research on the emissions impacts of bioenergy projects is needed.

---

<sup>105</sup> SB 100 Joint Agency Report, March 2021, pp. 50-51

Lastly, data show that expanded bioenergy policies have not resulted in significant incremental high-hazard zone (HHZ) fuel use or decreased costs. CPUC staff analysis found that there is no shortage of biomass in the forest, but there are barriers to accessing it. Barriers include insufficient supply chain capacity, long hauling distances and high transportation costs, and the need for existing facility retrofits. Overcoming these barriers would require further, possibly substantial, investment and subsidies.

## RECOMMENDATION

The CPUC is currently facilitating a technical working group to develop a public tool to measure net greenhouse gas emissions from bioenergy projects. The working group is using existing public modeling done by other state agencies, such as CARB and CEC-funded EPIC projects, and includes emissions experts from academia and U.S. Department of Energy national labs.

In June 2021, the CPUC issued a staff proposal on implementing SB 1440, which recommends approval of a cost-effective biomethane procurement program for the investor-owned gas utilities.<sup>106</sup> The staff proposal recommends prioritizing biomethane procurement from facilities that use trucks that run on cleaner alternatives to diesel, as well as procurement from producers that agree to cap on-site electric generation from combustion technologies.

The CPUC will perform more granular tracking of the amount of fuel used at bioenergy facilities derived from high fire threat areas, as well as the costs of procuring fuel and electricity, to further understand bioenergy cost-effectiveness. The CPUC will also continue to work to understand the lifecycle impact bioenergy projects, including those that use noncombustion bioenergy technologies such as pyrolysis and gasification.

---

<sup>106</sup> See R.13-02-008, *ALJ Ruling Directing Parties to File comments on Phase 4A Staff Proposal and Related Questions, Attachment 1*, June 3, 2021

# Appendices

## Appendix A – About the RPS Program

---

### How the RPS Program Works

The RPS program encourages investment in the development of new utility-scale renewable energy facilities to meet the electrical demands of the State of California. RPS is a market-based program where compliance is determined by the quantity of Renewable Energy Credits (REC) procured (1 REC = 1 megawatt hour (MWh)). Eligible renewable generation facilities may be located anywhere within the Western Electricity Coordinating Council (WECC) region.<sup>107</sup> These facilities are permitted to sell RECs to California retail sellers<sup>108</sup> of electricity to meet their RPS obligations, provided the facility meets all RPS eligibility criteria established by the California Energy Commission (CEC).

The CPUC's implementation of the RPS program complements the RPS program administered by the CEC, as well as supports California's climate change policies. The CPUC's compliance process is completed after the CEC verifies RPS-eligible procurement from renewable energy facilities. The CPUC establishes program policy within its RPS rulemaking proceeding and implements legislation through its CPUC decisions to ensure that electricity retailers comply with CPUC rules and State law.<sup>109</sup>

The CPUC's responsibilities in the implementation of the RPS program include:

- Setting policy through a public stakeholder process;
- Reviewing and approving each retail seller's RPS procurement plan;
- Reviewing IOU contracts for RPS-eligible energy; and
- Determining and enforcing compliance with procurement targets.

### Portfolio Balance Requirement Rules

California's RPS program defines all renewable procurement acquired from contracts executed after June 1, 2010 into one of three portfolio content categories (PCCs). The PCC requirements are instrumental in determining a retail seller's compliance with the RPS program.

- **Category 1:** Bundled renewable energy credits (RECs) from facilities with a first point of interconnection within a California Balancing Authority (CBA), or facilities that schedule electricity into a CBA on an hourly or sub-hourly basis.
- **Category 2:** Procurement which bundles RECs with incremental electricity, and/or substitute energy, from outside a CBA. Generally, Category 2 RECs are generated from out-of-state renewable facilities and require a Substitute Energy Agreement that details the simultaneous purchase of energy and RECs from an RPS-eligible facility.

---

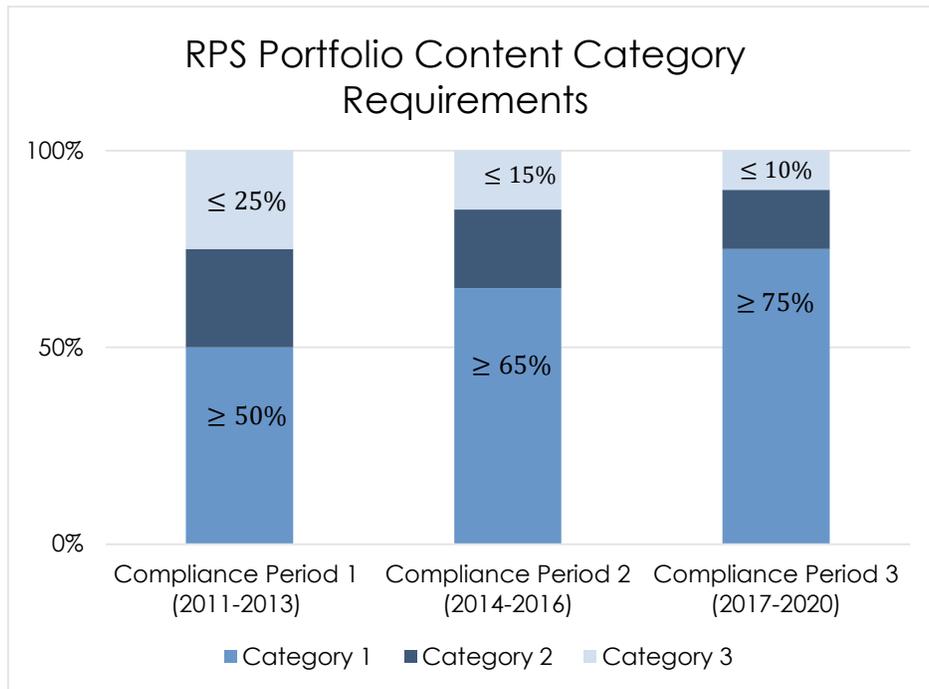
<sup>107</sup> The WECC region extends from the Canadian provinces of Alberta and British Columbia to the northern part of Baja California, Mexico, and encompasses the 14 western U.S. states in between.

<sup>108</sup> Retail seller is defined as any entity engaged in the retail sale of electricity to end-use customers located within the State, including electrical corporations (as defined in Public Utilities Code § 218), community choice aggregators, and electric service providers.

<sup>109</sup> The CPUC Rulemaking for the RPS program is currently R.18-07-003.

- Category 3:** Unbundled RECs that do not include the physical delivery of the energy attached to the REC. Generally, Category 3 RECs are associated with the sale and purchase of the RECs themselves, not the energy.

The figure below depicts the PBR limits and how they adjust across compliance periods until 2020, at which point they remain at those limits for each successive compliance period.



In addition to complying with RPS procurement requirements and PCC classifications, most retail sellers have specified requirements for the balance or mix of procurement from contracts that are executed after June 1, 2010. Specifically, these retail sellers must procure a minimum level of Category 1 RECs, which increases over the initial three multi-year compliance periods.<sup>110</sup> There is a maximum limit on the amount of Category 3 procurement that may be used in each compliance period, which decreases over the same timeframe.

### RPS Excess Procurement Rules

RECs that are not used to fulfill RPS obligations in one period may be “banked” and used in subsequent compliance periods. SB 2 (1X) (Simitian, 2011) established the ability for a retail seller to carry over procurement from one compliance period to another. The calculations for excess procurement rely on a combination of the PCC classification of the RECs and whether the RECs are associated with short-term or long-term contracts.

The CPUC has implemented SB 350, which changes the banking rules. Beginning in 2021–2024 compliance period, all excess PCC 1 RECs can be banked, regardless of whether they are associated with short- or long-term contracts; no PCC 2 or PCC 3 RECs can be banked.

<sup>110</sup> See Public Utilities Code § 399.16(c) for additional information.

## RPS Compliance Requirements

Each year, the CPUC evaluates retail sellers' RPS Procurement Plans to review their long-term RPS forecasts and planning mechanisms. The RPS Plans provide information regarding current generation under contract, projects under development, and forecasted need for additional RPS procurement. Progress towards the RPS mandate is measured in several ways, including through the analysis of detailed RPS Procurement Plans and RPS Compliance Reports. These documents forecast the compliance status of each retail seller in achieving the statewide mandate.

Retail sellers are required to submit annual preliminary Compliance Reports to the CPUC that contain historical and forecasted data about their renewable procurement. The CPUC evaluates these reports to ensure progress is being made towards the interim targets.

The CPUC works closely with the CEC to manage the RPS program, including compliance determinations. Compliance evaluations and official determinations by the CPUC can only take place after the CEC verifies a retail seller's annual REC claims.

The CEC receives reports from energy retailers generated by the Western Renewable Energy Generation Information System (WREGIS)<sup>111</sup> describing the amount of renewable electricity generated by every eligible facility. The CEC analyzes WREGIS reports to determine eligibility of the facility, the quantity of RECs created from each RPS-eligible facility, and retail sellers' RPS procurement claim to ensure each REC claimed is eligible for compliance with the RPS and is only counted once.

Once the CEC has verified the number of RPS eligible RECs, a retail seller can use those RECs to meet its RPS compliance obligations, and those RECs are considered retired. The CPUC is then responsible for reviewing how a retail seller's RPS procurement is classified into categories (PCCs) and is consistent with the portfolio balance requirement (PBR), the long-term contracting requirement and the procurement quantity requirement (PQR).

---

<sup>111</sup> The Western Renewable Energy Generation Information System (WREGIS) is an independent renewable energy tracking system for the region covered by the Western Electricity Coordinating Council (WECC).

## Appendix B – How RPS Compliance Works

---

To achieve RPS compliance, retail sellers must meet three requirements:

- Procurement Quantity Requirement (PQR);
- Portfolio Balance Requirement (PBR); and
- Long-Term Contracting Requirement.

As applicable, a retail seller's RPS procurement can contribute to meeting more than one requirement (e.g., all of a retail seller's long-term RPS contracting will eventually contribute to meeting its PQR), but the criteria of all three requirements must be met for a retail seller to be considered compliant with the RPS program, with the exception of SMJUs, which are exempt from the PBR.<sup>112</sup>

### **Procurement Quantity Requirement (PQR)**

The PQR is the statutorily<sup>113</sup> set percentage of RPS-eligible procurement required in a compliance period. The CPUC implemented annual percentage targets in D.19-06-023, pursuant to SB 100.<sup>114</sup> The annual percentage target is multiplied by a retail sellers' total retail sales in each year for a given compliance period. Retail sellers must meet the PQR established for each compliance period or they are considered non-compliant with the RPS program and assessed a penalty of \$50/REC.

### **Portfolio Balance Requirement (PBR)**

The PBR is defined by the minimum and maximum of the three portfolio content categories (PCC), which are delineated by type of renewable procurement. The minimum and maximum vary over the initial compliance period.<sup>115</sup>

All retail sellers except for SMJUs must follow the above specified requirements for the balance or mix of procurement from contracts that are executed after June 1, 2010. The SMJUs are exempt from the portfolio balance requirements and may procure any amount of RPS-eligible energy from any of the categories.<sup>116</sup>

### **Long-Term Contracting Requirement**

All electric retail sellers must procure a specified percentage of their RPS portfolio from long-term contracts, defined as 10 or more years.<sup>117</sup> For the first three compliance periods through 2020, 0.25 percent of a retail seller's total electricity portfolio must come from long-term contracts. SB 350 increased this requirement, implemented in D.17-06-026, to 65 percent of all RPS procurement coming from long-term contracts beginning in the 2021–2024 Compliance Period, or in the 2017-2020 Compliance Period if an electric retail seller elects for early compliance.

---

<sup>112</sup> See Appendix A: About the RPS Program for more detail.

<sup>113</sup> Defined by Public Utilities Code § 399.15(b)(2)(B) and were first implemented by the CPUC in 2011. The code has been amended to increase the PQR multiple times, with the most recent amendment being from Senate Bill (SB) 100 in 2018, increasing to 60 percent for all subsequent three-year compliance periods.

<sup>114</sup> See D.19-06-023 for more information:

<https://docs.cpuc.ca.gov/PublishedDocs/Published/G000/M307/K595/307595168.PDF>

<sup>115</sup> For more details on the RPS Compliance rules, visit <https://www.cpuc.ca.gov/General.aspx?id=3856>.

<sup>116</sup> Pursuant to Public Utilities Code § 399.17 and 399.18.

<sup>117</sup> See Public Utilities Code § 399.13(b) for additional information.

## CPUC Compliance Determinations

---

To ensure electricity retail sellers meet their RPS requirements, the CPUC is responsible for establishing enforcement procedures and imposing penalties for non-compliance with the RPS program. In 2017, the CPUC evaluated RPS-eligible procurement and made final compliance determinations for Compliance Period 2011–2013 and determined that six retail sellers were non-compliant with their RPS procurement obligations.<sup>118</sup>

In 2019, the CPUC made final compliance determinations for Compliance Period 2014–2016 and found that out of 26 retail sellers, 3 were non-compliant with their RPS procurement obligations. Two of the three retail sellers did not meet the long-term contracting requirement and, therefore, could not count their short-term procurement toward their PQR. The third retail seller did not procure enough RECs to meet its requirements.<sup>119</sup>

### Enforcement

#### COMPLIANCE PERIOD 2011–2013

In December 2017, the CPUC issued compliance determination letters to the 20 retail sellers operating in Compliance Period 2011–2013. Six entities failed to comply with either the long-term contracting requirement and/or the PQR. Four retail sellers accepted the Commission’s determination and paid their non-compliance penalties. Two retail sellers, Gexa Energy California and Liberty Power Holdings, filed for waivers of their respective RPS penalties under § 399.15 of the Public Utilities Code. In August 2019, the CPUC issued a decision denying the two retail sellers’ requests for waiver of their penalties. These two retail sellers were required to pay a cumulative sum of over \$2 million.<sup>120</sup> The total penalties collected for Compliance Period 2011–2013 were approximately \$4.1 million.<sup>121</sup>

#### COMPLIANCE PERIOD 2014–2016

In October 2019, the CPUC issued compliance determination letters to the 26 retail sellers operating in Compliance Period 2014–2016. Three entities failed to comply with either the long-term contracting requirement and/or the PQR. One retail seller, Commercial Energy, accepted the compliance determination and timely paid their non-compliance penalty.

One of the non-compliant retail sellers, Agera Energy, filed for Chapter 11 bankruptcy in October 2019 and neither filed a waiver request nor paid the penalties. Consequently, collection of Agera Energy’s Compliance Period 2 penalties is contingent on the outcome of Agera Energy’s bankruptcy proceedings. In 2020, Agera Energy exited the California market and formally de-registered as an ESP. Gexa Energy California, again, filed for a waiver of their assessed RPS penalties, and the CPUC is in the process of adjudicating their waiver request.

---

<sup>118</sup> The six retail sellers include Commercial Energy of California, Commerce Energy (Just Energy Solutions), Direct Energy Business, Gexa Energy, Liberty Power Holdings, and Tiger Natural Gas.

<sup>119</sup> See D.17-06-026 for more information on the RPS long-term contracting rules.

<sup>120</sup> D.19-08-007.

<sup>121</sup> Per Public Utilities Code § 399.15(b)(8), the penalties collected for the RPS program are deposited into the Electric Program Investment Charge (EPIC) fund.

COMPLIANCE PERIOD 2017–2020

Compliance determinations are underway, pending verification of procurement claims by the CEC.

## Appendix C – Glossary of Acronyms and Terms

---

**(BioMAT) Bioenergy Market Adjusting Tariff:** A feed-in tariff program for bioenergy renewable generators less than 3 MW in size.

**(BioRAM) Bioenergy Renewable Auction Mechanism:** An RPS program that implements the Governor's October 2015 Emergency Order on Tree Mortality, as well as SB 859 (2016), and mandates utilities to procure bioenergy from forest fuel from High Hazard Zones (HHZ) to mitigate the threat of wildfires.

**(CBA) California Balancing Authority:** A balancing authority is charged with maintaining the safe and reliable transportation of electricity on the power grid and ensures transparent access to the transmission network and market transactions.

**(CCA) Community Choice Aggregator:** Local government agencies that purchase and may develop power on behalf of residents, businesses, and municipal facilities within a local or sub-regional area. As of November 1, 2020, there are 29 registered CCAs in California with 23 active CCAs and 6 CCAs set to serve customers in 2021 and 2022.

**(ESP) Electric Service Provider:** An entity that offers electrical service to commercial and industrial customers within the service territory of an electrical corporation and includes the unregulated affiliates and subsidiaries of an electrical corporation.

**(IRP) Integrated Resource Plan:** A planning mechanism to consider all the CPUC's electric procurement policies and programs to ensure California has a safe, reliable, and cost-effective electricity supply. The CPUC implements an integrated resource planning process that will ensure that retail sellers meet targets that allow the electricity sector to contribute to California's economy-wide greenhouse gas emissions reductions goals.

**(IOU) Investor-Owned Utility:** IOUs are privately owned electricity and natural gas providers and are regulated by the California Public Utilities Commission (CPUC). Pacific Gas and Electric, Southern California Edison, and San Diego Gas and Electric comprise approximately three quarters of the retail electricity supply in California.<sup>122</sup>

**(LSE) Load Serving Entity:** All entities that serve electricity to customers including IOUs, SMJUs, CCAs, and ESPs.<sup>123</sup>

**(PPA) Power Purchase Agreement:** The contractual agreement under which the financial and technical aspects of renewable energy generation projects are agreed upon between power sellers and retail sellers.

**(RA) Resource Adequacy:** The ability of a utilities' reliable capacity resources (supply) to meet customers' energy or system loads (demands) at all hours.

**(RAM) Renewable Auction Mechanism:** An RPS procurement process the IOUs may use to procure RPS generation and to satisfy authorized procurement needs or legislative mandates. RAM streamlines the procurement process for developers, utilities, and regulators by 1) allowing project bidders to set their own price, 2) providing a simple standard contract for each utility, and 3) allowing all contracts to be submitted to the CPUC through an expedited regulatory review process.

---

<sup>122</sup> For information on the differences between Publicly-Owned Utilities and Investor-Owned Utilities, please visit the California Energy Commission's website: [https://www.energy.ca.gov/pou\\_reporting/background/difference\\_pou\\_iou.html](https://www.energy.ca.gov/pou_reporting/background/difference_pou_iou.html).

<sup>123</sup> The CPUC is responsible for compliance and enforcement activities for retail sellers, which excludes Publicly Owned Utilities.

**(REC) Renewable Energy Credit:** A market-based instrument that represents the property rights to the environmental, social and other non-power attributes associated with the production of electricity from a renewable source. RECs play an important role in driving the deployment of renewable energy in California and achieving the goals of Renewables Portfolio Standard (RPS). A REC confers to its holder a claim on the renewable attributes of one unit of energy (MWh) generated from a renewable resource. RECs are "created" by a renewable generator simultaneous to the production of electricity and can subsequently be sold separately from the underlying energy.

**(ReMAT) Renewable Market Adjusting Tariff:** A feed-in tariff program for small renewable generators up to 3 MW in size.

**Retail Sellers:** All entities that sell electricity to customers, including IOUs, CCAs and ESPs. A Publicly Owned Utility does not meet the definition of a retail seller and POU compliance with the RPS program is overseen by the CEC.

**(SMJU) Small and Multi-Jurisdictional Utilities:** Investor-owned utilities that are considered small and multi-jurisdictional subject to different rules per PUC § 399.17 and § 399.18.

## Appendix D – California's Active Load Serving Entities

Investor- Owned Utilities (IOUs)	Small and Multi-Jurisdictional Utilities (SMJUs)	Community Choice Aggregators (CCAs)	Electric Service Providers (ESPs)
<ul style="list-style-type: none"> <li>• Pacific Gas and Electric Company (PG&amp;E)</li> <li>• Southern California Edison (SCE)</li> <li>• San Diego Gas &amp; Electric (SDG&amp;E)</li> </ul>	<ul style="list-style-type: none"> <li>• Bear Valley Electric Service (BVES)</li> <li>• Liberty Utilities (formerly CalPeco Electric)</li> <li>• PacifiCorp</li> </ul>	<ul style="list-style-type: none"> <li>• Apple Valley Choice Energy (AVCE)</li> <li>• Central Coast Community Energy (CCCE)</li> <li>• City of Baldwin Park</li> <li>• City of Pomona</li> <li>• Clean Power Alliance (CPA)</li> <li>• CleanPowerSF (CPSF)</li> <li>• Desert Community Energy (DCE)</li> <li>• East Bay Community Energy (EBCE)</li> <li>• King City Community Power (KCCP)</li> <li>• Lancaster Choice Energy (LCE)</li> <li>• Marin Clean Energy (MCE)</li> <li>• Peninsula Clean Energy (PCE)</li> <li>• Pico Rivera Innovative Municipal Energy (PRIME)</li> <li>• Pioneer Community Energy (Pioneer)</li> <li>• Rancho Mirage Energy Authority (RMEA)</li> <li>• Redwood Coast Energy Authority (RCEA)</li> <li>• San Jacinto Power (SJP)</li> <li>• San Jose Clean Energy (SJCE)</li> <li>• Silicon Valley Clean Energy (SVCE)</li> <li>• Solana Energy Alliance (SEA)</li> <li>• Sonoma Clean Power (SCP)</li> <li>• Valley Clean Energy Alliance (VCEA)</li> <li>• Western Community Energy (WCE)</li> </ul>	<ul style="list-style-type: none"> <li>• 3 Phases Renewables</li> <li>• American PowerNet</li> <li>• Calpine Energy Solutions</li> <li>• Calpine Power America</li> <li>• Commercial Energy of CA</li> <li>• Constellation New Energy</li> <li>• Direct Energy Business</li> <li>• EDF Industrial Power Services</li> <li>• Just Energy Solutions</li> <li>• Pilot Power Group</li> <li>• Shell Energy North America</li> <li>• Tiger Natural Gas</li> <li>• UC Regents</li> </ul>

## Appendix E – Public Utilities Code Section 913.4

---

In order to evaluate the progress of the State's electrical corporations in complying with the California Renewables Portfolio Standard Program (Article 16—commencing with § 399.11—of Chapter 2.3), the commission shall report to the Legislature no later than November 1 of each year on all of the following:

- (a) The progress and status of procurement activities by each retail seller pursuant to the California Renewables Portfolio Standard Program.
- (b) For each electrical corporation, an implementation schedule to achieve the renewables portfolio standard procurement requirements, including all substantive actions that have been taken or will be taken to achieve the program procurement requirements.
- (c) The projected ability of each electrical corporation to meet the renewables portfolio standard procurement requirements under the cost limitations in subdivisions (c) and (d) of § 399.15 and any recommendations for revisions of those cost limitations.
- (d) Any renewable energy procurement plan approved by the commission pursuant to § 399.13, schedule, and status report for all substantive procurement, transmission development, and other activities that the commission has approved to be undertaken by an electrical corporation to achieve the procurement requirements of the renewables portfolio standard.
- (e) Any barriers to, and policy recommendations for, achieving the renewables portfolio standard pursuant to the California Renewables Portfolio Standard Program.
- (f) The efforts each electrical corporation is taking to recruit and train employees to ensure an adequately trained and available workforce, including the number of new employees hired by the electrical corporation for purposes of implementing the requirements of Article 16 (commencing with § 399.11) of Chapter 2.3, the goals adopted by the electrical corporation for increasing women, minority, and disabled veterans trained or hired for purposes of implementing the requirements of Article 16 (commencing with § 399.11) of Chapter 2.3, and, to the extent information is available, the number of new employees hired and the number of women, minority, and disabled veterans trained or hired by persons or corporations owning or operating eligible renewable energy resources under contract with an electrical corporation. This subdivision does not provide the commission with authority to engage in, regulate, or expand its authority to include, workforce recruitment or training.

## Appendix F – Summary of Accomplishments from January 2020 – October 2021

<b>January 2020</b>	<ul style="list-style-type: none"> <li>▪ CPUC issued three disposition letters in response to each large IOU’s information-only advice letter regarding Air Pollution Control Information on Tree Mortality Contracts in compliance with D.18-12-003</li> </ul>
<b>February 2020</b>	<ul style="list-style-type: none"> <li>▪ CPUC issued three disposition letters in response to each large IOU’s advice letters complying with D.19-12-004 to modify the BioMAT Fuel Resource Category 2 definition.</li> <li>▪ CPUC issued a Ruling and Staff Proposal on confidentiality rules for the RPS program.</li> <li>▪ CPUC issued a Ruling on review of Gexa Energy’s Motion for Waiver Request of Compliance Period 2014-2016 requirements.</li> </ul>
<b>March 2020</b>	<ul style="list-style-type: none"> <li>▪ CPUC issued BioMAT Staff Proposal seeking comments on recommended program changes.</li> <li>▪ CPUC issued D.20-02-044 clarifying the eligibility of directed biogas under the BioMAT program.</li> </ul>
<b>April 2020</b>	<ul style="list-style-type: none"> <li>▪ CPUC received comments from parties on Ruling reviewing Gexa Energy’s Motion for Waiver Request of compliance requirements.</li> <li>▪ CPUC received comments from parties on Ruling and Staff Proposal on confidentiality rules for the RPS program.</li> </ul>
<b>May 2020</b>	<ul style="list-style-type: none"> <li>▪ CPUC issued the 2020 Padilla Report on Costs and Cost Savings for the RPS Program to the Legislature, pursuant to Public Utilities Code § 913.3</li> <li>▪ CPUC issued the Assigned Commissioner and Assigned Administrative Law Judge’s Ruling issued identifying issues and schedule of review for 2020 RPS Procurement Plans</li> <li>▪ CPUC adopted D.20-05-006 approving a new standard offer contract for qualifying facilities 20 MW or less</li> </ul>
<b>June 2020</b>	<ul style="list-style-type: none"> <li>▪ CPUC issued Ruling for Staff Proposal on ReMAT program modifications</li> </ul>
<b>July 2020</b>	<ul style="list-style-type: none"> <li>▪ IOUs, CCAs, and ESPs submitted Draft 2020 RPS Procurement Plans</li> <li>▪ CPUC issued three disposition letters in response to each large IOU’s information-only advice letter regarding Air Pollution Control Information on Tree Mortality Contracts in compliance with Decision 18-12-003</li> <li>▪ CPUC approved PG&amp;E Advice Letter 5844-E requesting approval of extending the Burney BioRAM contract by 5 years</li> </ul>
<b>August 2020</b>	<ul style="list-style-type: none"> <li>▪ IOUs, CCAs, and ESPs submitted annual RPS Compliance Reports</li> </ul>

	<ul style="list-style-type: none"> <li>CPUC issued disposition letters accepting the Joint IOU Tier 2 Advice Letters on Effective Load Carrying Capability (ELCC) values for RPS procurement</li> </ul>
<b>September 2020</b>	<ul style="list-style-type: none"> <li>CPUC adopted D.20-08-043 implementing changes in the BioMAT program and extending the program to 2025</li> <li>CPUC issued a disposition letter accepting PG&amp;E’s AL 5906-E requesting approval of REC sales agreements</li> <li>CPUC adopted D.20-09-022 accepting four CCAs and PacifiCorp 2019 RPS Procurement Plans and granting EnerCal’s request for waiver</li> <li>CPUC issued staff proposal on alignment of RPS Procurement Plans and IRP filings</li> </ul>
<b>October 2020</b>	<ul style="list-style-type: none"> <li>CPUC adopted D.20-10-005 implementing changes to the ReMAT program</li> <li>CPUC issued a disposition letter accepting PG&amp;E’s AL 5955-E requesting amendments to its the BioRAM standard contract</li> <li>CPUC issued letters to all retail sellers that are at risk of not meeting their RPS compliance requirements, pursuant to SB 155</li> </ul>
<b>November 2020</b>	<ul style="list-style-type: none"> <li>CPUC issued the 2020 Annual RPS Report to the Legislature: <a href="https://www.cpuc.ca.gov/industries-and-topics/electrical-energy/energy-reports-and-whitepapers/rps-reports-and-data">https://www.cpuc.ca.gov/industries-and-topics/electrical-energy/energy-reports-and-whitepapers/rps-reports-and-data</a></li> </ul>
<b>December 2020</b>	<ul style="list-style-type: none"> <li>CPUC issued Proposed Decision on 2020 Renewables Portfolio Standard Procurement Plans</li> </ul>
<b>January 2021</b>	<ul style="list-style-type: none"> <li>CPUC adopted D.21-01-005 on the 2020 RPS Procurement Plans<sup>124</sup></li> <li>CPUC issued disposition letters approving the Joint IOUs ELCC values for RPS procurement</li> </ul>
<b>February 2021</b>	<ul style="list-style-type: none"> <li>PG&amp;E and SCE resumed their ReMAT programs following CPUC approval of Tier 2 Advice Letters with updated ReMAT tariffs and associated standard contracts pursuant to D.20-10-005</li> </ul>
<b>March 2021</b>	<ul style="list-style-type: none"> <li>CPUC issued the Assigned Commissioner and Assigned Administrative Law Judge’s Ruling issued identifying issues and schedule of review for 2021 RPS Procurement Plans<sup>125</sup></li> <li>CPUC issued Resolution E-5123 approving PG&amp;E’s BioRAM contract with Wheelabrator Shasta Energy</li> </ul>
<b>April 2021</b>	<ul style="list-style-type: none"> <li>CPUC issued the Administrative Law Judge’s Ruling seeking updated information regarding the ReMAT program</li> <li>CPUC issued Resolution E-5135 approving PG&amp;E’s BioRAM contract with Woodland Biomass</li> </ul>

<sup>124</sup> <https://docs.cpuc.ca.gov/PublishedDocs/Published/G000/M361/K203/361203138.PDF>

<sup>125</sup> <https://docs.cpuc.ca.gov/PublishedDocs/Efile/G000/M374/K626/374626996.PDF>

	<ul style="list-style-type: none"> <li>▪ CPUC approved via disposition letter PG&amp;E’s Winter 2020 REC Sales contracts</li> <li>▪ CPUC staff established the BioMAT Technical Working Group pursuant to D.20-08-043</li> </ul>
<b>May 2021</b>	<ul style="list-style-type: none"> <li>▪ CPUC issued the 2021 Padilla Report on Costs and Cost Savings for the RPS Program to the Legislature, pursuant to Public Utilities Code § 913.3: <a href="https://www.cpuc.ca.gov/RPS_Reports_Data/">https://www.cpuc.ca.gov/RPS_Reports_Data/</a></li> </ul>
<b>June 2021</b>	<ul style="list-style-type: none"> <li>▪ Prehearing Conference held for Liberty Utilities’ Application requesting Commission approval to finance, construct, own and operate the Luning Expansion Project</li> </ul>
<b>July 2021</b>	<ul style="list-style-type: none"> <li>▪ IOUs, CCAs, and ESPs submitted Draft 2021 RPS Procurement Plans</li> <li>▪ CPUC issued disposition letters approving the Joint IOUs’ updated ELCC values for RPS procurement</li> </ul>
<b>August 2021</b>	<ul style="list-style-type: none"> <li>▪ IOUs, CCAs, and ESPs submitted annual RPS Compliance Reports</li> </ul>
<b>September 2021</b>	<ul style="list-style-type: none"> <li>▪ CPUC issues ALJ’s Proposed Decision Re: Clarifying and Improving Confidentiality Rules for RPS Program</li> </ul>
<b>October 2021</b>	<ul style="list-style-type: none"> <li>▪ CPUC issued letters to all retail sellers that are at risk of not meeting their RPS compliance requirements, pursuant to SB 155</li> </ul>