2020 CALIFORNIA RENEWABLES PORTFOLIO STANDARD

Annual Report

NOVEMBER 2020

California Public Utilities Commission

A digital copy of this report can be found at:

https://www.cpuc.ca.gov/RPS_Reports_Data/

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Executive Summary

In compliance with Senate Bill (SB) 1222[1] (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[2] in complying with the RPS program and shows that:

1. California's Electricity Retail Sellers are Generally Meeting Annual RPS Targets

- Most of the retail sellers procured at or above the 31 percent RPS annual target for 2019.[3]
- The large Investor-Owned Utilities (IOUs) and Small and Multi-Jurisdictional Utilities (SMJUs) have executed renewable electricity contracts necessary to exceed the 2020 RPS requirement of 33 percent.
- Most Community Choice Aggregators (CCAs) and Electric Service Providers (ESPs) are on-track to meet or exceed the 2020 RPS requirement.[4]

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

- The IOUs and SMJUs are well-positioned to meet the 65 percent long-term procurement requirement.
- Only 5 of the 29 CCAs that plan to serve load in the 2021-2024 compliance period and beyond have already procured long-term contracts at or above the 65 percent requirement.[5]
- Only 3 of the 13 ESPs that plan to serve load in the 2021-2024 compliance period and beyond have already procured long-term contracts at or above the 65 percent requirement.
- 25 CCAs and 13 ESPs were notified by the CPUC that they will need to procure more resources to meet the RPS requirements in the current and next compliance period.

3. RPS Portfolios Cost Less and Show Increasing In-State Solar and Energy Storage Procurement

- RPS prices reached a historic low of $28/MWh in 2019 for RPS eligible energy contracts across all technology types and have dropped an average of 13 percent per year between 2007 and 2019.
- Approximately 73 percent of the IOU, SMJU, and CCA renewable portfolios were comprised of solar and wind resources in 2019.
- Of the 4,988 MW of renewables in development contracted by CCAs and ESPs, 85 percent are solar PV facilities, and 1,498 MW are paired with 633 MW of energy storage.[6]

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[1] As codified in Public Utilities Code § 913.4. *See* Appendix C for full text of § 913.4.

[2] *See* Appendix C for full list of active retail sellers.

[3] Based on preliminary 2019 Annual Compliance Report filings submitted to the CPUC in August 2020.

[4] 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.

[5] SB 350 established the long-term contracting requirements for the RPS program and applies to all retail sellers beginning in Compliance Period 4 (2021-2024). For more information, see Chapter III.

[6] See Tables 13-16 in Chapter III for a list of projects in development.

I. Background

Each November, the California Public Utilities Commission (CPUC) reports to the Legislature 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) 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[7] 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.[8] 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.[9] Of these retail sellers within the CPUC's jurisdiction, the large IOUs served approximately 62 percent of the total electricity load in 2019, while the SMJUs served 1 percent, CCAs served 24 percent, and ESPs served the remaining 13 percent.[10]

[7] 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.
[8] *See* Chapter IV: Compliance & Enforcement for more details on RPS program requirements.
[9] POUs report their RPS compliance to the CEC and their information is not included in this report.
[10] Retail Sellers' Annual RPS Compliance Reports, August 2020.

II. RPS Progress and Status

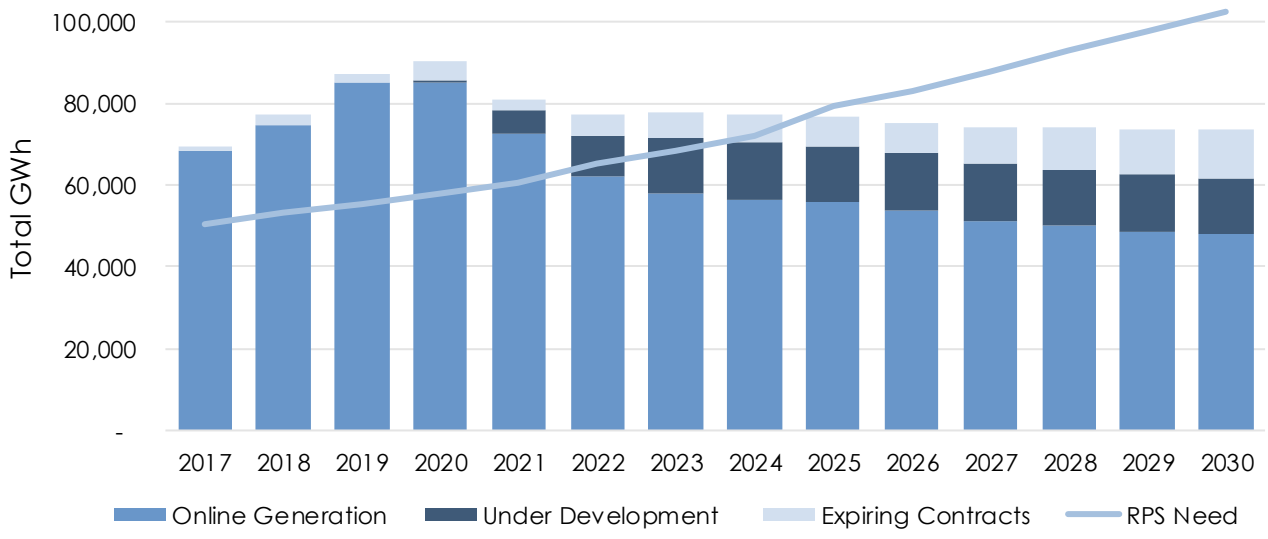
This chapter uses historical annual data through December 31, 2019 to illustrate the state of the RPS program. The data was obtained from the 2020 Draft RPS Procurement Plans[11] and the 2020 RPS Compliance Reports[12] of all retail sellers, including the large investor-owned utilities (IOUs), small and multi-jurisdictional utilities (SMJUs), community choice aggregators (CCAs), and electric service providers (ESPs).

Current Renewable Portfolios

All electricity retail sellers had an annual target to serve at least 31 percent of their electric load with RPS-eligible resources by December 31, 2019. In general, retail sellers either met or exceeded the 31 percent interim RPS target[13] and most are on track to achieve their 2017-2020 compliance period requirements.[14]

Figure 1 below shows statewide progress in meeting the 2030 60 percent RPS requirements.[15]

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



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Data Source: All Retail Sellers' 2020 Draft RPS Procurement Plans (July 2020), Renewable Net Short Calculations

[11] Each year, retail sellers are required to submit their RPS Procurement Plans to the CPUC for approval. Draft 2020 RPS Procurement Plans were submitted in July 2020.

[12] Retail sellers are required to submit RPS Compliance Reports each year on August 1 to demonstrate progress towards meeting their RPS requirements.

[13] Compliance with California's RPS program is determined by multi-year compliance periods.

[14] *See* Chapter IV: Compliance and Enforcement, Annual Compliance Review for more information.

[15] *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

Large Investor-Owned Utilities (IOUs)

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.[16] The three large IOUs are on track to meet their 60 percent 2030 RPS procurement mandate.

The IOUs have either met or surpassed the 2019 annual RPS percentage target of 31 percent, as illustrated in Table 1.[17]

Table 1: 2019 Large Investor-Owned Utilities' RPS Procurement Percentages

Pacific Gas and Electric	31%
Southern California Edison	38%
San Diego Gas & Electric	39%

Data Source: IOUs' 2020 Draft RPS Procurement Plans (July 2020)

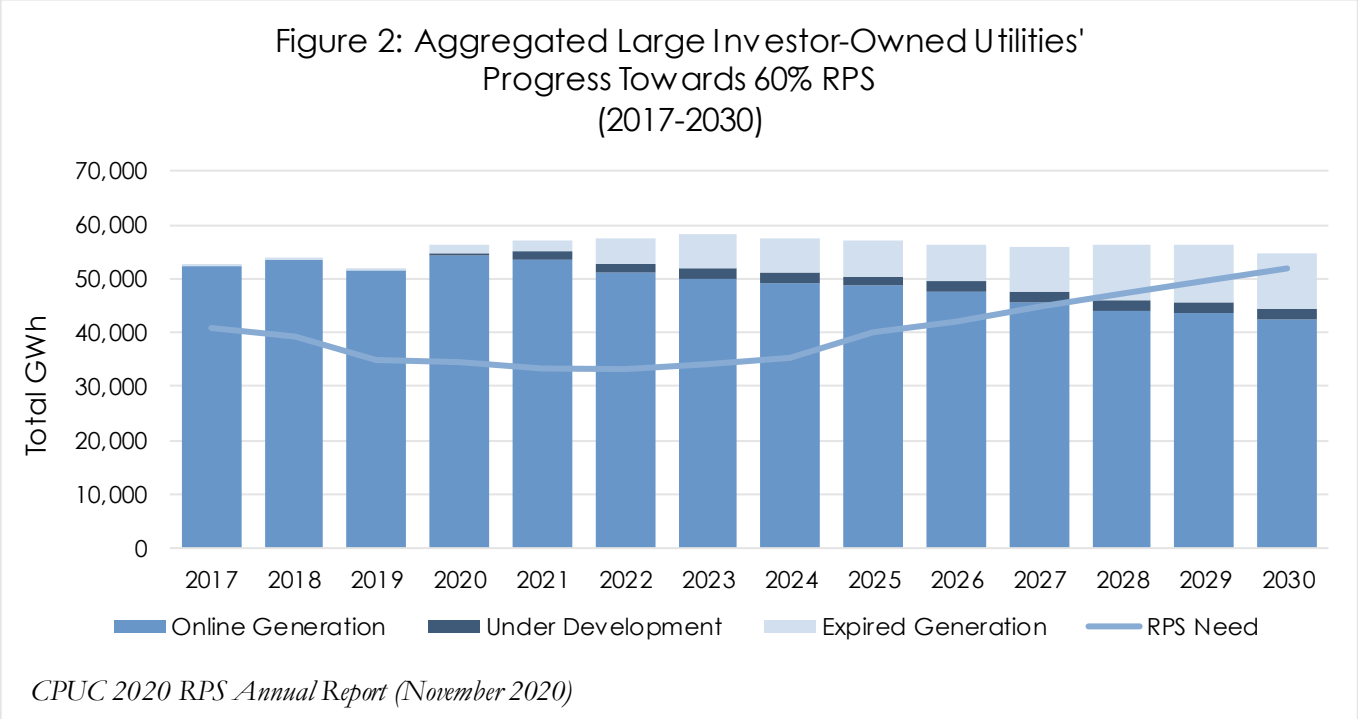
The three large IOUs are currently forecasted to continue to surpass RPS requirements as they are forecasted to have excess procurement for the next seven years.[18] The IOUs may choose to apply excess renewable electricity procured in prior and future years to meet their RPS requirements in future compliance periods. Alternatively, they may sell the energy and renewable energy credits (RECs)[19] associated with the 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 current paradigm of increasing departing load to CCAs, 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 2030 60 percent RPS mandate. Generation forecasts from projects "Under Development" are risk-adjusted to account for a certain degree of project failure.[20] 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

[16] For more information on California electric utility service areas, see the CEC's California Energy Maps website: https://www.energy.ca.gov/maps/serviceareas/electric_service_areas.html
[17] Based on their annual Draft 2020 RPS Procurement Plans, as well as Compliance Reports filed with the CPUC in 2020.
[18] The IOUs' excess procurement is based on the current forecast of bundled electricity load and the amount of RPS resources already under contract.
[19] *See* Appendix B: Glossary and Terms for the full definition of a renewable energy credit (REC).
[20] Failure rate assumptions are provided by the IOUs in their renewable net short calculation provided with their Draft Annual RPS Procurement Plans.

contract, there is a possibility that these facilities will re-contract with their current counterparty or another retail seller in the future.



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Data Source: IOUs' 2020 Draft RPS Procurement Plans (July 2020), 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.[21] 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. PG&E and SDG&E do not plan to conduct an annual solicitation for renewables in 2021. SCE has requested in its 2020 RPS Plan authorization to hold solicitations for additional renewables in 2021, if needed.[22]

Table 2 includes aggregate data[23] to demonstrate the IOUs' actual procurement and forecasted RPS procurement percentages. The data show that the IOUs expect to exceed their 2020 RPS compliance target and will have procured approximately 40 percent RPS by the end of 2020. The data show that by the

[21] 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.
[22] The CPUC must approve solicitations outlined in an IOU's annual RPS Procurement Plan in a Decision.
[23] 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

end of 2024, the IOUs will far exceed the State mandates. This large amount of forecasted procurement above the RPS requirements is primarily driven by load migration to CCAs in SCE's and SDG&E's territory.

Table 2: Aggregated Actual and Forecasted Large Investor-Owned Utilities RPS Percentages for Pacific Gas and Electric, Southern California Edison, and San Diego Gas & Electric

	Compliance Period 2017-2020				Compliance Period 2021-2024			
	33% Requirement				*44% Requirement*			
	2017	**2018**	**2019**	**2020**	**2021**	**2022**	**2023**	**2024**
	35%	39%	46%	52%	58%	59%	61%	61%

Data Source: IOUs' 2020 Draft RPS Procurement Plans (July 2020), Renewable Net Short Calculations

The forecasted RPS percentages of the aggregated large IOUs increases from 52% in 2020 to over 60% in 2023 and beyond. This increase is largely driven by load migration from IOUs to CCAs in SCE's and SDG&E's territories.

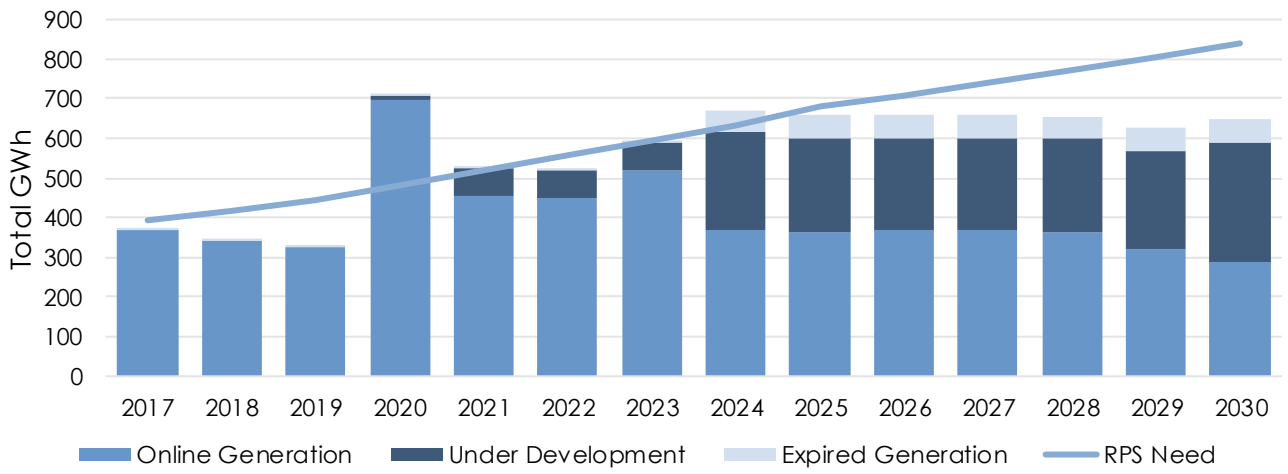
Small and Multi-Jurisdictional Utilities (SMJUs)

The SMJUs[24] serving electric load in California are Bear Valley Electric Service (BVES), Liberty Utilities[25] (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.

[24] 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.
[25] Formerly CalPeco Electric.

Figure 3: Aggregated Small and Multi-Jurisdictional Utilities' Progress Towards 60% RPS (2017-2030)



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Data Source: SMJUs' 2020 Draft RPS Procurement Plans (July 2020), Renewable Net Short Calculations

Table 3 shows aggregate SMJU data for their actual and forecasted RPS procurement percentages.[26]

Table 3: Aggregated Actual and Forecasted Small and Multi-Jurisdictional Utilities RPS Percentages for Bear Valley Electric Service, Liberty Utilities, and PacifiCorp

	Compliance Period 2017-2020				Compliance Period 2021-2024			
	33% Requirement				*44% Requirement*			
	2017	**2018**	**2019**	**2020**	**2021**	**2022**	**2023**	**2024**
	25%	24%	23%	48%	31%	31%	36%	26%

Data Source: SMJUs' 2020 Draft RPS Procurement Plans (July 2020), Renewable Net Short Calculations

[26] The CPUC has aggregated RPS procurement data for confidentiality purposes, as reporting individual percentages would disclose market sensitive information.

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.[27] All of the operating CCAs procured at or above the 2019 annual RPS targets, as shown in Table 5.

The CCAs play an increasingly significant role in meeting the State's renewable energy and greenhouse gas reduction goals. In 2019, nineteen CCAs[28] operated in California and collectively served 25 percent of electric load.[29] The data show that by 2021, IOU load will have departed to CCAs and ESPs in the following percentages: PG&E: 63 percent; SCE: 38 percent; SDG&E: 42 percent, and CCAs will serve 33 percent of the load across California's three IOU service territories.[30]

Table 4 uses aggregated CCA data to show actual and forecasted RPS procurement percentages in the current and next compliance period.[31]

Table 4: Aggregated Actual and Forecasted Community Choice Aggregators' RPS Percentages

	Compliance Period 2017-2020				Compliance Period 2021-2024			
	33% Requirement				*44% Requirement*			
	2017	**2018**	**2019**	**2020**	**2021**	**2022**	**2023**	**2024**
	52%	50%	55%	41%	34%	24%	24%	23%

Data Source: CCAs' 2020 RPS Draft Procurement Plans (July 2020), 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.[32] The CCAs' procurement has been fairly steady and exceeds the 33 percent requirement, but the aggregate foreasted percentage in 2020 dropped 14 percent from 2019, primarily because of several new CCAs coming online with minimal to no RPS procurement and expiring short-term contracts. Figure 4 uses the most current procurement data to illustrate the actual and forecasted progress the CCAs have made toward meeting the RPS requirements on aggregate.

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[27] AB 117 (Migden, 2002) allows local governments to form Joint Powers Authorities to establish community choice energy programs.

[28] 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 Mirage, San Jacinto, San José, Solana Energy Alliance and Valley Clean Energy Alliance. There were no new CCAs that launched in 2019.

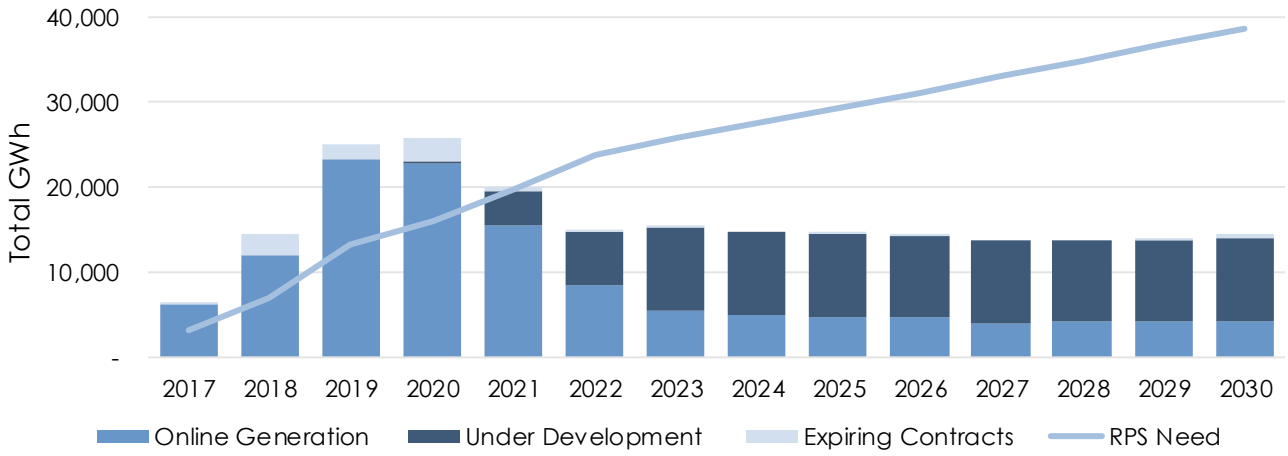
[29] Since December 2018, the CPUC has certified the implementation plans of ten new CCAs. Four of these CCAs expected to begin serving load in 2020, three will start serving in 2021, and three will start serving in 2022. For more information on new CCA implementation, visit https://www.cpuc.ca.gov/general.aspx?id=2567.

[30] 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.

[31] The aggregated RPS compliance percentages are adjusted for CCA launch years and include data from all 29 registered CCAs.

[32] *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)



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Data Source: CCAs' 2020 Draft RPS Procurement Plans (July 2020), Renewable Net Short Calculations

In aggregate, the CCAs have executed enough renewable energy contracts to exceed their forecasted need in 2020. However, three CCAs serving load in 2020 have not yet procured any RPS energy, as shown in Table 5. In addition, three new CCAs are projected to begin serving load in 2021[33] and three more that are projected to begin serving load in 2022 have not yet procured any RPS-eligible energy.[34]

[33] The new CCAs are City of Santa Barbara, Clean Energy Alliance, and San Diego Community Power.
[34] The three CCAs are Butte Choice Energy, City of Commerce, and City of Palmdale.

In 2019, the operational CCAs served a total of 42,800 GWh of load[35] and had an average RPS position of 47 percent. Table 5 below shows the actual positions of individual CCAs that were operational in 2019 and their forecasted positions for 2020 and 2021.[36] 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 contracted for ten or more years.[37]

Table 5: Annual RPS Position of Community Choice Aggregators (%)[38]

First Year Serving Load	CCA	Actuals	Forecasted	
		2019	2020	2021
2010	Marin Clean Energy	62%	64%	55%
2014	Sonoma Clean Power	51%	57%	47%
2015	Lancaster Choice Energy	39%	28%	26%
2016	Peninsula Clean Energy	56%	53%	41%
2016	CleanPowerSF	51%	-	-
2017	Apple Valley Choice	37%	36%	46%
2017	Pico Rivera	54%	35%	16%
2017	Redwood Coast Energy Authority	44%	33%	17%
2017	Silicon Valley Clean Energy	52%	50%	50%
2018	Valley Clean Energy Alliance	45%	48%	7%
2018	Central Coast Community Energy	32%	33%	23%
2018	San Jacinto Power	38%	28%	22%
2018	Rancho Mirage Energy Authority	44%	30%	24%
2018	Clean Power Alliance	61%	-	-
2018	East Bay Community Energy	65%	-	-
2018	Pioneer Community Energy	33%	33%	16%
2018	Solana Energy Alliance	55%	37%	0%
2018	San José Clean Energy	47%	43%	39%
2018	King City Community Power	33%	37%	0%
2020	City of Baldwin Park	-	0%	0%
2020	City of Pomona	-	0%	0%
2020	Desert Community Energy	-	46%	11%
2020	Western Community Energy	-	0%	0%

Data Source: CCA Draft RPS Procurement Plans (July 2020), CCA RPS Compliance Reports (August 2020)

[35] Total number of retail sales reported in the Draft 2020 RPS Procurement Plans, submitted July 2020.

[36] The forecasted positions of LCE, MCE, Pioneer, PRIME, RMEA, and SJP have been adjusted due to reporting errors.

[37] Senate Bill (SB) 350 (de León, 2015) requires that 65 percent of total RPS procurement comes from long term contracts ($\geq$ 10 years) beginning in 2021.

[38] CleanPowerSF, Clean Power Alliance, and East Bay Community Energy have requested confidential treatment of their forecasted RPS position per CPUC D.06-06-066. For more information on forecasted positions, see Chapter IV.

Electric Service Providers (ESPs)

ESPs serve commercial and industrial customers in the Direct Access (DA) program.[39] ESPs currently serve approximately 13 percent of electricity load within the CPUC's jurisdiction.[40] 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.[41]

On January 1st, 2021 the additional 4,000 GWh of Direct Access load granted by SB 237 will be 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.[42] The CPUC is expected to issue its findings on the recommendations and provide them to the Legislature in 2021.

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.

Table 6: Aggregate Actual and Forecasted Electric Service Providers' RPS Percentages

	Compliance Period 2017-2020				Compliance Period 2021-2024			
	33% Requirement				*44% Requirement*			
	2017	**2018**	**2019**	**2020**	**2021**	**2022**	**2023**	**2024**
	40%	39%	41%	32%	15%	20%	21%	21%

Data Source: ESP Draft RPS Procurement Plans (July 2020)

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 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.

[39] Direct Access (DA) service is retail electric service where industrial and commercial 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/General.aspx?id=7881.

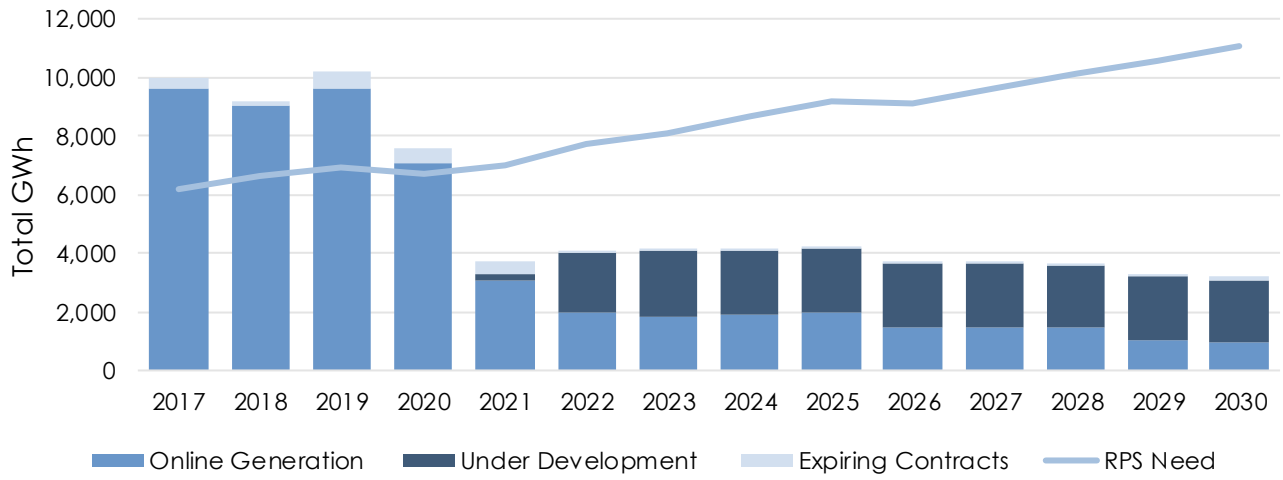
[40] *See* Appendix C for a list of active ESPs.

[41] *See* D.10-03-022, "*Decision Regarding Increased Limits for Direct Access Transactions,*" for more information.

[42] 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

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.

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



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Data Source: ESPs' 2020 Draft RPS Procurement Plans (July 2020), Renewable Net Short Calculations

Renewable Technology Mix

Resource diversity can contribute to achieving a balanced and reliable energy generation portfolio to support increasing the number of renewables used in California.[43] 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.[44]

[43] *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.

[44] The technology category of "Bioenergy" consists of biomass, biogas, biodiesel, landfill gas, and municipal solid waste.

In 2019, the majority of the IOUs' portfolios were comprised of solar and wind technologies.

Table 7: Portfolio Percentages of 2019 RPS Mix for Large IOUs

	Bioenergy	Geothermal	Small Hydro[45]	Conduit Hydro[46]	Solar PV	Solar Thermal	Wind
PG&E	12%	5%	8%	0%	35%	8%	32%
SCE	2%	15%	3%	0.1%	39%	3%	38%
SDG&E	5%	0%	0%	0%	42%	0%	53%

Data Source: IOUs' Annual RPS Compliance Reports (August 2020)

Small and Multi-Jurisdictional Utilities (SMJUs)

As Table 8 below shows, in 2019 BVES procured RECs from small hydro, solar PV, and wind resources, whereas Liberty procured primarily from solar PV facilities. PacifiCorp had the most diverse mix with six different technologies in its California renewable energy portfolio,[47] with the majority comprised of wind and small hydroelectric facilities.

In 2019, the majority of the SMJUs' portfolios were comprised of solar and wind technologies.

Table 8: Portfolio Percentages of 2019 RPS Mix for SMJUs

	Bioenergy	Geothermal	Small Hydro	Conduit Hydro	Solar PV	Wind
Bear Valley Electric Service	-	-	7%	3%	41%	49%
Liberty Utilities	2%	6%	-	-	92%	-
PacifiCorp	18%	1%	22%	0.2%	14%	44%

Data Source: SMJUs' Annual RPS Compliance Reports (August 2020)

[45] Small Hydro projects are defined as hydroelectric facilities that are under 30 MW in capacity by the CEC's RPS Eligibility Guidebook.
[46] 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.
[47] 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.

Community Choice Aggregators (CCAs)

In 2019, the majority of the CCAs' portfolios were comprised of wind and solar resources, but many also included significant amounts of bioenergy, geothermal, and small hydro resources. Table 9 illustrates the renewable energy portfolio mixes of the CCAs that operated in California in 2019.

Table 9: Portfolio Percentages of 2019 RPS Mix for CCAs

	Bioenergy	Geothermal	Small Hydro	Solar PV	Wind	Solar Thermal
Apple Valley Choice Energy	24%	-	5%	-	71%	-
Clean Power Alliance	2%	7%	-	64%	27%	
CleanPowerSF	0.4%	23%	-	16%	61%	-
East Bay Community Energy	7%	16%	7%	14%	56%	-
King City Community Energy	-	-	-	10%	90%	-
Lancaster Choice Energy	48%	5%	15%	20%	11%	-
Central Coast Community Energy	8%	30%	10%	21%	25%	5%
Marin Clean Energy	3%	5%	10%	32%	49%	-
Peninsula Clean Energy	13%	15%	9%	26%	36%	0.04%
Pioneer Community Energy	3%	35%	41%	-	21%	-
Pico Rivera Innovative Municipal Energy	28%	11%	17%	12%	32%	-
Redwood Coast Energy Authority	55%	7%	-	6%	32%	-
Rancho Mirage Energy Authority	64%	20%	-	1%	15%	-
Sonoma Clean Power	-	35%	-	16%	49%	-
Solana Energy Alliance	-	8%	-	39%	53%	-
San José Clean Energy	9%	5%	1%	64%	20%	-
San Jacinto Power	57%	30%	-	5%	8%	-
Silicon Valley Clean Energy	2%	8%	17%	37%	35%	-
Valley Clean Energy Alliance	-	1%	3%	46%	50%	-

Data Source: CCAs' Annual RPS Compliance Reports (August 2020)

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 the most diverse portfolios.

Electric Service Providers (ESPs)

Table 10 illustrates the renewable energy portfolio mixes of the ESPs that operated in California in 2019.

Table 10: Portfolio Percentages 2019 RPS Mix for ESPs

	Bioenergy	Geothermal	Small Hydro	Solar PV	Solar Thermal	Wind
3 Phases Renewables	19%	1%	3%	64%	-	14%
American PowerNet	5%	-	-	-	-	95%
Calpine Energy Solutions	4%	20%	1%	41%	-	34%
Calpine Power America	-	68%	-	-	-	32%
Commercial Energy of CA	99%	1%	-	-	-	-
Constellation New Energy	8%	21%	1%	38%	7%	25%
Direct Energy Business	10%	11%	8%	48%	-	24%
EDF Industrial Power Services	5%	-	-	82%	-	13%
Just Energy Solutions	-	17%	18%	-	-	65%
Pilot Power Group	2%	-	-	9%	-	89%
Shell Energy North America	19%	20%	1%	33%	-	27%
Tiger Natural Gas	100%	-	-	-	-	-
UC Regents	-	-	-	80%	-	20%

Data Source: ESPs' Annual RPS Compliance Reports (August 2020)

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

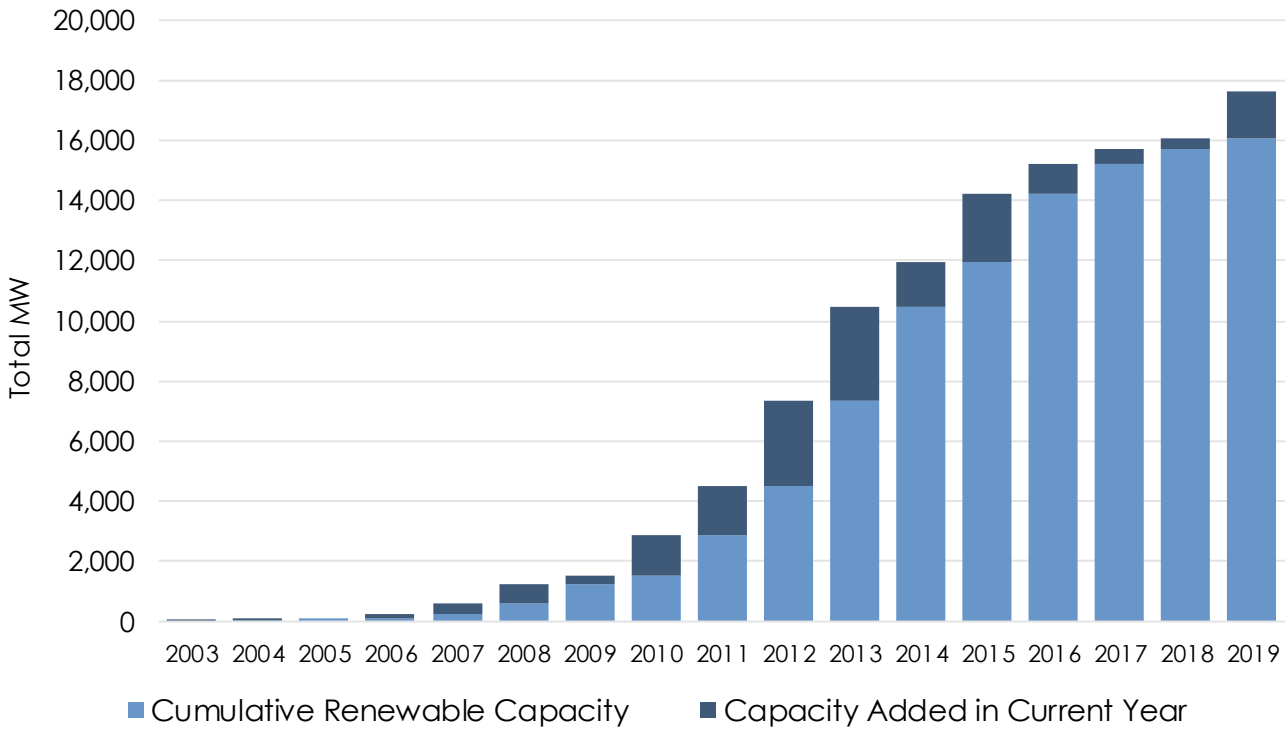
Contracted Renewable Capacity

The RPS program aids in developing the State's transmission and land use planning activities related to the development of renewable energy resources. Increasing renewable capacity on the electric system plays an important role in meeting the State's greenhouse gas reduction goals for the electric sector. Since 2003, the three large IOUs have contracted for over 21,000 MW of renewable capacity[48] 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 2019. Most of the new facilities procured for the RPS program are located in-state. Approximately 1,330 additional MW of renewables contracted by the IOUs are scheduled to come online in 2020-2022.

Figure 6: CPUC Approved Large IOU RPS Capacity Additions (2003-2019)



CPUC 2020 RPS Annual Report (November 2020)

Data Source: CPUC RPS Database, October 2020

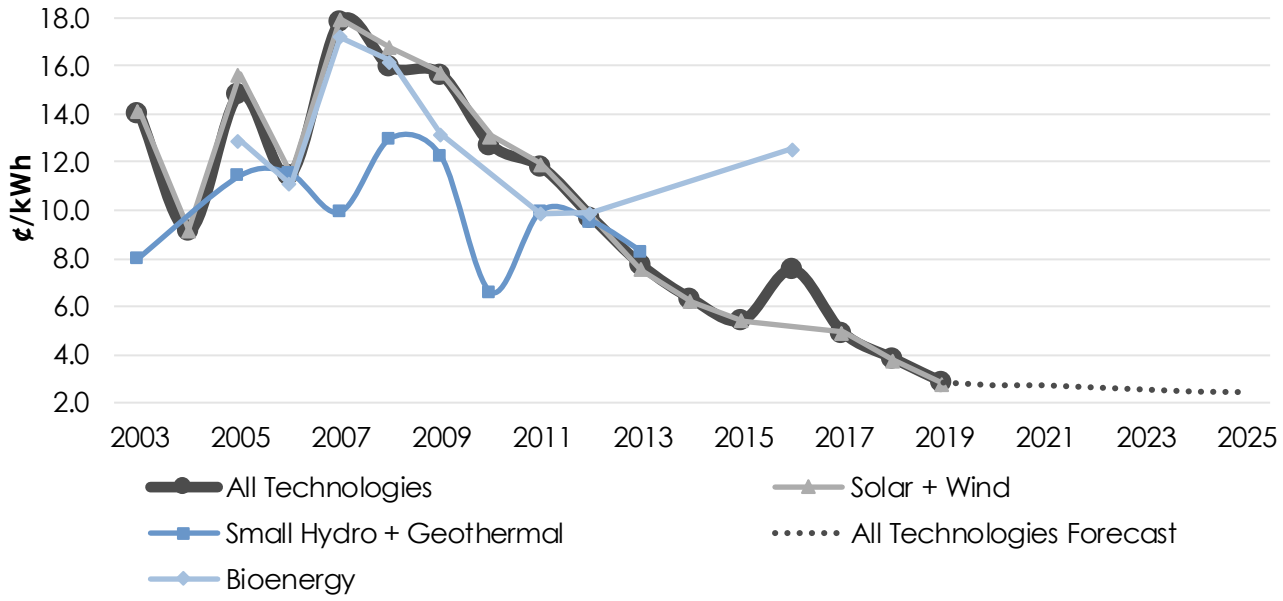
[48] Renewable capacity is defined as the maximum power generating capacity of power plants that use renewable energy sources to produce electricity.

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[49] 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[50] (IRP) proceeding to identify the most cost-effective portfolio of resources to inform future procurement activities.

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)



*Contract costs are for projects greater than 3 MW and are reported by year of execution.
CPUC 2020 RPS Annual Report (November 2020)

Data Source: CPUC 2020 Annual Report on Costs and Cost Savings for the RPS Program (Padilla Report) [51]

[49] 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.
[50] For more information on the IRP proceeding (R.16-02-007), visit https://www.cpuc.ca.gov/irp/.
[51] RPS 2020 Padilla Report to the Legislature on Costs and Savings for the RPS in 2020: https://www.cpuc.ca.gov/uploadedFiles/CPUCWebsite/Content/About_Us/Organization/Divisions/Office_of_Governmental_Affairs/Legislation/2020/2020%20Padilla%20Report.pdf?__ac_lkid=2a14-b0f6-39ef-d2f417268072d07. 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.

Figure 7 shows that RPS contract prices, in real dollars, consistently dropped between 2007 and 2019 for the "all technologies" group. The annual contract price for all technologies decreased an average of 13 percent during that time. The downward trend in contract prices can be attributed to falling prices for wind and solar technologies, which together make up 87 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.[52]

In 2016, average annual contract prices spiked due to mandated bioenergy procurement from high hazard zones (HHZs).[53] The average price of contracts executed in 2019 was 2.82 ¢/kWh compared to 3.81 ¢/kWh in 2018. Following the historical trend, contract prices for RPS resources are anticipated to decline further. For more information on the costs of the RPS program, see the 2020 Annual Report on RPS Costs and Cost Savings (Padilla Report).[54]

[52] 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.

[53] Implementation of Governor Brown's October 30, 2015, Emergency Proclamation (2016). See Chapter IV for more on BioRAM: https://www.ca.gov/archive/gov39/wp-content/uploads/2017/09/10.30.15_Tree_Mortality_State_of_Emergency.pdf and SB 859: https://leginfo.legislature.ca.gov/faces/billNavClient.xhtml?bill_id=201520160SB859.

[54] 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 2020 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 2019, the IOUs collectively executed ten BioMAT contracts for a total of 20 MW of newly contracted RPS capacity.[55] Table 11 below shows the BioMAT project capacity executed for each IOU.

Table 11: Large IOU BioMAT Contracts Executed

	PG&E		SCE		SDG&E		Totals	
	Contracts	MW	Contracts	MW	Contracts	MW	**Contracts**	**MW**
2019	7	12	3	8	-	-	**10**	**20**
2020	1	3	-	-	-	-	**1**	**3**

Data Source: CPUC RPS Database, October 2020

REC SALES

Due to the IOUs' forecasted excess RPS procurement, the CPUC authorized the IOUs to hold REC sales solicitations in 2019 to sell RPS energy from their portfolios.[56] PG&E, SCE, and SDG&E held REC sales solicitations in 2019. PG&E and SCE executed a total of 37 contracts as a result of their solicitations and SDG&E did not execute any contracts. Table 12 below shows REC sales solicitation summaries by IOU.

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**
2019	13	6,389	25	13,347	-	-	**37**	**19,736**
2020	3	615	4	950	-	-	**7**	**1,565**

Data Source: CPUC RPS Database, October 2020

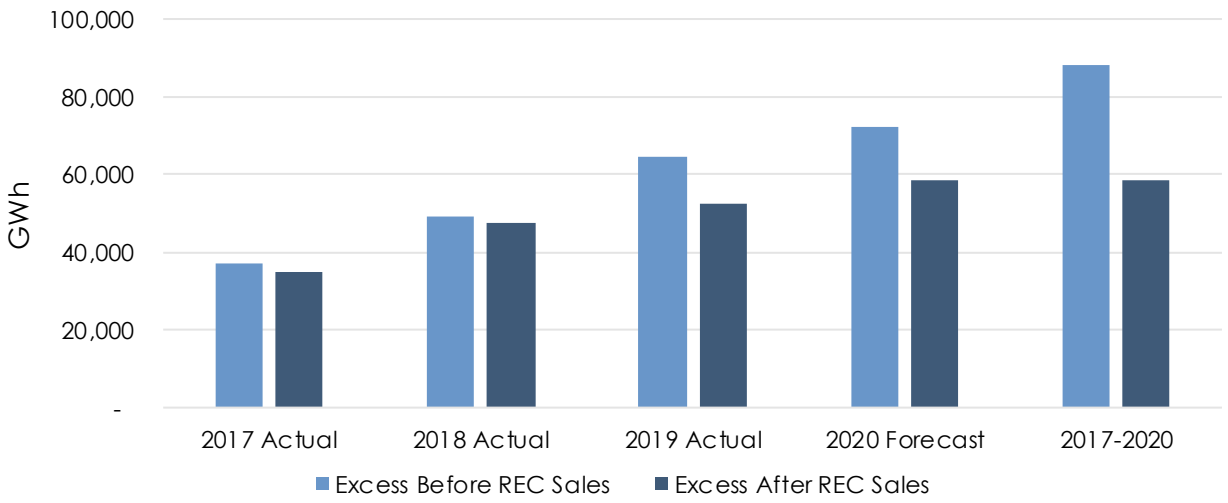
[55] Per D.12-06-038 and D.17-12-007, the CPUC collects monthly data from the large IOUs on RPS projects, including contract details, project development status, technology type, location, capacity, financing status, construction start date, commercial online date, regulatory status, and interconnection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

[56] *See* D.19-12-042.

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. 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 2020 and have requested CPUC approval of additional REC sales agreements.

As the figure 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.

Figure 8: Aggregated IOU Excess Procurement Bank Before and After REC Sales



CPUC 2020 RPS Annual Report (November 2020)

Data Source: IOUs' 2020 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, 17 CCAs have executed long-term contracts with new utility-scale[57] 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: New California Renewables Projects with CCA Contracts COD 2020 - 2021

CCA	Technology	Capacity (MW)	County Location	Contract Term (Years)	COD[58]
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
CleanPowerSF	Solar PV	63	Riverside	20	2020
CleanPowerSF	Wind	50	Kern	15	2020
CleanPowerSF	Wind	60	Kern	15	2021
CleanPowerSF	Solar PV	100	Riverside	20	2021
East Bay Community Energy	Wind	56	Alameda	20	2020
East Bay Community Energy	Solar PV	112	Kern	15	2021
East Bay Community Energy	Solar PV	56	Tulare	15	2021
Marin Clean Energy	Wind	100	Santa Barbara	15	2020
Marin Clean Energy	Solar PV	40	Fresno	20	2020
Marin Clean Energy	Solar PV	20	Fresno	20	2020
Marin Clean Energy	Solar PV	50	Fresno	20	2020
Marin Clean Energy	Solar PV	50	Fresno	20	2020
Marin Clean Energy	Solar PV	80	Riverside	20	2020
Central Coast Community Energy	Solar PV	68	Kings	17	2021
Central Coast Community Energy	Solar PV	76	Kern	20	2021
Peninsula Clean Energy	Solar PV	100	Kings	15	2020
San José Clean Energy	Solar PV	62	Kern	12	2021
Silicon Valley Clean Energy	Solar PV	93	Kings	17	2021
Silicon Valley Clean Energy	Solar PV	70	Kern	20	2021
Sonoma Clean Power	Wind	80	Alameda	20	2020
Valley Clean Energy	Solar PV	50	Kings	15	2021
Multiple: Apple Valley Choice, Lancaster Choice, Pico Rivera, Rancho Mirage, San Jacinto Power	Wind	29	Kern	12	2021
Total		**1,838**			

Data Source: CCAs' RPS Draft Procurement Plans (July 2020), CCAs' Annual RPS Compliance Reports (August 2020)

[57] Utility-scale projects refer to contract capacities of 20 MW or greater.
[58] Commercial operation date (COD) is defined as the date which a project has achieved or is expected to achieve full commercial operation.

The above table shows the in-state renewable energy projects that are currently under development by CCAs with commercial online dates in 2020 and 2021. Of the contracts listed, about 80% are for new solar PV resources.

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 and 2023.

Table 14: New California Renewables Projects with Community Choice Aggregator Contracts COD 2022 - 2023

CCA	Technology	Capacity (MW)	County Location	Contract Term (Years)	COD
Clean Power Alliance	Solar PV	60	Kern	15	2022
Clean Power Alliance	Solar PV	300	Tulare	15	2023
Clean Power Alliance	Solar PV	65	Kern	15	2023
CleanPowerSF	Solar PV	20	Stanislaus	20	2023
East Bay Community Energy	Solar PV	100	Fresno	20	2022
East Bay Community Energy	Solar PV	125	Kern	20	2022
East Bay Community Energy	Solar PV	100	Kern	15	2022
Central Coast Community Energy	Solar PV	60	Kern	15	2022
Central Coast Community Energy	Solar PV	120	Kern	20	2023
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	100	Fresno	20	2022
San José Clean Energy	Solar PV	100	Kern	15	2022
Silicon Valley Clean Energy	Solar PV	40	Kern	15	2022
Silicon Valley Clean Energy	Solar PV	80	Kern	20	2023
Sonoma Clean Power	Solar PV	50	Stanislaus	20	2023
Total		**1,454**			

Data Source: CCAs' RPS Draft Procurement Plans (July 2020), CCAs' Annual RPS Compliance Reports (August 2020), and CCA Public Press Releases

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

Table 15: New Out-of-State Renewables Projects with Community Choice Aggregator Contracts COD 2020 - 2022

CCA	Technology	Capacity (MW)	Location	Contract Term (Years)	COD
Clean Power Alliance	Wind	300	Mohave, AZ	19	2020
Central Coast Community Energy	Solar PV	75	Clark, NV	20	2022
Silicon Valley Clean Energy	Solar PV	50	Clark, NV	20	2022
Total		**425**			

Data Source: CCAs' RPS Draft Procurement Plans (July 2020), CCAs' Annual RPS Compliance Reports (August 2020)

Several operating CCAs have only entered into contracts with RPS facilities that are already in commercial operation. Three CCAs that launched in 2020 have not yet procured any RPS energy.[59]

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 nearly 92% of total new procurement is from in-state solar PV resources.

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

ESP	Technology	Capacity (MW)	County Location	Contract Term (Years)	COD
Calpine Energy Solutions	Solar PV	20	Kings	10	2020
Calpine Energy Solutions	Solar PV	40	Kern	10	2021
Calpine Power America	Solar PV	63	Kings	25	2021
Calpine Power America	Solar PV	132	Kern	10	2021
Constellation NewEnergy	Solar PV	200	Riverside	12	2021
Constellation NewEnergy	Solar PV	220	Kern	13	2021
Constellation NewEnergy	Solar PV	70	Imperial	12	2020
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	Riverside	15	2021
Shell Energy North America	Wind	94	Riverside	12	2020
Total		**1,271**			

Data Source: ESPs' Draft RPS Procurement Plans (July 2020) and ESPs' Annual RPS Compliance Reports (August 2020)

[59] RPS Compliance Reports, City of Baldwin Park, City of Pomona, and Western Community Energy, August 2020.

New Utility-Scale Renewable Resource Locations and Least-Cost Best-Fit Evaluations

As noted above the CCAs and ESPs have recently contracted for a number of resources. The RPS procurement or contracting process begins with annual RPS procurement plans which the CPUC initiates with a Ruling based on Pub. Util. Code § 399.13(a)(6). The Ruling directs all retail sellers to include in their RPS Procurement Plans their bid evaluation criteria and methodology for how bids from competitive RPS solicitations will be selected, also known as the Least-Cost Best-Fit (LCBF) evaluation. In particular, the CPUC directs retail sellers to describe how their solicitations and procurement decisions give preference to renewables located in specific communities[60] and how their methodologies address state policies related to equity, the environment, and economic development.

While the CPUC has not specified how retail sellers should incorporate environmental and economic benefits to communities, the CPUC has defined the communities of concern as Disadvantaged Communities (DACs). DACs represent areas throughout California which most suffer from a combination of economic, health, and environmental burdens.[61] To create a roadmap to expand public inclusion in CPUC decision-making and improve services to targeted communities across California, the CPUC adopted the use of CalEnviroScreen in the CPUC's Environmental and Social Justice (ESJ) Action Plan in 2019.[62] CalEnviroScreen is a tool that uses environmental and socioeconomic information to produce levelized scores for every residential California census tract so that communities' pollution burden can be compared.[63] For example, a region that has a high score experiences a higher pollution burden than a region with a low score. Scores above 75% are considered to identify DACs. Further, the CPUC has approved IOUs' LCBF methodologies that incorporate CalEnviroScreen with regards to evaluating projects impacts on DACs. The CPUC acknowledges that there are rural regions with economic and environmental challenges that are not captured in CalEnviroScreen. Retail sellers have the opportunity to describe how new renewables projects affect those areas as well in their RPS Procurement Plans.

Many CCAs have been compliant with CPUC RPS Procurement Plan directions regarding descriptions of solicitations and procurement evaluations.[64] Most recently, in their Draft 2020 RPS Procurement Plans[65] CCAs described that they consider both quantitative and qualitative criteria to determine if projects are a fit for their needs and existing portfolios. In particular, the CCAs that have contracted for new-build renewables also consider affordability and the local benefits attributed to projects, including impacts on DACs.

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[60] *See* Public Utilities Code Section 399.13(a)(8).
[61] *See* CalEPA's website for more information on the DAC definition: https://oehha.ca.gov/calenviroscreen/sb535
[62] The CPUC's ESJ Action Plan can be found here: https://www.cpuc.ca.gov/CPUCNewsDetail.aspx?id=6442461331
[63] *See* About CalEnviroScreen for more information: https://oehha.ca.gov/calenviroscreen/about-calenviroscreen
[64] The IOUs are not included in this section of the report because they have not conducted RPS procurement solicitations for several years.
[65] *See* Section 10 of Draft 2020 RPS Plans for CCAs and ESPs for more information on their bid selection methodologies.

The table below shows the degree to which CCAs that procured new renewables that are not yet online (listed in Tables 13 through 15) consider DACs in their LCBF evaluations.

Table 17: Disadvantaged Communities Considerations in LCBF for CCAs

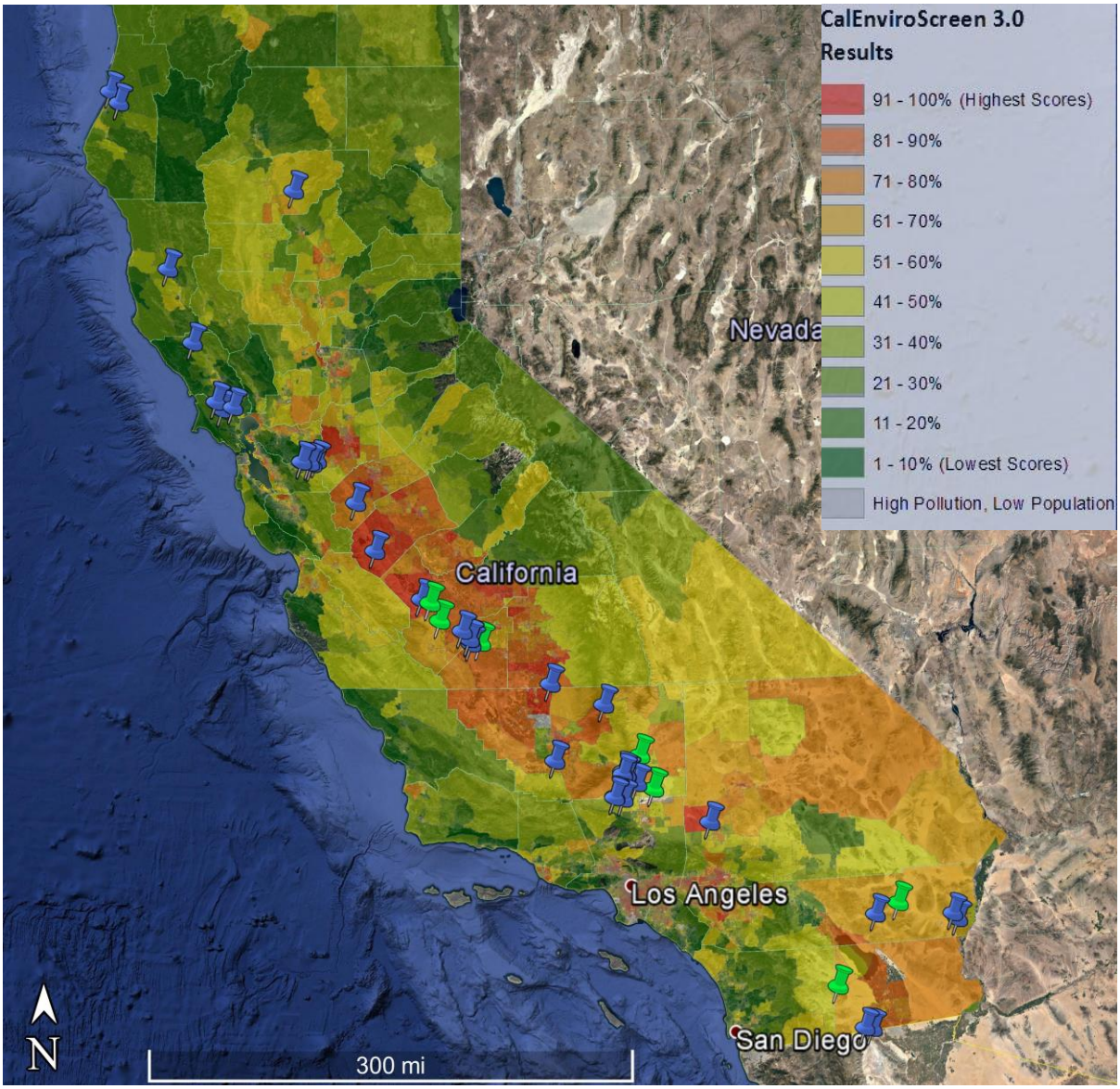
CCA	Specific Considerations
Central Coast Community Energy	Has not considered benefits to DACs in past solicitations but will consider impacts to DACs in future solicitations.
Clean Power Alliance	Gives preference to projects in DACs that can demonstrate community benefits such as workforce development and hiring of residents in DACs.
CleanPowerSF	Allows developers to make a community benefit commitment in the County where the renewable project will be located.
East Bay Community Energy	Considers project location and economic and environmental benefits to communities in Alameda county, with a focus on DACs.
Marin Clean Energy	Considers local hiring and prevailing wage benefits and impacts to air pollution and economic development in DACs.
Peninsula Clean Energy	Considers whether projects are located in DACs, can demonstrate DAC workforce and community development benefits, and have conducted outreach to DACs.
Pioneer Community Energy	Considers air pollution impacts on communities where projects are located.
Redwood Coast Energy Authority	Considers environmental impacts on communities with high levels of poverty, pollution, and unemployment.
San José Clean Energy	Considers local hiring and prevailing wage benefits and impacts on emissions in DACs.
Silicon Valley Clean Energy	Has not considered benefits to DACs in past solicitations but will consider impacts to DACs in future solicitations.
Sonoma Clean Power	Procurement strategy incorporates need to displace emitting resources with non-emitting resources.
Valley Clean Energy	Considers equity and impacts to economically and environmentally disadvantaged areas.

Source: CCAs' Draft 2020 RPS Procurement Plans

In their Draft 2020 RPS Procurement Plans, most ESPs did not report incorporating any disadvantaged community considerations when selecting their new-build renewables projects. However, Calpine Energy Solutions states that it gives preference to renewable projects and cites to its two new solar contracts that are located in DACs. UC Regents also considers the need to give preference to renewables in DACs and has contracted with one solar facility located in a DAC.

The map below uses data from the previous section to show where new renewable projects contracted by CCAs and ESPs are being built compared to the CalEnviroScreen score results.

Figure 9: New RPS Projects Contracted by CCAs and ESPs



Legend: Blue pins represent CCA contracts and green pins represent ESP contracts

Data Source: Project Development Status Updates from Draft 2020 RPS Procurement Plans, July 2020

As the map shows, many of the newly contracted renewable projects will be built in the highly burdened region of the Central Valley. It is unclear if these procurement decisions are tied directly to the CCAs' incorporation of consideration of DACs or because of the area's advantageous solar energy resources. However, construction of new renewable projects can contribute to both the local economy and environment by creating jobs and potentially offset or avoid emissions from non-renewable generation.

Progress in Long-Term Contracting

A key aspect of meeting RPS requirements is meeting the long-term contracting requirement. SB 350 modified the long-term contracting requirement which requires all retail sellers to procure 65 percent of their RPS portfolios using long-term contracts,[66] beginning in Compliance Period 2021-2024. In addition to revising the long-term contract requirement, SB 350 also allows retail sellers to elect early compliance with the new long-term contracting requirements.[67] Retail sellers who elect to comply early with the SB 350 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 sellers, including all IOUs, have elected to early-comply.[68] This section uses RPS compliance 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 table below illustrates how much of the retail sellers' 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[69]

	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 2020)

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 procure additional RPS energy to meet its long-term requirements for Compliance Period 2025-2027, as it has one contract fulfilling its long-term obligations that expires at the end of 2023.

Based on its current load forecasts for Compliance Period 2021-2024, Liberty and PacifiCorp are forecasted to be sufficiently procured to meet its long-term contracting requirement. Liberty has already

[66] Long-term contracts are defined as contracts with a term of ten or more years.
[67] *See* Decision (D.)17-06-026 "*Decision Revising Compliance Requirements for the California Renewables Portfolio Standard in Accordance with Senate Bill 350,*" for more information.
[68] Retail sellers with early compliance elections include PG&E, SCE, SDG&E, BVES, PacifiCorp, and The Regents of the University of California.
[69] The procurement contracts have not been fully reviewed by the CPUC and these are forecasted compliance percentages based on self-reported data.

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: Some CCAs need to make more progress to meet both the 0.25 percent long-term contracting requirement for Compliance Period 2017-2020 and the 65 percent long-term procurement requirement commencing in Compliance Period 2021-2024. Of the 23 CCAs that served load in Compliance Period 2017-2020, 18 are forecasted to have procured sufficient long-term contracts to meet the long-term requirement.

Table 19: Forecasted Percentage of CCA Long-Term Requirements Met[70]

CCA Name	Compliance Period 2017-2020	Compliance Period 2021-2024
Apple Valley Choice Energy	100%	80%
Central Coast Community Energy	100%	100%
City of Baldwin Park	0%	0%
City of Pomona	0%	0%
Clean Power Alliance	100%	63%
CleanPowerSF	100%	100%
Desert Community Energy	0%	0%
East Bay Community Energy	100%	56%
King City Community Power	100%	1%
Lancaster Choice Energy	100%	90%
Marin Clean Energy	100%	100%
Peninsula Clean Energy	100%	95%
Pico Rivera Innovative Municipal Energy	100%	55%
Pioneer Community Energy	100%	82%
Rancho Mirage Energy Authority	100%	83%
Redwood Coast Energy Authority	100%	100%
San Jacinto Power	100%	76%
San José Clean Energy	100%	59%
Silicon Valley Clean Energy	100%	97%
Solana Energy Alliance	0%	0%
Sonoma Clean Power	100%	100%
Valley Clean Energy	100%	60%
Western Community Energy	0%	0%

Data Source: CCAs' Annual RPS Compliance Reports (August 2020)

Out of the 29 CCAs that plan to serve load in Compliance Period 2021-2024, 18 CCAs have already made progress towards meeting their long-term requirements. There are several CCAs that have procured sufficient RPS energy from long-term contracts to meet their 65 percent long-term contracting requirement ahead of schedule. However, the majority of the CCA long-term contracts are currently under

[70] The procurement contracts have not been fully reviewed by the CPUC and these are forecasted compliance percentages based on self-reported data.

development and have not yet reached commercial operation, and assessment of the 65 percent requirement is based on delivered generation.

Eleven CCAs[71] that plan to serve load in Compliance Period 2021-2024 have not procured any long-term RPS contracts. Out of the 11 CCAs, two have procured only short-term contracts[72] and nine as of yet have not procured any RPS-energy. 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 procured the minimum quantity required for long-term contracting. With the long-term contracting requirement increasing from 0.25 percent of retail sales in the prior compliance period[73] to 65 percent of a retail sellers' procurement quantity requirement for the compliance period, the ESPs collectively need to execute significant amounts of long-term contracts to meet the RPS requirements.

Table 20: Forecasted ESP Percentage of Long-Term Requirements Met[74]

ESP Name	Compliance Period 2017-2020	Compliance Period 2021-2024
3 Phases Renewables	100%	6%
Agera Energy	0%	N/A
American PowerNet	100%	N/A
Calpine Energy Solutions	100%	60%
Calpine Power America	100%	92%
Commercial Energy of California	100%	1%
Constellation NewEnergy	100%	57%
Direct Energy Business	100%	100%
EDF Industrial Power Services	10%	0%
Just Energy Solutions	100%	3%
Pilot Power Group	100%	0%
Shell Energy North America	100%	100%
Tiger Natural Gas	100%	14%
UC Regents	100%	100%

Data Source: ESPs' Annual RPS Compliance Reports (August 2020)

UC Regents elected to early-comply with the 65 percent long-term contracting requirement and is forecasted to exceed the requirement with existing long-term contracts in the near term. Most of the remaining ESPs are forecasted to meet their 0.25 percent long-term contracting requirement for Compliance Period 2017-2020. Of the twelve ESPs that forecast serving load in the 2021-2024

[71] The eleven CCAs that have not procured any long-term RPS energy include Butte Choice Energy, Clean Energy Alliance, City of Baldwin Park, City of Commerce, City of Pomona, City of Santa Barbara, Desert Community Energy, City of Palmdale, San Diego Community Power, Solana Energy Alliance, and Western Community Energy.

[72] The two CCAs are Desert Community Energy and Solana Energy Alliance.

[73] *See* Decision (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).

[74] The procurement contracts have not been fully reviewed by the CPUC and these are forecasted compliance percentages based on self-reported data.

Compliance Period, three ESPs are forecasted to have procured enough long-term RPS energy, seven have procured some long-term RPS energy, and two have not procured any long-term RPS energy to meet the 65 percent requirement.

While the IOUs are well-positioned to meet the 65 percent long-term contracting requirement and consequently overall RPS requirements, the CCAs' and ESPs' forecasted shortfalls in meeting the 65 percent long-term contracting requirement raises concerns for potential failure in meeting overall RPS requirements. See Chapter VI for further discussion on the progress and recommendations regarding long-term procurement contracting.

Project Development Delays and COVID-19 Impacts

New renewable project development may be delayed or terminated as a result of unforeseen circumstances such as permitting or transmission delays, project failure, upstream supply chain issues, or contract default. Since the start of the RPS program, the CPUC and retail sellers have worked to address and mitigate these circumstances through various actions because these delays or failures may result in retail sellers not meeting RPS requirements and California not meeting its climate goals. This past year, however, there was a new unforeseen consequence – the COVID-19 pandemic, which brought numerous changes and challenges.

Planning and Procurement Delays

In their Draft 2020 RPS Procurement Plans, retail sellers were required to assess potential delays for RPS projects that are currently in development, and evaluate the impacts of COVID-19 and other factors on planning and procurement.[75] The majority of retail sellers stated that they have been actively monitoring potential impacts from COVID-19 related to load changes, project development, and contractual adjustments and incorporating these factors into their RPS procurement planning.

- **Load Forecasting:** As a result of the global COVID-19 pandemic and resulting stay-at-home orders in California, the CAISO observed modest overall load reductions on the electricity grid that average five percent during weekday peak hours and two percent during peak weekend hours from mid-March through late July.[76] Load reductions from stay-at-home orders may have a greater impact on retail sellers depending on their proportions of commercial customers and residential customers. The decrease in customer load due to stay-at-home orders is the primary impact to retail sellers. Most CCAs have reported load decreases varying from 5 to 10 percent since the start of the pandemic.[77] One CCA in particular, CleanPowerSF, is conducting load forecast analysis under various stay-at-home and economic recovery scenarios to understand impacts on demand in order to adjust its procurement strategy.[78] Other retail sellers are taking a similar approach.
- **Project Development:** For solar and hybrid solar plus storage projects, a significant amount of global battery and solar panel supplies are imported to California from other countries. Equipment delivery delays that have resulted from COVID-19 could have impacts to construction of new

[75] *See* Assigned Commissioner Ruling for 2020 RPS Procurement Plans.
[76] *See* the CAISO's presentation for more information: http://www.caiso.com/Documents/COVID-19-Impacts-ISOLoadForecast-Presentation.pdf
[77] *See* CCAs' Draft 2020 RPS Procurement Plans, submitted July 2020.
[78] *See* CleanPowerSF's Draft 2020 RPS Procurement Plan, pp. 17.

renewable facilities in the near term. Retail sellers have not cited disruption in supply chains as an existing issue but have considered it as an issue that could arise in the future. Retail sellers report that they are communicating with developers to assess potential delays in the pre-construction development phases related to interconnection, permitting, financing, and site control.

- **Contractual Adjustments:** Many retail sellers have reported in their Draft 2020 RPS Procurement Plans that they are incorporating COVID-19 specific force majeure[79] language into their new-build renewable PPAs. This added language is meant to proactively address potential contractual issues that may be caused by COVID-19 effects.

[79] A force majeure clause is a contractual provision that temporarily or permanently relieves a party's obligations under the contract when circumstances beyond the party's control arise. Force majeure clauses often are related to unforeseen events such as natural disasters or global pandemics.

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 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. 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[80] 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[81] to confirm each retail seller's annual REC claims. The CEC utilizes reports from the Western Renewable Energy Generation Information System (WREGIS)[82] 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 evaluate compliance.

RPS Compliance Requirements

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.[83]

[80] 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.

[81] *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.

[82] 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.

[83] *See* Appendix A: About the RPS Program for more detail.

Procurement Quantity Requirement (PQR)

The PQR is the statutorily[84] 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.[85] 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.[86]

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.[87]

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.[88] 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. Beginning in Compliance Period 4 (2021-2024), 65 percent of all RPS procurement must come from long-term contracts.

[84] 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.

[85] *See* D.19-06-023 for more information: https://docs.cpuc.ca.gov/PublishedDocs/Published/G000/M307/K595/307595168.PDF

[86] For more details on the RPS Compliance rules, visit https://www.cpuc.ca.gov/General.aspx?id=3856.

[87] Pursuant to Public Utilities Code § 399.17 and 399.18.

[88] *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.[89]

In 2019, the CPUC made final compliance determinations for Compliance Period 2014 - 2016 and determined that out of 26 retail sellers, 3 were found to be 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.[90]

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.[91] The total penalties collected for Compliance Period 2011-2013 were approximately $4.1 million.[92]

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.

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[89] 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.

[90] *See* D.17-06-026 for more information on the RPS long-term contracting rules.

[91] CPUC Decision (D).19-08-007.

[92] 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.

Annual Compliance Reviews

Enforcement action is taken by the CPUC once the compliance period has ended and the CEC has verified all procurement claims, although retail sellers are required to submit annual preliminary Compliance Reports to the CPUC each August. 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 all stakeholders greater transparency concerning whether a retail seller may be off-track in meeting its procurement requirements, and what actions it should take to ensure its compliance with the RPS program.

The tables below show the results from the 2020 annual 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 near Compliance Periods were considered to be "On Track." Retail sellers that have not 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 2017-2020	Risk Level	Compliance Period 4 2021-2024	Risk Level
Pacific Gas and Electric	IOU	On Track	-	On Track	-
Southern California Edison	IOU	On Track	-	On Track	-
San Diego Gas & Electric	IOU	On Track	-	On Track	-
Bear Valley Electric Service	SMJU	On Track	-	At Risk	Medium
PacifiCorp	SMJU	On Track	-	At Risk	Low
Liberty Utilities	SMJU	At Risk	Low	At Risk	Medium

Data Source: IOU and SMJU RPS Compliance Reports (August 2020)

IOU/SMJU: All of the large IOUs are on track to meet their requirements. All three SMJUs must procure additional RPS energy to meet their future compliance requirements, and Liberty Utilities must procure additional RPS to meet its near-term compliance requirements.

Table 22: CCA Annual Compliance Review

Reporting LSE	Compliance Period 2017-2020	Risk Level	Compliance Period 2021-2024	Risk Level
Apple Valley Choice Energy	On Track	-	At Risk	Medium
Butte Choice Energy	N/A	N/A	At Risk	High
Central Coast Community Energy	On Track	-	On Track	-
City of Baldwin Park	At Risk	High	At Risk	High
City of Commerce	N/A	N/A	At Risk	High
City of Palmdale	N/A	N/A	At Risk	High
City of Pomona	At Risk	High	At Risk	High
City of Santa Barbara	N/A	N/A	At Risk	High
Clean Energy Alliance	N/A	N/A	At Risk	High
Clean Power Alliance	On Track	-	At Risk	Medium
CleanPowerSF	On Track	-	On Track	-
Desert Community Energy	At Risk	High	At Risk	High
East Bay Community Energy	On Track	-	At Risk	High
King City Community Power	At Risk	High	At Risk	High
Lancaster Choice	On Track	-	At Risk	Medium
Marin Clean Energy	On Track	-	On Track	-
Peninsula Clean Energy	On Track	-	At Risk	Low
Pico Rivera Innovative Municipal Energy	On Track	-	At Risk	High
Pioneer Community Energy	On Track	-	At Risk	Medium
Rancho Mirage Energy Authority	On Track	-	At Risk	Medium
Redwood Coast Energy Authority	At Risk	Low	On Track	-
San Diego Community Power	N/A	N/A	At Risk	High
San Jacinto Power	On Track	-	At Risk	High
San José Community Energy	At Risk	Low	At Risk	Medium
Silicon Valley Clean Energy	On Track	-	At Risk	Low
Solana Energy Alliance	At Risk	High	At Risk	High
Sonoma Clean Power	On Track	-	On Track	-
Valley Clean Energy Alliance	On Track	-	At Risk	High
Western Community Energy	At Risk	High	At Risk	High

Data Source: CCA RPS Compliance Reports (August 2020)

CCA: Most CCAs that are currently serving load are on track to meet their RPS compliance period 2017-2020 requirements. The CCAs with high risk levels in the current compliance period have either not yet contracted any RPS energy or not yet satisfied the long-term contracting requirement. The medium and low risk CCAs have contracted RPS energy but have not met their PQR and/or PBR.

In Compliance Period 2021-2024, CCAs with high risk levels have not met their PQR, PBR, or long-term contracting requirement. CCAs with medium to low risk levels are those that have contracts but have not yet met at least one compliance element (PQR, PBR, or long-term contracting requirement). The distinction between medium risk levels and medium/low risk levels is based on the additional amount the CCA must procure to meet its requirements.

Table 23: ESP Annual Compliance Review

Reporting LSE	Compliance Period 2017-2020	Risk Level	Compliance Period 2021-2024	Risk Level
3 Phases Renewables	On Track	-	At Risk	High
Agera Energy	At Risk	High	N/A	N/A
American PowerNet	At Risk	Low	N/A	N/A
Calpine Energy Solutions	At Risk	High	At Risk	High
Calpine Power America	On Track	-	At Risk	Medium
Commercial Energy of CA	At Risk	Low	At Risk	High
Constellation NewEnergy	On Track	-	At Risk	High
Direct Energy Business	On Track	-	On Track	-
EDF Industrial Power	At Risk	High	At Risk	High
Just Energy Solutions	At Risk	High	At Risk	High
Pilot Power Group	On Track	-	At Risk	High
Shell Energy North America	At Risk	Low	At Risk	Medium
Tiger Natural Gas	On Track	-	At Risk	High
Regents of University of CA	On Track	-	At Risk	Low

Data Source: ESP RPS Compliance Reports (August 2020)

ESP: Seven of 14 ESPs are on track to meet their RPS compliance period 2017-2020 requirements. The ESPs with risk in the current compliance period have either not yet contracted enough RPS energy to meet their PQR or have not yet satisfied the long-term contracting requirement.

Eleven ESPs have compliance risk for meeting their RPS Compliance Period 2021-2024 requirements. The eight ESPs with high risk levels have not met their PQR, PBR, or long-term contracting requirement. The three ESPs with medium and low risk levels have procurement but have not yet met at least one compliance element (PQR, PBR, or long-term contracting requirement). The ESPs that have been designated as N/A are not forecasting any load for Compliance Period 2021-2024.

V. 2019 RPS Program Activities

This chapter identifies and discusses key 2019/2020 RPS program activities and accomplishments including implementation of legislation, procurement activities, and interagency planning and coordination.

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 energy zero-carbon resources supply 100 percent of electric retail sales to California end-use customers by 2045.

In June 2019,[93] the CPUC began implementing SB 100, adopting the modified RPS PQRs beginning in Compliance Period 2021-2024. The CPUC assigned compliance targets for each compliance year and determined that the 60 percent RPS PQR would continue indefinitely beyond 2030.[94] SB 100's goal beyond the 60 percent RPS after 2030 will be examined in the IRP proceeding.[95] In addition, the CEC, CPUC, and the California Air Resources Board (CARB) are collaborating on a joint agency SB 100 report to be issued January 2021.[96]

Integrated Resource Planning and RPS Alignment

Since SB 350 was adopted in 2015, the CPUC has been coordinating between the RPS program and the recently established 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.[97] Activities in the IRP proceeding are complementary to RPS procurement activities and resource planning for the electric sector. The CPUC has significant flexibility and continues to coordinate between IRP and RPS, both formally and informally, in the areas of planning and reporting requirements where there is substantial overlap.

The CPUC is working to align the two 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 LSEs to submit IRP off-year filings to meet annual statutorily mandated RPS reporting requirements. Parties to the RPS proceeding have commented on this Staff proposal, which is being considered by the CPUC. The Staff Proposal offered a streamlined, coordinated schedule to allow the RPS and IRP proceedings to converge on the same timeline. The next steps will be provided by subsequent CPUC decision(s) or ruling(s).[98]

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[93] *See* CPUC Decision (D).19-06-023.
[94] As mandated by the amendments to § 399.15(b)(2)(B).
[95] *See* Proceeding R.16-02-007.
[96] *See* https://www.energy.ca.gov/sb100.
[97] *See* CPUC Decision (D).18-02-018.
[98] 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.[99]

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 in 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)

The ReMAT[100] 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),[101] such as small hydro, solar PV, and wind, to sell renewable electricity to utilities under standard terms and conditions. The ReMAT program was suspended on December 15, 2017 in order to address a federal court order.[102]

In October 2020, the Commission approved a decision that reopens the ReMAT program and revises it to use administratively set prices by product category with a time-of-delivery adjustment.[103] These changes are necessary to resume the ReMAT program in compliance with the Federal District Court order.

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[99] 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.

[100] 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.

[101] 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.

[102] 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.*). 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.

[103] *See* D.20-10-005: https://docs.cpuc.ca.gov/SearchRes.aspx?DocFormat=ALL&DocID=348746212.

BIOENERGY MARKET ADJUSTING TARIFF (BIOMAT)

BioMAT is a FIT program created by SB 1122 (Rubio, 2012), which established a 250 MW procurement program for small-scale bioenergy projects. The program was implemented in 2014[104] and uses a standard contract and a market-based mechanism to arrive at the offered program contract price.

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.

Table 24: BioMAT Mandated Allocation Summary

BioMAT Category	BioMAT MW Allocation	MW Contracted	MW Remaining	Contract Price ($/MWh)
Biogas	110	13	97	127.72
Dairy/Agriculture	90	22	68	187.72 (Dairy) 183.72 (Other Agriculture)
Sustainable Forest Management	50	11	39	199.72
Total	**250**	**41**	**204**	**-**

Data Source: CPUC RPS Database, October 2020

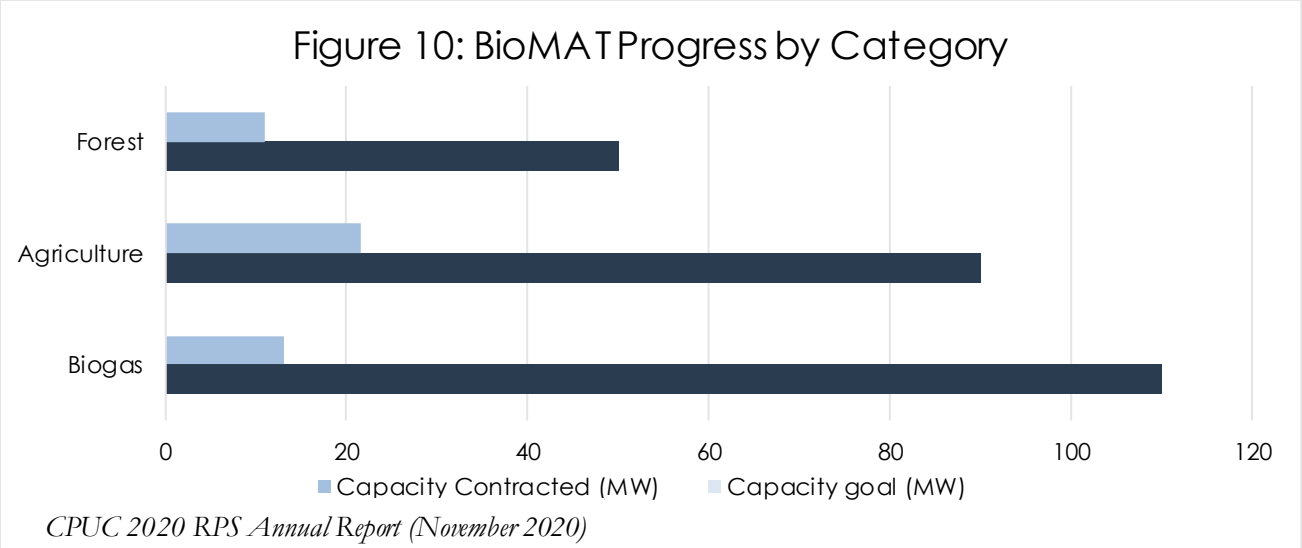
Category 1 (Biogas): Since the start of the BioMAT program, six active biogas contracts have been executed across the three IOUs for a total of 13 MW of capacity. All contracts in this category have been executed at the program starting price of $127.72/MWh.

Category 2 (Agriculture): This category consists of Dairy and Other Agriculture sub-categories. There has been a total of 16 Category 2 contract executions in PG&E's and SCE's service territories for a total of 22 MW of capacity. PG&E and SCE executed three Category 2 – Other Agriculture contracts for a total of 7 MWs of capacity. For the first time since the start of the program, Other Agriculture projects were executed at less than $187.72/MWh in 2019.

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.

[104] *See* CPUC Decision (D).14-12-081.

Figure 10 shows the progress of the BioMAT program to date compared with targets for each of the three categories.



Data Source: IOU BioMAT 10 Day Reports, 2020

BioMAT Program Review

BioMAT has recently undergone a formal program review. In November 2017, the Forest Category offer price surpassed $197/MWh for two consecutive program periods triggering the program review.[105] As a result, the CPUC issued a letter to the IOUs on November 28, 2017 announcing the start of a BioMAT program review and instituting a temporary price cap in the Forest category to prevent the offer price from increasing above $199.72/MWh unless a seller committed to using at least 60 percent High Hazard Zone (HHZ) fuel.[106]

In October 2018, after conducting a program review that assessed BioMAT program performance, 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.[107]

[105] Pursuant to the program rules adopted in the Decision implementing the BioMAT program, D.14-12-081, Energy Division is required to initiate a program review and is authorized to suspend contracting in certain categories when the soft cap price trigger is reached.

[106] Identified by CALFIRE's Drought Related Tree Mortality Map, High Hazard Zones (HHZ) are areas with elevated tree mortality and high fire threat that are a hazard to public safety, community assets and related infrastructure. Tier 1 HHZs are in close proximity to communities, roads, and utility lines and represent a direct threat to public safety. Tier 2 HHZs are defined by watersheds that have significant tree mortality, combined with community and natural resource assets.

[107] For BioMAT workshop materials, visit https://www.cpuc.ca.gov/SB_1122/.

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. A Decision[108] was issued in September 2020 directing changes to the BioMAT program rules, contract terms, as well as clarifications to the procurement process.

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 program process.[109] Subsequently, SB 859[110] directed additional BioRAM procurement. BioRAM requires the large IOUs to procure 146 MWs of bioenergy from High Hazard Zones (HHZ)[111] fuel to aid in mitigating the threat of wildfires.

IMPLEMENTATION OF SB 901 FOR BIORAM PROGRAM MODIFICATIONS

Senate Bill 901 (Dodd, 2018) further amended the BioRAM program to add program flexibility and extend certain contracts by five years. In January 2019, the CPUC issued Resolution E-4977 implementing Senate Bill 901 by ordering 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.[112] The Resolution also ordered the IOUs to seek to extend eligible BioRAM and other biomass contracts by five years.

The table below lists the IOUs' BioRAM contracts that comply with the State's emergency orders.

Table 25: IOU BioRAM Contract Summary

IOU	Facility Name	Location	Capacity (MW)
PG&E	Burney	Shasta County, CA	29
PG&E	Wheelabrator Shasta	Shasta County, CA	34
SCE	Rio Bravo Fresno	Fresno County, CA	24
SCE	Rio Bravo Rocklin	Placer County, CA	24
SCE	Pacific Ultrapower Chinese Station	Tuolumne County, CA	18
SDG&E	Honey Lake Power Company / Greenleaf	Lassen County, CA	24
Total			**153**

Data Source: CPUC RPS Database, October 2020

[108] *See* D.20-08-043, Decision Revising the Bioenergy Market Adjusting Tariff: https://docs.cpuc.ca.gov/PublishedDocs/Published/G000/M346/K112/346112503.PDF

[109] *See* https://www.ca.gov/archive/gov39/wp-content/uploads/2017/09/10.30.15_Tree_Mortality_State_of_Emergency.pdf.

[110] 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.

[111] For more information on high hazard zone areas, see CALFIRE's website: https://frap.fire.ca.gov/mapping/maps/.

[112] *See* Resolution E-4977: https://docs.cpuc.ca.gov/PublishedDocs/Published/G000/M264/K677/264677864.PDF

BIORAM HIGH HAZARD ZONE FOREST FUEL REQUIREMENTS

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 2020, the IOUs completed independent audits on each facility's 2019 HHZ fuel usage.

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

Table 26: High Hazard Zone (HHZ) Forest Fuel Usage from BioRAM Contracts

Year	BioRAM HHZ % Requirements	Average % of Total Biomass Fuel from HHZ Fuel	Total HHZ Delivered (BDT)[113]	Total HHZ Usage To-Date (BDT)
2017[114]	50%	54.6%	267,745	267,745
2018	60%	56.5%	671,847	939,592
2019	60% and 80%[115]	84%	823,515	1,763,107

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

[113] 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.
[114] 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.
[115] Individual tree mortality BioRAM facility HHZ requirements varied based on the contract.

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.

Bioenergy Issues and Forest Management

The issue of forest health and its impact on wildfire vulnerability intersects with the RPS programs of BioMAT and BioRAM. To ensure that these programs effectively address the State's policy goals, CPUC staff work with stakeholders and 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 emergency status due to high fire threat regions exacerbated by drought conditions since 2012. Specifically, the CPUC is an active participant in the Governor's Forest Management Task Force and RPS staff participate in monthly meetings of the Wood Utilization 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 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.[116] The project had previously been approved through the CAISO's 2013-2014 Transmission Planning Process. SCE proposes the ELM Project to deliver electricity by late 2021 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 proposal 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 CPUC reviewed SCE's amended application and issued a decision in August 2020 approving the project's CPCN.

SCE West of Devers Transmission Upgrade

On October 25, 2013, SCE submitted a CPCN application to the CPUC for the West of Devers Project.[117] The CPUC approved the project in D.16-08-017, including two alternatives, on August 18, 2016. The Federal Bureau of Land Management approved the project with its Record of Decision on December 27, 2016.

The Project will be located within the existing West of Devers right-of way corridor in incorporated and unincorporated areas of Riverside and San Bernardino Counties. The corridor also passes through the reservation trust land of the Morongo Band of Mission Indians. SCE anticipates that the Project will be operational by 2022 and ongoing construction is currently about 75 percent complete.

The Project is needed to facilitate the full deliverability of new electric generation resources being developed in eastern Riverside County, specifically renewable energy projects in Blythe and Desert Center. As these renewable generating facilities come online, the Project will allow the transfer of this electricity into the Los Angeles area. The Project will facilitate continued progress towards meeting California's RPS requirements.

The Project would allow SCE to comply with previously executed interconnection agreements and enable full capacity deliverability status for generators in the CAISO generation queue. However, some of the renewable power projects that request interconnection and enter the queue may not come to fruition. The Project would increase the system transfer capacity by approximately 3,200 MW, from current capacity of approximately 1,600 MW to the proposed 4,800 MW in 2022.

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[116] *See* Application (A).18-05-007.

[117] *See* Application (A.)13-10-020.

Summary of July 2019 – October 2020 Accomplishments

July 2019	▪ PG&E executed BioMAT contracts for a total capacity of 4.0 MW ▪ Energy Division held a workshop to discuss the BioMAT program review ▪ CPUC approved PG&E's REC sales agreements with 12 counterparties for 5,495 GWh of energy plus RECs
August 2019	▪ CPUC adopted D.19-08-007 enforcing RPS program rules by imposing fines on two entities for non-compliance with Compliance Period 1 (2011-2013) program requirements ▪ IOUs, CCAs, and ESPs submitted annual RPS Compliance Reports ▪ PG&E filed Advice Letter 5607-E to amend three solar PV PPAs in advance of seeking to assume the PPAs in its bankruptcy proceeding
September 2019	▪ CPUC adopted D.19-09-043 establishing a standardized methodology for calculating Effective Load Carrying Capability (ELCC) for the three large IOUs ▪ CPUC adopted D.19-09-007 accepting new CCAs' 2018 RPS Plans
October 2019	▪ SCE executed a BioMAT contract for a total capacity of 2.7 MW ▪ Energy Division issued compliance determination letters to all IOUs, CCAs, and ESPs operating in RPS Compliance Period 2 (2014-2016) ▪ PG&E filed Advice Letter 5658-E to amend one solar PV PPA and one energy storage agreement in advance of seeking to assume the contracts in its bankruptcy proceeding
November 2019	▪ CPUC issued the 2019 Annual RPS Report to the Legislature: https://www.cpuc.ca.gov/RPS_Reports_Data/
December 2019	▪ CPUC adopted D.19-12-042 approving, modifying, or rejecting the 2019 RPS Procurement Plans ▪ CPUC issued D.19-12-004 granting a PFM to modify BioMAT's definition of the "Other Agriculture" fuel resource category ▪ CPUC issued Resolution E-5049 approving PG&E amendments to solar and energy storage procurement agreements
January 2020	▪ 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
February 2020	▪ 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. ▪ CPUC issued a Ruling and Staff Proposal on confidentiality rules for the RPS program. ▪ CPUC issued a Ruling on review of Gexa Energy's Motion for Waiver Request of Compliance Period 2014-2016 requirements.

March 2020	▪ CPUC issued BioMAT Staff Proposal seeking comments on recommended program changes. ▪ CPUC issued D.20-02-044 clarifying the eligibility of directed biogas under the BioMAT program.
April 2020	▪ CPUC received comments from parties on Ruling reviewing Gexa Energy's Motion for Waiver Request of compliance requirements. ▪ CPUC received comments from parties on Ruling and Staff Proposal on confidentiality rules for the RPS program.
May 2020	▪ 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 ▪ CPUC issued the Assigned Commissioner and Assigned Administrative Law Judge's Ruling issued identifying issues and schedule of review for 2020 RPS Procurement Plans ▪ CPUC adopted D.20-05-006 approving a new standard offer contract for qualifying facilities 20 MW or less
June 2020	▪ CPUC issued Ruling for Staff Proposal on ReMAT program modifications
July 2020	▪ IOUs, CCAs, and ESPs submitted Draft 2020 RPS Procurement Plans ▪ Joint IOUs submitted Tier 2 Advice Letters on Effective Load Carrying Capability (ELCC) values for RPS procurement ▪ 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 ▪ CPUC approved PG&E Advice Letter 5844-E extending Burney BioRAM contract by 5 years
August 2020	▪ IOUs, CCAs, and ESPs submitted annual RPS Compliance Reports ▪ CPUC issued disposition letters accepting the Joint IOU ELCC values for RPS procurement
September 2020	▪ CPUC adopted D.20-08-043 implementing changes in the BioMAT program and extending the program to 2025 ▪ CPUC issued disposition letter accepting PG&E's AL 5906-E REC sales agreements ▪ CPUC adopted D.20-09-022 accepting CCAs and PacifiCorp 2019 RPS Plans and granting EnerCal's request for waiver ▪ CPUC issued staff proposal on alignment of RPS Procurement Plans and IRP filings
October 2020	▪ CPUC adopted D.20-10-005 implementing changes to ReMAT program ▪ CPUC issued disposition letter accepting PG&E's AL 5955-E, amending the BioRAM standard contract ▪ CPUC issued letters to all retail sellers that are at risk of not meeting their RPS compliance requirements, pursuant to SB 155

VI. RPS Workforce Development and Diversity

As California continues to implement its robust RPS program and develop comprehensive climate change policies, all sectors of the economy are demanding an educated and qualified "green tech" workforce. 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).[118]

This chapter provides details on workforce development related to retail sellers' current RPS workforce, training, diversity of staff, strategies used proactively to recruit and develop a diverse staff of the future, and training provided for their current and future workforce. To provide this overview, the CPUC collected information on workforce development topics 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 - 2020. The three IOUs reported 2020 data through August 2020 and thus, the values do not represent a full year.

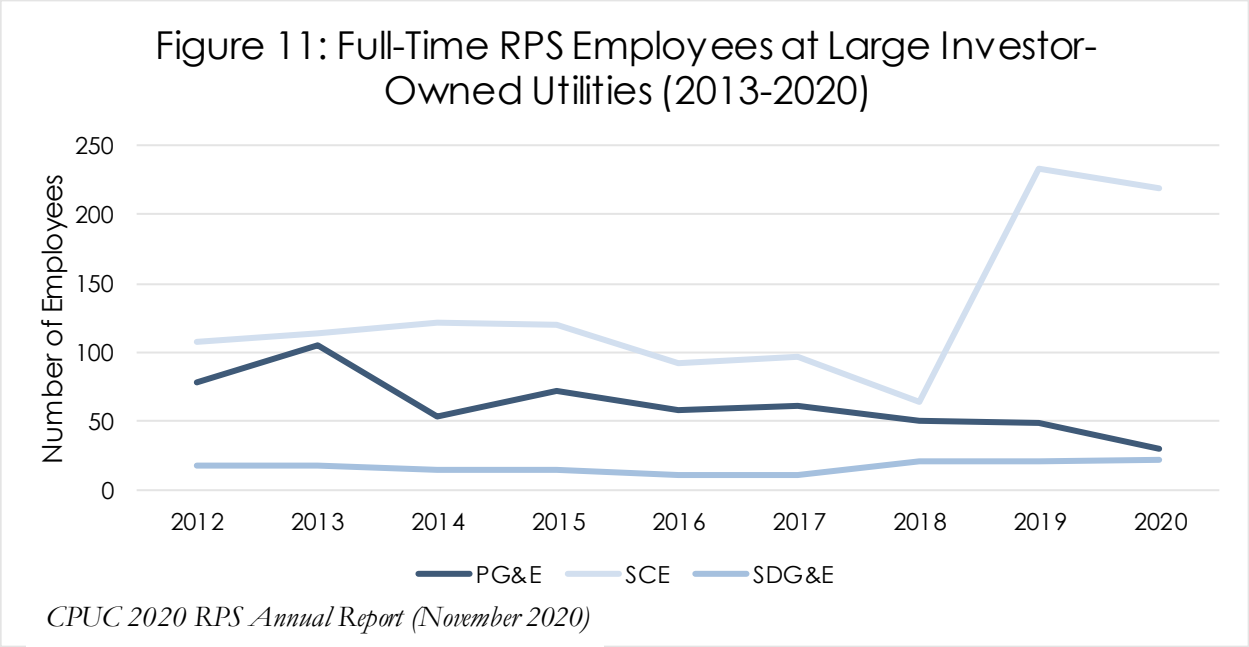
Table 27: Total RPS Employees at Large Investor-Owned Utilities

	2013	2014	2015	2016	2017	2018	2019	2020
Totals	236	190	206	161	169	135	302	271

Data Source: PG&E, SCE, SDG&E, August 2020

[118] 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.

Figure 11 illustrates how the IOUs' RPS employees have changed over the past eight years.[119]



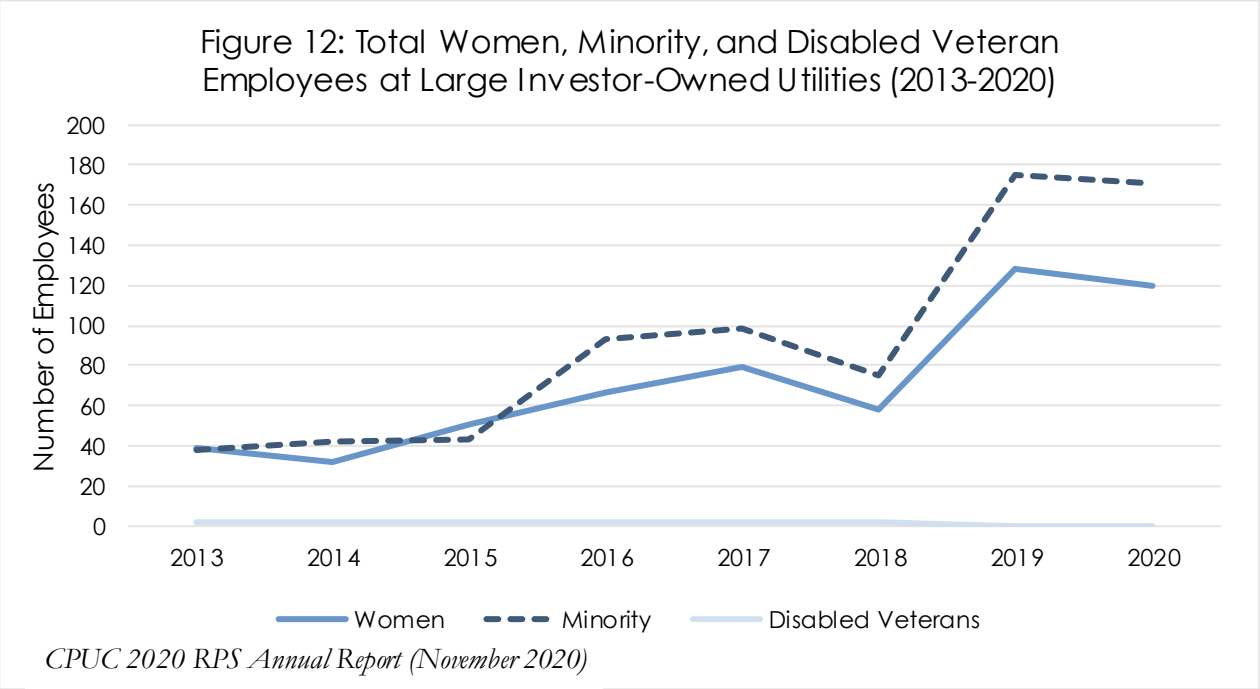
Data Source: PG&E, SCE, SDG&E, August 2020

Current IOU RPS Workforce Diversity

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 2020, all three large IOUs reported working with organizations that focus on professional development for women, minorities, and disabled veterans.[120]

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.[121]

[119] This time series data is current as of August 2020 and includes employment data from January 2013 through July 2020.
[120] 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/.
[121] 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 2020

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 2020, PG&E's RPS staff was comprised of 33 percent women and 60 percent minority staff members. In 2020, PG&E executed one RPS procurement contract under the BioMAT program, but did not execute any RPS contracts with a WMDV-LGBT business enterprise.[122]

Table 28: Pacific Gas and Electric's Women, Minority, and Veteran RPS Employees from 2013-2020

	RPS Employees (Full Time)							
	2013	**2014**	**2015**	**2016**	**2017**	**2018**	**2019**	**2020**
Women	39	20	36	13	27	19	20	10
Minority	38	35	32	28	29	22	24	18
Veterans[123]	2	2	2	2	2	n/a[124]	n/a	n/a
Total RPS Staff	105	53	72	58	61	50	48	30

[122] *See* PG&E's 2019 Supplier Diversity Report here: https://www.cpuc.ca.gov/uploadedFiles/CPUCWebsite/Content/About_Us/BusinessCommunityOutreach/GO156ProcurementPlans/2019/2019_GO-156%20Report_PGE_Online_final.pdf

[123] In past reporting years, PG&E reported two U.S. military veteran employees working on the RPS Program but neither reported having a disability.

[124] PG&E no longer tracks disabled veterans as a separate reporting category.

The CPUC has begun collecting data on the Ethnic and Racial backgrounds of RPS employees, displayed below in Table 29.

Table 29: Pacific Gas and Electric's Ethnic and Racial Background of RPS Employees from 2019-2020

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

The CPUC has similarly collected data on the workforce development levels for both Women and Ethnic Minorities, which is shown in the tables below.

Table 30: Pacific Gas and Electric's Women RPS Employees Workforce Development Level from 2019-2020

	RPS Employees (Full-Time)	
	2019	2020
Executives and Managers	3	2
Professionals	17	8
Administrative Support	1	0
Technicians	0	0

Table 31: Pacific Gas and Electric's Ethnic Minorities RPS Employees Workforce Development Level from 2019-2020

	RPS Employees (Full-Time)	
	2019	2020
Executives and Managers	5	3
Professionals	18	15
Administrative Support	1	1
Technicians	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. In 2020, approximately 77 percent of SCE's total RPS staff was comprised of women or minorities. In 2020, SCE did not execute any RPS procurement contracts and therefore did not execute any contracts with a WMDV-LGBT owned business enterprise. [125]

Table 32: Southern California Edison's Women, Minority, and Disabled Veteran RPS Employees from 2013-2020

	RPS Employees (Full Time)							
	2013	2014	2015	2016	2017	2018	2019	2020
WMDV [126]	73	81	84	69	97	48	70	72
Women		No Data		40	38	27	97	100
Minority		No Data		54	59	40	138	141
Total RPS Staff	113	122	120	92	97	64	233	219

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 2019-2020

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

[125] *See* SCE's 2019 Supplier Diversity Report here: https://www.cpuc.ca.gov/uploadedFiles/CPUCWebsite/Content/About_Us/BusinessCommunityOutreach/GO156ProcurementPlans/2019/R1410009-SCE%202019%20Supplier%20Diversity%20Annual%20Report%20and%202020%20Annual%20Plan.pdf

[126] Women, Minority, and Disabled Veteran (WMDV) employees were tracked as one data point by SCE until 2016. Disabled Veterans are not being tracked as separate data points.

The workforce development levels for SCE's Women and Ethnic Minorities RPS employees is shown below.

Table 34: Southern California Edison's Women RPS Employees Workforce Development Level from 2019-2020

	RPS Employees (Full-Time)	
	2019	2020
Executives and Managers	14	15
Professionals	79	81
Administrative Support	4	4
Technicians	0	0

Table 35: Southern California Edison's Ethnic Minorities RPS Employees Workforce Development Level from 2019-2020

	RPS Employees (Full-Time)	
	2019	2020
Executives and Managers	17	15
Professionals	118	123
Administrative Support	3	3
Technicians	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), while the WMDV information is calculated based on whether the employee is a woman, minority, or disabled veteran.

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.

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

	RPS Employees (Full-Time)							
	2013	2014	2015	2016	2017	2018	2019	2020
Women	No Data	12	15	13	14	10	11	10
Minority	No Data	7	11	11	11	12	11	10
Disabled Veterans	No Data				2[127]	n/a	0	0
Total RPS Staff	18	15	14	11	12	21	21	22

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

Table 37: San Diego Gas & Electric's Ethnic and Racial background of RPS Employees from 2019-2020

	RPS Employees (Full-Time)	
	2019	2020
American Indian or Alaskan Native	0	0
Asian	2	1
Black/African American	3	3
Hispanic/Latino	5	7
Native Hawaiian or Pacific Islander	0	0
Two or more races	1	1
White	10	10
Other	0	0

The workforce development levels for SDG&E's Women and Ethnic Minorities RPS employees is shown below.

[127] SDG&E reported disabled veterans for the 2018 California RPS Annual Report but excluded these data points in their 2019 workforce development reporting.

Table 38: San Diego Gas & Electric's Women RPS Employees Workforce Development Level from 2019-2020

	RPS Employees (Full-Time)	
	2019	2020
Executives and Managers	3	3
Professionals	8	7
Administrative Support	0	0
Technicians	0	0

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

	RPS Employees (Full-Time)	
	2019	2020
Executives and Managers	3	4
Professionals	8	8
Administrative Support	0	0
Technicians	0	0

SDG&E uses a qualitative component when evaluating contracts to determine which projects are the best fits for its portfolio. This qualitative component includes the Diverse Business Enterprise (DBE) status of a project and SDG&E has reported strongly encouraging DBEs, including women-owned, minority-owned, disabled veteran-owned, or LGBT-owned business enterprises to participate in its renewable power related Request for Offer solicitations. In 2020, SDG&E did not execute any new RPS procurement contracts and therefore did not execute any contracts with a WMDV-LGBT owned business enterprise.[128]

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.

[128] *See* SDG&E's 2019 Supplier Diversity Report here: https://www.cpuc.ca.gov/uploadedFiles/CPUCWebsite/Content/About_Us/BusinessCommunityOutreach/GO156ProcurementPlans/2019/SDGE%20Supplier%20Diversity%202019%20Annual%20Report%20and%202020%20Annual%20Plan.pdf

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 specific university programs to encourage a diverse candidate pool. In addition, PG&E has a Women in Trades initiative to support diverse candidate pools for trade-specific positions. 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. PG&E partners with local programs such as Rubicon (Bay Area – East Bay) and The Fresno Metro Black Chamber of Commerce that help members of their communities offering open door office services for resume writing and career advisors. PG&E participated in the Oakland & Alameda Diversity Employment Day Career Fair & Roundtables and will participate in multiple additional diversity career fairs throughout their territory in a virtual manner going forward. 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.[129]

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 Rising Sun Energy.

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[129] *See* PG&E's Diversity and Inclusion website:
http://www.pgecorp.com/corp_responsibility/reports/2017/em03_diversity_inclusion.html

SCE

General Outreach:

As a part of its targeted recruitment efforts for clean-energy professionals, SCE recruits through online job sites such as LinkedIn, CareerBuilder, Indeed, Direct Employers, and Glassdoor. With regards to college recruitment, SCE has reported robust recruitment efforts and outreach strategies targeted at students pursuing undergraduate degrees in engineering, accounting, finance, information technology, and cyber security. SCE also launched the SCE Talent Network in order to stay connected with prospective candidates, which has been updated with Talent Refer for employees to recommend potential candidates.

Additionally, SCE has made four public pledges and commitments including Paradigm for Parity, Together We Stand, CEO Action for Diversity & Inclusion and the White House Equal Pay Pledge.

Diverse Employee Recruitment:

SCE employees are members of several professional associations including the Society of Women Engineers, Society of Hispanic Professional Engineers, National Society of Black Engineers, American Association of Blacks in Energy, Asian American Professional Association, and Iranian American Women's Foundation. These associations allow SCE employees to engage in professional networking which helps support their career development goals. SCE job openings are also promoted within these organizations as well as through the 'Direct Employers' job aggregator which posts SCE roles to over 300 websites including local and national diverse partnerships.

SCE promotes job opportunities to military veterans through several partner organizations such as U.S. Vets. SCE attends several annual veteran job recruitment events, which include transitioning military job fairs. In addition, SCE's recruitment efforts include connecting with and supporting job seekers with disabilities. SCE 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. SCE implemented a military translator tool that uses military codes to better align with Edison jobs housed on the new Military page on the Edison Careers Website. This allows military/veterans to more easily translate their acquired skills to open positions with Edison.

University Outreach:

SCE actively recruits and employs interns from nine California State Universities, six University of California schools, and five private colleges and universities. SCE has also created a rotational development program for MBA students and partners with Cal Poly Pomona's Open University to help prepare interested students for energy careers. Several of the instructors for the Energy Planner Certification program at Cal Poly Pomona's Open University are SCE employees. While SCE's partner schools are mostly California-based, SCE attracts undergraduate and graduate students nationwide and also work with organizations such as TELACU (The East Los Angeles Community Union), Great Minds in STEM, and MESA (Mathematics Engineering Science Achievement) in order to attract a diverse group of early career talent.

In 2018 and 2019, SCE employed 55 interns from California Polytechnic University Pomona, where 13 of those interns have become full-time employees. In addition, SCE's summer internship program typically has approximately 150 interns.

K-12 Outreach and Education:
SCE's Speakers Bureau is comprised of employees who volunteer to educate and inform customers on a variety of topics related to electricity. SCE offers multilingual speakers who are available to present to service clubs, schools, businesses, faith-based organizations, and senior and consumer groups. The Speakers Bureau conducts a Kids Safety presentation on electrical safety presented to students from K-12. From July 2019 through June 2020, approximately 1,000 to 1,500 students participated in these presentations and an additional 2,000 students participated in general safety messaging.

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, National Society of Hispanic MBAs and Business Professionals (PROSPANICA). SDG&E recruitment staff also focus on military outreach and work with organizations such as Military MOJO and Hire GI, and support programs like Onward to Opportunity.

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

University Outreach:
In 2020, SDG&E supported a paid internship program with UC San Diego and Southwestern College designed to prepare students for clean-energy careers with career pathways, such as solar design and energy storage.

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.

K-12 Outreach and Education:
SDG&E offers a workforce education and training program for K-12 students interested in green energy, science, technology, engineering, and mathematics (STEM) careers. From August 2019 through July 2020, approximately 12,000 K-12 students completed the program.

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

	2017	2018	2019	2020
BVES	11	13	3	3
Liberty	9	11	13	12
PacifiCorp	-	-	-	-
Totals	20	24	16	15

Data source: BVES and Liberty August 2020

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 2017-2020 Employed at SMJUs

	2017	2018	2019	2020
Women	6	6	4	3
Minority	4	6	4	2
Disabled Veterans	0	0	0	0

Data source: BVES and Liberty August 2020

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 2019-2020

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

The workforce development levels for BVES' Women and Ethnic Minorities RPS employees are given below.

Table 43: Bear Valley Electric Service's Women RPS Employees Workforce Development Level from 2019-2020

	RPS Employees (Full-Time)	
	2019	2020
Executives and Managers	0	0
Professionals	1	1
Administrative Support	0	0
Technicians	0	0

Table 44: Bear Valley Electric Service's Ethnic Minorities RPS Employees Workforce Development Level from 2019-2020

	RPS Employees (Full-Time)	
	2019	2020
Executives and Managers	1	2
Professionals	0	0
Administrative Support	0	0
Technicians	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
American Indian or Alaskan Native	0	0
Asian	2	1
Black/African American	2	2
Hispanic/Latino	0	0
Native Hawaiian or Pacific Islander	0	0
Two or more races	0	0
White	9	9
Other	0	0

The workforce development levels for Liberty Utilities' Women and Ethnic Minorities RPS employees are given below in tables 46 and 47.

Table 46: Liberty Utilities' Women RPS Employees Workforce Development Level from 2019-2020

	RPS Employees (Full-Time)	
	2019	2020
Executives and Managers	1	1
Professionals	2	2
Administrative Support	0	0
Technicians	0	0

Table 47: Liberty Utilities' Ethnic Minorities RPS Employees Workforce Development Level from 2019-2020

	RPS Employees (Full-Time)	
	2019	2020
Executives and Managers	2	2
Professionals	1	1
Administrative Support	0	0
Technicians	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.

PacifiCorp executed eight RPS procurement contracts for the purposes of meeting its California RPS program requirements, but does not track supplier diversity data specifically related to California's RPS program.[130]

[130] *See* PacifiCorp's 2019 Supplier Diversity Report here: https://www.cpuc.ca.gov/uploadedFiles/CPUCWebsite/Content/About_Us/BusinessCommunityOutreach/GO156ProcurementPlans/2019/CA%20PacifiCorp's%20Annual%20Report%20on%20Utilization%20of%20WMDVLGBTBE%20and%20Annual%20Plan%20(3-2-20).pdf

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.[131]

Table 48: Total Number of CCA RPS Employees (2018 – 2020)

	2018	2019	2020
Apple Valley Choice Energy	1	2	2
Clean Energy Alliance	No Data	0	0
Clean Power Alliance	2	5	6
CleanPowerSF	3	5	11
East Bay Community Energy	1	3	2
King City Community Power	1	3	3
Lancaster Choice Energy	1	1	1
Marin Clean Energy	56	73	72
Central Coast Community Energy	1	4	5
Peninsula Clean Energy	6	4	4
Pico Rivera Innovative Municipal Energy	2	0	0
Pioneer Community Energy	No Data	No Data	No Data
Rancho Mirage Energy Authority	1	1	1
Redwood Coast Energy Authority	6	7	8
San Jacinto Power	1	0	0
San Jose Clean Energy	2	8	12
Silicon Valley Clean Energy	4	2	2
Solana Energy Alliance	1	0	0
Sonoma Clean Power	6	6	9
Valley Clean Energy Alliance	0	0	2
Western Community Energy	0	2	4
Total RPS Staff	**95**	**126**	**144**

Data Source: CCAs, August 2020

[131] 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.

In 2019, 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.

Table 49: Total Number of Women, Minority, and Disabled Veterans RPS Employees from 2018 – 2020 (Community Choice Aggregators)

	2018	2019	2020
Women	49	63	79
Minority	24	29	40
Disabled Veterans	No Data	No Data	No Data

Apple Valley Choice Energy (AVCE):

AVCE is a member of California Choice Energy Authority (CalChoice), a joint powers authority (JPA) that provides operational and procurement services for CCA programs. Amongst the services provided by CalChoice under this contract, members receive support in preparing and submitting requisite compliance materials related to the California RPS Program. As such, there are no further "recruitment and outreach strategies" that AVCE expects to pursue in implementing or fulfilling the requirements of California's RPS Program. AVCE supports an inclusive workplace by making benefits available to employees, their spouses, domestic partners and dependents without discrimination.

Clean Energy Alliance (CEA):

CEA is a new CCA that is due to launch in May 2021. As such, CEA is currently developing its policies that will address diversity and inclusion in the mission, efforts and practices of the organization. CEA has not yet begun hiring its full-time staff, but has contracted an Interim Chief Executive Officer, who is a woman, General Counsel and technical consultants all of whom have experience and expertise in working with CCAs in administering California's RPS program. To date, CEA has not yet procured any RPS resources.

Clean Power Alliance (CPA):

CPA is made up of geographically and socioeconomically diverse members and continues to build a staff reflecting that diversity in its hiring practices. CPA is an equal opportunity employer and actively seeks a diverse pool of candidates for all positions. CPA's recruitment and outreach for potential employees is based on each candidate's qualifications and work experience for particular roles, not on any specific demographic targets or strategies. CPA's RPS staff are encouraged to educate themselves on the California RPS program through self-study and attend any events hosted by the CEC and CPUC on RPS related annual reporting.

Since beginning operations, CPA has entered into five long-term contracts for new eligible renewable energy projects in California that will contribute approximately 1,379 new construction jobs over the next several years. CPA itself currently has limited operations with 30 employees and at this point does not track employment statistics.

CleanPowerSF (CPSF):

While CPSF's recruitment and outreach strategies may vary based on the particular job and job classification, recruitment can include outreach via CPSF LinkedIn Company Profile Page, Featured Opportunities JobAps, PUC Social Media, and outreach through other entities and California colleges and universities. CPSF's staff training on RPS issues includes sending analysts to energy and procurement conferences, ensuring staff review legal and regulatory requirement, and reviewing CPSF's policies on renewable energy development and procurement.

CPSF has entered into long-term contracts for four new renewable resources that will support new union construction jobs which include the San Pablo Raceway solar project, Voyager Wind IV wind project, Blythe IV solar project, and the Maverick 6 solar plus storage project. CPSF believes that these projects create 15 full-time operations-related positions and approximately 880 construction jobs.

East Bay Community Energy (EBCE):

EBCE is an equal opportunity employer and strives to ensure its recruiting activities reach a broad audience. EBCE reports that its outreach strategies include placement of employment opportunities on EBCE's "Job Opportunities" web page; advertisements during EBCE outreach events and trade conferences; placement on job search websites that reach local, state, and national audiences, such as Indeed.com, LinkedIn, and Idealist.org; outreach through industry associations such as CalCCA; and outreach via platforms that reach women, people of color, and veterans, including the Women's Environmental Network, Women in Solar Energy, American Association of Blacks in Energy, Asians in Energy, Hispanics in Energy, Swords to Plowshares, local community-based organizations, and chambers of commerce.

EBCE employees are encouraged to reference the resources available on the CPUC's website, monitor RPS-related regulatory matters, and attend industry conferences. Additionally, EBCE contributes to employment growth through its recently signed long-term power purchase agreements with six new in-state renewable energy projects that are currently under development.

King City Community Power (KCCP):

KCCP has partnered with Pilot Power Group (PPG), Inc., an existing ESP that has been serving Commercial and Industrial customers since 2001. PPG assists KCCP with Portfolio Management, schedule coordinating services, account management and customer resource services. KCCP did not provide any specific information about its workforce development or diversity policies.

Lancaster Choice Energy (LCE):

LCE is also a member of CalChoice, which provides operational and procurement services for CCA programs. As such, there are no further recruitment and outreach strategies that LCE expects to pursue in implementing or fulfilling the requirements of California's RPS Program.

Marin Clean Energy (MCE):

MCE prioritizes and supports a diverse and well-trained workforce. MCE conducts its recruitment with the dual goals of targeting local communities and also working to capture talent statewide and across the country. This approach helps MCE identify a broad range of candidates for each open staff position, to help

further their mission. In addition to posting job opportunities on MCE's website and professional employment sites such as LinkedIn and Indeed, MCE distributes its job postings to a wide range of community partners and relevant networks.

MCE currently employs a full-time staff of 67 employees across 9 teams: Power Resources, Public Affairs, Customer Programs, Legal and Policy, Technology and Analytics, Finance, Human Resources, Diversity, Equity and Inclusion, Administrative Services, and Strategic Initiatives. While MCE's Power Resources and Legal and Policy teams focus more directly on legal and regulatory compliance with the RPS program, all MCE staff receives high-level training on power resources procurement and RPS-related issues as part of MCE's employee on-boarding process. MCE offers its employees an annual professional development budget to attend conferences and trainings to keep skillsets and knowledge current. Each of MCE's teams contribute to MCE's over-arching mission to reduce energy-related greenhouse gas emissions through regulatory engagement, legal review, power procurement, community outreach, development of customer programs to reduce energy consumption, and administrative services' development of metrics and processes to track MCE's workforce and supplier diversity efforts.

MCE's new California renewable energy projects support direct construction labor jobs in California. MCE's activities also support indirect construction-related California jobs, including, but not limited to jobs related to scheduling coordination, power settlements, data management, accounting, planning and portfolio tracking, legal and compliance work, call center staffing, and various other administrative activities. MCE estimates that its renewable projects have supported more than 5,000 California jobs, 60% of which are union labor hours.[132]

Central Coast Community Energy (CCCE):

CCCE is an equal opportunity employer that strives for diversity in its recruitment and selection practices. Outreach strategy is general and targeted to the local markets which include underserved communities and local educational institutions. CCCE, in partnership with SVCE, currently has under contract seven utility RPS projects, six of which are in the California counties of Inyo, Kern, Kings and Mono. Of the six, five are in development, the construction of which will contribute to job creation in California. The sixth California-based project is an existing project while the seventh project is in Nevada. These projects resulted from an RFOs issued in 2017-2019. Additionally, CCCE and SVCE issued another joint RFO in 2020 seeking more California-based renewable projects.

CCCE supports diversity and inclusion in the workplace for all its employees across all departments. Direct actions include reviewing compensation, benefits, workplace accommodations and training regularly to ensure practices are aligned with a diverse and inclusive workplace.

[132] MCE uses the National Renewable Energy Laboratory's Jobs and Economic Development Impacts Model to provide consistent and reasonably accurate estimates of direct and indirect jobs involved in MCE's power contracting efforts and general operations.

Peninsula Clean Energy (PCE):

PCE reports engagement in a variety of activities to ensure open employment positions reach as broad an audience as possible, in alignment with PCE's Inclusive and Sustainable Workforce Policy. PCE advertises open employment opportunities on a diversity of platforms, including PCE's website, the San Mateo County employment website, and general job search websites that reach local, state and national audiences. PCE also conducts outreach to CCA-related organizations who maintain email newsletters or websites containing employment opportunities, energy-related organizations that maintain email newsletters or websites containing employment opportunities, and university employment sites.

PCE has two new renewable energy facilities under contract to fulfill RPS requirements and PCE's overall energy supply needs. The first facility, the Mustang Solar Power Project, is a 100 MW solar facility located in Kings County. Mustang is subject to a project labor agreement with Operating Engineers Local 3, Northern California Carpenters Regional Council, Laborers Local 294, IBEW Local 100, and Ironworkers Local 155. PCE anticipates the project will support 350 jobs during peak construction. The second project, Wright Solar Park, is a 200 MW facility located in Merced County. Wright is subject to a project labor agreement with IBEW Local 100 and 684, 2 Ironworkers Local 155, Engineers Local 3. PCE anticipates the project has supported, and continues to support, 350 jobs in 2018-2019.

One of PCE's strategic goals is to "foster a work environment that espouses sustainable business practices and cultivates a culture of innovation, diversity, transparency, integrity, and commitment to the organization's mission and the communities it serves." PCE recognizes that an inclusive and sustainable workforce helps PCE meet its core mission and goals more effectively, serve its customers in a more culturally sensitive manner, and reflect the businesses we partner with and the community we serve more comprehensively. PCE strives to have a workforce that is as inclusive as the community it serves.

Pico Rivera Innovative Municipal Energy (PRIME):

PRIME is a member of CalChoice, a JPA that provides operational and procurement services for CCA programs. As such, there are no further "recruitment and outreach strategies" that PRIME expects to pursue in implementing or fulfilling the requirements of California's RPS Program.

PRIME is governed by the Pico Rivera City Council and the operation of the program is administered by City of Pico Rivera staff; as such, PRIME has adopted the same practices of the City as an Equal Opportunity Employer. PRIME is exploring more expansive initiatives including an equity framework and workforce development programs. PRIME also released a commitment to racial justice statement outlining the internal actions the program will take in support of racial equity as it relates to CCA programs.

Pioneer Community Energy:

Pioneer did not provide a data request response pursuant to Pub. Util. Code Section 913.4 for the 2020 RPS Annual Report.

Rancho Mirage Energy Authority (RMEA):

RMEA is a member of CalChoice, a JPA that provides operational and procurement services for CCA programs. As such, there are no further "recruitment and outreach strategies" that RMEA expects to pursue in implementing or fulfilling the requirements of California's RPS Program.

RMEA is governed by the Rancho Mirage City Council and the operation of the program is administered by City of Rancho Mirage staff; as such, RMEA has adopted the same practices of the City. The City prides itself on its inclusive workforce, which has many LGBTQ employees who work at all levels within the organization. The workforce and employment policies provide for a productive and inclusive work environment.

Redwood Coast Energy Authority (RCEA):

Due to low staff turnover, RCEA posted one job announcement during the reporting period. This position announcement was forwarded to various community and professional organizations, including Humboldt State University, Handshake, Craigslist, Young Professionals in Energy, Indeed, and LinkedIn.

RCEA reports that staff is not provided with formal training focused specifically on California's RPS program. During the reporting period, RCEA created and filled one new position to assist with RPS activities. This new staff member received informal training on her job duties, which included RPS procurement documentation and RPS compliance reporting.

RCEA presently has a total of four renewables contract with two biomass, one small hydro, and one solar facility. All of these facilities are located in California. Two of the facilities, one biomass and one small hydro, are currently operational. One of the biomass plants ceased operations in February 2019 and the solar facility is currently under development, expected to be online in late 2022. The plants that were operational in 2019 and 2020, including the one biomass plant that is not currently operational, are estimated to have preserved a total of about 48 jobs at their facilities. When excluding the offline biomass plant, the job total is about 20. The solar plant that is not yet built will result in about 650 construction-phase jobs and 11 permanent jobs in Kern County.

Additionally, RCEA has contracted for four small solar facilities through a FIT program and is developing a solar plus battery storage microgrid, all within RCEA's service territory. These projects will result in a number of temporary and permanent jobs that have yet to be determined. Most of these projects will utilize local labor, bringing employment benefits to Humboldt County.

RCEA promotes diversity and inclusion in its hiring practices and promotes a policy of non-discrimination and non-harassment in its day-to-day operations. During the reporting period, RCEA's Board of Directors passed a resolution that adopted a commitment to racial justice. This resolution mandates development of a racial justice action plan over the coming year, which requires increased efforts to ensure diversity and inclusion in hiring and promotion practices, in addition to explicitly addressing inclusion in the design and implementation of RCEA's customer programs and community projects.

San Jacinto Power (SJP):

SJP is a member of CalChoice, a JPA that provides operational and procurement services for CCA programs. As such, there are no further "recruitment and outreach strategies" that SJP expects to pursue in implementing or fulfilling the requirements of California's RPS Program.

SJP is governed by the San Jacinto City Council and the operation of the program is administered by City of San Jacinto staff; as such, SJP has adopted the same practices of the City. The City continues to make available benefits to employees, their spouses, domestic partners and dependents without discrimination. Training programs for staff and management have also been implemented, with some topics focused on diversity and inclusion, which promote awareness and encourage acceptance, describe strategies to create a positive and accepting work environment, and highlight the steps to take if discrimination does occur.

San José Clean Energy (SJCE):

SJCE reports recruitment and outreach strategies for general procurement staff hiring through various media and outreach avenues, including the City of San José website, LinkedIn, Twitter, Facebook, Instagram, SanJoséCleanEnergy.com, Cal-CCA.org.

SJCE's staff training on RPS-related issues includes sending staff to energy and procurement conferences and matching new staff with a manager or senior staff member with RPS experience for mentoring and training purposes. The 11 full-time employees that work on RPS-related issues have attended training courses provided by the CAISO, Northern California Power Agency, American Public Power Association and various industry conferences.

SJCE received City Council authority on June 4, 2019 to enter into over $1 billion in long-term contracts for new renewable projects that will lead the creation of new union construction jobs in California. This authority is expected to be expanded in late 2020 to allow for additional procurement toward San José's aggressive climate change goals. To date, SJCE has negotiated three long-term PPAs for new renewable projects that will lead to the creation of new union construction jobs in California. While wrapping up a fourth PPA, SJCE is already looking ahead to further procurement by partnering with PCE to issue a new solicitation for new renewables and battery storage. The bulk of responses are expected to be in-state and would typically expect the developer to use union labor agreements. SJCE is partnering with 12 other CCAs to issue a solicitation for long duration energy storage. Offers are likely to be located in California and use union labor, and the project size is expected to be large given the cumulative loads of the partner CCAs.

The City of San José began its explicit focus on advancing racial equity in 2018. This initial focus is two pronged: First, it focuses on cultivating an organizational culture that understands, appreciates, and discusses racial equity as part of daily work (also referred to as normalizing race equity). Second, it seeks to build the capacity of City staff to enable them to conduct equity-related analyses. The long-term administrative vision is to operate an organization that embeds the spirit of realizing racial equity in the City of San José into everyday work, with equity considerations being part of organizational decision-making and external decision-making.

Silicon Valley Clean Energy (SVCE):

SVCE states that they do not conduct recruiting specifically for the purposes of implementing the RPS program and RPS-related activities are carried out by SVCE's general procurement staff. SVCE has contracted with a firm that meets the WMDV-LGBT business enterprise criteria. SVCE states that it works with Pivotal, a community foundation in San Jose, to hire summer high school interns from disadvantaged backgrounds. SVCE is also evaluating its recruiting sites and sources to better promote job opportunities in diverse communities and reviewing its procurement materials to increase outreach and promote greater diversity throughout its supply chain.

Solana Energy Alliance (SEA):

SEA contracts with The Energy Authority (TEA) to provide operational and procurement services for their CCA program, including providing support in preparing and submitting requisite compliance materials related to the RPS program. SEA asserts that it will exceed RPS requirements which likely supports increased demand for employment opportunities within California's renewable energy sector.

Sonoma Clean Power (SCP):

SCP states that they conduct outreach to women and minority applicants through community organizations, colleges, and government agencies. SCP prioritizes hiring of bilingual and bicultural employees and evaluates candidates for hire based on their experience and skills. SCP's two most senior staff members working on the RPS program are women.

SCPA has contracted with a Diversity Equity and Inclusion trainer to conduct a series of workshops for staff to learn about racism, privilege and bias, and for identifying specific ways SCPA can evolve in its practices to actively promote diversity, equity, inclusion in the energy sector.

SCP also has numerous programs for engaging with students toward working in renewable energy systems and renewable integration, including Sonoma State University interns working on renewable integration, an elementary school renewable energy training program for 10,496 students, vocational training programs, and constructing an Advanced Energy Center that will offer live and webinar classes on renewable systems, storage and controls in partnership with the CEC.

Valley Clean Energy Alliance (VCEA):

VCEA states that they are an equal opportunity employer that strives for diversity in its hiring practices. Outreach and recruitment for potential employees is based on each candidate's qualifications and work experience for particular roles, not based on specific demographic targets or strategies. VCEA's outreach and recruitment strategies include listing employment opportunities on VCEA's website and job search websites, advertising during outreach events, trade conferences, and industry associations such as Cal CCA, the Association of Women in Water, Energy, and the Environment, and other CCA-related organizations that maintain email newsletters or websites containing employment opportunities.

VCEA currently has four full time employees and staff members whose workload includes RPS-related activities who are provided with opportunities to attend energy and procurement conferences, participate in training courses offered by the CAISO, Northern California Power Agency, American Public Power

Association, match with a manager or senior member with RPS experience for mentoring, access resources available on the CPUC's website, and monitor RPS-related regulatory matters to ensure that staff members review legal and regulatory requirements.

VCEA's Board of Directors appointed a working group on Environmental and Social Justice in June 2020. This working group is currently focused on developing a Statement on Environmental and Social Justice and seeking feedback on it from key VCE stakeholders. The Statement's main objective is to lay out a plan of action to better integrate the tenets of Diversity, Equity and Inclusion (DEI) into VCE's policies and operations. VCE will be planning a more thorough integration of DEI into their hiring, contracting and advancement policies, as well as examining outreach to non-English speaking populations.

Western Community Energy (WCE):

WCE has partnered with Pilot Power Group, LLC (PPG), an existing ESP that has been serving commercial and industrial customers since 2001. WCE also has partnered with Calpine Energy Solutions (CES) for their data management.

WCE launched in 2020 and encourages the growth of a diverse and inclusive workplace striving to include, promote and develop the ideas, voices, and intellectual contributions from various cultures, races, genders, and minorities on all business matters. In 2020, WCE welcomed to its team a new female minority staff member to lead key initiatives within WCE and provide RPS compliance support.

ESP Workforce Development

The CPUC requested data from all ESPs that were operational in 2019. 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.[133]

Table 50: Total Number of ESP RPS Employees (2019 – 2020)

	2019	2020
3 Phases Renewables	8	9
American PowerNet	1	1
Calpine Energy Solutions	No Data	No Data
Constellation NewEnergy, Inc	No Data	No Data
Calpine Power America-CA, LLC	No Data	No Data
Direct Energy Business	No Data	No Data
EDF Industrial Power Solutions	No Data	No Data
Just Energy Solutions, Inc.	5	6
Pilot Power Group, LLC	0	0
Shell Energy North America, L.P.	No Data	No Data
Tiger Natural Gas, Inc.	0	0
UC Regents	2	2
Total RPS Staff	15	17

Data Source: 3PR, APNM, JES, PPG, Tiger, UC Regents (August 2020)

3 Phases Renewables (3PR):

3PR did not provide a narrative response pursuant to Pub. Util. Code Section 913.4 for the 2020 RPS Annual Report, however, 3PR provided employment data where nine employees worked on RPS-related issues in 2020.

[133] The ESPs have varying interpretations of the data request categories and, therefore, reported RPS employees may not be directly comparable.

American PowerNet Management (APNM):

APNM is a small business and employs nine full-time employees. When APNM has the need to recruit a new employee they seek candidates that are supportive of renewable energy. APNM's employees also engage in outreach activities such as panel discussions whenever the opportunity presents itself.

APNM does not have specific metrics and goals to measure organizational diversity and inclusion in its workplace but does not discriminate in any way nor does APNM deny opportunity to any person.

Calpine Energy Solutions, LLC (CES):

CES states that they have a long history of supporting diversity in their hiring practices. CES posts jobs to many diverse websites, including large job aggregator boards, and partners with and posts jobs at universities that traditionally have a diverse student population. Over 50 percent of the time, CES hiring managers interview a diverse slate of qualified job candidates.

Through CES' Diversity and Inclusion Council, its Employee Resource Groups hold multiple events throughout the year, including Pathway to Diversity listening sessions that were held in 2020 in response to social and racial injustices. Feedback from these sessions will be used to help CES identify opportunities, both internal and external to the organization, for fostering fair, just, and responsible practices.

All CES employees are required to complete unconscious bias, workplace harassment, and Code of Conduct training. CES provides learning opportunities through other engaging programs like lunch and learns, video updates, and team chats in order to raise awareness among its workforce. Each of its business work sites has multiple volunteer programs in their local communities to give back and further Calpine's belief in providing better outcomes for our communities and our future.

Constellation NewEnergy, Inc. (CNE):

CNE does not have employees solely dedicated to California's RPS Program, but states that CNE staff responsible for compliance reporting associated with RPS activities undergo annual training provided to ensure that they are fully informed about the compliance requirements.

In 2019, CNE employees had the opportunity to participate in the Constellation Mentoring Program, a 12-month program for high potential mid-level employees and leaders which pairs them with a more senior leader in support of accelerated development efforts. The annual Constellation Leadership Now conference focused on the development of mid-level and above leaders in support of engagement, inclusion, and strategic objectives.

Calpine Power America-CA, LLC (CPOA):

CPOA has the same parent company as CES and provided similar responses regarding their hiring practices, employee resources groups, and required trainings. CPOA did not provide employment data pursuant to Pub. Util. Code Section 913.4.

Direct Energy Business (DEB):

DEB did not provide public employment data pursuant to Pub. Util. Code Section 913.4.

EDF Industrial Power Solutions (EDF):

EDF states that equal opportunity is afforded to all individuals regardless of race, color, religion, age, sex, sexual orientation, gender identify, national origin, veteran status, disability or and other status protected under applicable law. EDF has no RPS employees in California and relies on contracted legal and technical experts.

Just Energy Solutions Inc. (JES):

JES encourages internal and external recruitment efforts that are inclusive of diversity efforts. In the past year, JES has trained two employees on the RPS program and processes.

Pilot Power Group, LLC (PPG):

PPG has several employees that undergo training and workshops on a regular basis to keep informed on the RPS Program but relies on an outside law firm to provide information on RPS regulatory requirements. PPG promotes inclusion and allows all voices and inputs to be heard and considered for all business matters.

Shell Energy North America, L.P. (Shell):

Shell did not provide a narrative response pursuant to Pub. Util. Code Section 913.4 for the 2020 RPS Annual Report but states its commitment to hiring and training a diverse workforce for all its operations, financial, management and strategic functions.

Tiger Natural Gas, Inc. (Tiger):

Tiger is a 100% minority and women owned business, certified with a variety of diversity councils and regional associations. The bulk of Tiger's employees are women and a significant percentage are minorities. Tiger does not have any staff dedicated to RPS related issues.

UC Regents:

UC Regents staff belong to the University of California Office of the President's Energy & Sustainability Department and interact with both professors and students in a range of formal and informal settings. These interactions are primarily related to strategy and procurement in support of UC's Carbon Neutrality Initiative, which has a considerable amount of overlap with the goals of California's RPS Program. The Carbon Neutrality Initiative includes a Student Fellowship Program that funds student-generated projects that support the UC system's goal to product zero-net greenhouse gas emissions by 2025. In addition, UC's Bending the Curve report on scalable solutions for carbon neutrality and climate stability has recently been developed into a massive open online course and climate change education included in UC's academic curriculum.

UC Regents employs several people who work primarily or partially on ESP operations. These positions may not have been created if UC had not become an LSE subject to California's RPS program. All supervising managers are required to complete a series of training sessions on Managing Implicit Bias. UC

Office of the President has contracted with an outside firm to conduct a series of virtual staff trainings on diversity, equity, and inclusion, including topics such as team dynamics, remote work, engaging stakeholders, and understanding/disrupting bias at work.

VII. RPS Challenges and Policy Recommendations

Public Utilities Code § 913.4 requires the CPUC to identify barriers to achieving the RPS targets 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: System Reliability Procurement with Increasing Renewables
- Challenge 2: Impact of Increasing Procurement Fragmentation on State Renewable Energy Goals
- Challenge 3: Meeting the Long-Term Contracting and RPS Requirements
- Challenge 4: Addressing End-of-Life Management of Decommissioned Facilities
- Challenge 5: Renewable Interconnection Costs and Locational Issues

Challenge 1: System Reliability Procurement with Increasing Renewables

ISSUE:

The CPUC is charged with overseeing planning and compliance of the RPS program to ensure that the State meets renewable energy and climate goals while maintaining a safe, reliable electric system. As the State heads toward its 60 percent RPS and 100 percent carbon-free energy goals, in parallel with increasing responsibility for procurement in California shifting to CCAs and ESPs, it is essential that the CPUC oversee the reliability aspect of procurement. Through its annual procurement planning process for the RPS, IRP, and Resource Adequacy programs, the CPUC evaluates the contribution to system reliability from renewable energy facilities.

The metric to evaluate reliability used by the CPUC is Effective Load Carrying Capability (ELCC), which is defined in the RPS proceeding as the marginal amount of expected capacity contribution to system reliability of an additional renewable resource. In D.19-09-043, the CPUC set out a standardized ELCC methodology to be used for evaluating new RPS procurement by the IOUs in their Least-Cost Best-Fit evaluation process. The CCAs and ESPs are not required to use this same standardized ELCC methodology in their RPS solicitations because the CPUC does not have oversight of their solicitations. This creates differences in how capacity is valued by different retail seller types in the RPS solicitation and procurement process. The CCAs and ESPs, however, must consider the best-fit attributes of resource types to ensure a balanced resource mix to maintain the reliability of the electrical grid.[134]

[134] Pub. Util. Code Section 399.13(a)(9).

RECOMMENDATION:

With very high ELCC capacity values estimated for hybrid solar plus storage resources[135] and an increased amount of storage set to come online in 2021 and beyond, all retail sellers should be actively evaluating paired resources as viable procurement options that contribute to RPS requirements, system reliability, and grid resiliency. CCAs and ESPs should incorporate the standardized set of ELCC values, used by IOUs, in their solicitation evaluation process to ensure consistency in system-wide planning and procurement. CCAs and ESPs should also move away from the fragmented procurement approach of procuring for their RPS and RA requirements separately to ensure development of reliable portfolios that efficiently meet all CPUC requirements, including a safe, reliable system.

Additionally, in D.19-12-042, the CPUC approved the IOUs' use of information-only time-of-delivery (TOD) factors. The information-only TOD factors communicate to developers when energy deliveries may be more valuable to the system so that developers can respond with optimized project bids. The information-only TOD factors will be included each year in the IOUs' RPS Procurement Plans.[136]

As more renewable procurement occurs for reliability and overall system needs, the RPS proceeding will continue to coordinate closely with the CPUC's IRP process. The CPUC plans to continue to demonstrate its statutory mandate 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. In D.19-11-016, the CPUC required retail sellers to procure three GW of resources that contribute to system reliability due to forecasted reliability shortfalls. As a result of this order, all three IOUs have held solicitations for reliability procurement. In August 2020, the CPUC approved both PG&E's and SCE's first round of reliability procurement. SCE's procurement included storage additions to five existing solar facilities as well as stand-alone battery storage. The CPUC should continue to monitor and order procurement for system reliability to avoid capacity shortfalls and improve grid resiliency in response to climate change.

Challenge 2: Impact of Increasing Procurement Fragmentation on State Renewable Energy Goals

ISSUE:

Renewable electricity procurement is becoming increasingly disaggregated with the proliferation of new retail sellers and increased load departure from IOU service. As of 2021, CCAs and ESPs will collectively serve over 44% of load in California. As of 2020, there are 23 CCAs operating in California, with an additional six certified CCAs expected to come online in 2021 and 2022. There were 13 ESPs operating in California in 2020. Further, pursuant to the passage of SB 237 (Hertzberg, 2018), Direct Access procurement (which allows competition from private energy service providers) is already fully subscribed to expand by 4,000 GWh as of 2021 and the CPUC is considering full expansion in the future.[137]

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[135] SCE AL 4243-E, Joint IOU ELCC for RPS Study, July 1, 2020.
[136] *See* D.19-12-042 for more information on IOU Information-Only TOD Factors.
[137] *See* Direct Access Proceeding R.19-03-009.

Fragmented renewable procurement results in a proliferation of local policy priorities and business models that may not necessarily align with the State's climate and reliability goals. For instance, some non-IOU retail sellers' RPS Procurement Plans (RPS Plans) show that they prioritize keeping customer rates low over broader State policy goals, such as safety, reliability, and risk of non-compliance. Some small CCAs have indicated they find RPS requirements challenging, while ESPs have voiced that the State's RPS requirements are at odds with their business model of meeting changing customer demands. Additionally, while SB 350 requires significant long-term contracts starting in 2021, in part to incentivize building new renewable resources, many non-IOU retail sellers have historically mitigated their compliance risk by procuring existing resources. Thus, fragmentation can dilute important statewide mandates. If Direct Access continues to expand in California, increased fragmentation could significantly shift accountability of long-term contracting to ESPs whose RPS Plans and compliance reports demonstrate significant risk of not meeting long-term contracting requirements.[138]

Robust risk assessment is an essential component to ensure all LSEs meet their RPS requirements, yet few retail sellers undertake such rigorous risk analysis. Instead, most rely simply upon the experience of the seller or developer, and do not consider extenuating market circumstances of supply chain, potential load fluctuation, or variability in annual generation. Further, while statute[139] requires a minimum margin of over procurement (MMoP) to mitigate the risk of compliance failure, few retail sellers beyond the IOUs have adopted a formal MMoP. Some CCAs have local RPS targets that currently exceed the State requirement, but most CCAs and ESPs have not formally quantified MMoP to appropriately address risk, but instead prioritize decreasing the cost of procurement. Yet, failure to meet RPS goals will result in significant penalties in the millions of dollars.[140] The fragmented approach to risk ultimately exacerbates risk at an statewide aggregated level that will impact meeting the State's climate and reliability goals.

The CPUC prioritizes safety and requires all annual RPS Plans to address overall safety of contracted or owned facilities. However, few LSEs have included detailed safety policies and instead defer safety responsibilities onto transmission owners, facilities, or developers. Given that the proliferation of non-IOU retail sellers responsible for electric procurement surpasses 40 percent, this fragmented responsibility for safety may result in accountability deficiencies.

While CCAs and ESPs are subject to the same annual RPS Plan requirements as required by the IOUs, recent RPS Plans show that many CCAs and ESPs 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 to their unique service territories, despite being active retail sellers, for several years in some cases. These procurement plans, compared to highly detailed IOU plans, show that some non-IOU retail sellers are not adequately assessing risks and planning to address risks. This lack of insight on statewide procurement planning will further put the State at risk for meeting its reliability needs and climate goals.

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[138] *See* Chapter IV for a discussion of SB 155 at-risk retail sellers.

[139] Public Utilities Code 399.13(a)(4)(D).

[140] *See* 2019 Annual RPS Compliance Reports for forecasted penalties in Compliance Periods 2017-2020 and 2021-2024.

Given this assessment, increased fragmentation in the RPS program may result in a lack of statewide continuity necessary to ensure broad achievement of safety, reliability, and California's aggressive climate goals.

RECOMMENDATION:

CPUC decisions continue to inform retail sellers that filings with scant data will no longer be accepted. Each Spring, the CPUC issues a refined scoping ruling setting forth clear requirements for detailed information mandated by statute and necessary to achieve the State's goals of a reliable system that will support 100 percent zero-carbon resources by 2045. The CPUC has also put forward an initial proposal for stakeholder comment to expand its RPS Compliance Citation Program to include RPS Procurement Plans to promote compliance with State orders, which no party has opposed. The CPUC will continue to refine its directives in order to obtain the information it needs to meet the State's climate and reliability mandates and seek penalties if inadequate filings persist.

Challenge 3: Meeting the Long-Term Contracting and RPS Requirements

ISSUE:

Senate Bill 350 (de León, 2015) modified the long-term contracting requirement in the RPS program such that 65 percent of all procurement used for RPS compliance must be from contracts with terms of 10 or more years. The 65 percent long-term requirement becomes effective for all retail sellers in the 2021-2024 compliance period, though some retail sellers elected to early-comply in the 2017 – 2020 compliance period.[141] The vast majority of existing renewable energy procurement for IOUs and SMJUs is derived from long-term contracts. In comparison, CCAs and ESPs generally have not yet procured enough RPS energy from long-term contracts to meet the 65% requirement.

As demonstrated in 2020 Draft RPS Procurement Plans, some retail sellers are prudently procuring new renewables with sufficient lead-time to allow for potential delays in project development, but others are not. For instance, several CCAs have advocated for modification of the long-term contracting requirement to allow more time for new CCA entrants to comply, demonstrating the challenge that CCAs may have in meeting their imminent long-term RPS requirements. As explained in Chapters III and VI, failure to meet the long-term requirement will result in failure to meet overall RPS requirements. Thus, inadequate procurement planning may cause retail sellers to not meet the State's requirements, resulting in negative implications for reliability of the power system from not having expected resources, as well as millions of dollars in penalties that could have a significant impact on a retail seller's financial viability, as well as cost to ratepayers.

RECOMMENDATION:

The CPUC will continue to enforce the long-term contracting statute intended to build new resources, ensure reliability, and avoid system shortfalls that resulted from the volatile pricing during the 2000 energy crisis. The CPUC encourages early long-term procurement to hedge for potential delays in project

[141] Public Utilities Code Section 399.13(b).

development for new renewable build and potential project performance issues. For example, the IOUs early contracting over many years has resulted in the IOUs being forecasted to meet the current and future 65 percent long-term contracting requirement and RPS requirements.[142] The CPUC will continue to enforce SB 350 and SB 100 requirements with the RPS Citation Program and RPS compliance penalties to ensure proper compliance with the program. Further, consistent with SB 155 (Bradford, 2019), each year the CPUC will review each retail sellers' annual RPS Compliance Report and notify retail sellers if it has been determined that the retail seller is at risk of not satisfying the RPS requirements for the current or future compliance periods. When notifying at-risk retail sellers, the CPUC will also provide tailored recommendations on the actions the retail seller should take to satisfy the requirements.[143]

Additionally, the CPUC will continue to provide comprehensive instructions for retail sellers' RPS Procurement Plans and require robust reporting on CCA and ESP progress in meeting the long-term contracting requirements. The CPUC has directed retail sellers to provide a detailed plan for how they will meet the long-term contracting requirement and conduct risk assessments in their RPS Procurement Plans. The CPUC expects that both narratives should consider the risk that an eligible renewable energy resource will not be built, or that construction will be delayed, with the result that electricity will not be delivered as required by the contract. Effective procurement planning should inform retail sellers' procurement decisions, while minimizing compliance risks and effects of potential project delays. Finally, the CPUC will continue to closely monitor retail sellers' long-term contracting trends and near-term planning risks through the IRP and RPS proceedings to ensure retail sellers are on track to meet the SB 350 long-term contracting requirements.

Challenge 4: Addressing End-of-Life Management of Decommissioned Technologies Supporting RPS Programs

ISSUE:

Since the RPS Program was established in 2002, more than 500 solar PV and more than 150 wind projects have been developed, resulting in over 20,000 MW of cumulative renewable energy capacity. As some of the early RPS systems reach their end-of-life, California must begin to address the related aspect of end-of-life collection, handling, and reuse or recycling of renewable technology materials. First-generation PVs that have reached their end-of-life are currently being amassed in warehouses while wind turbine blades have limited opportunities for material reuse. In the future, these retired technologies may be disposed of in landfills, which is counter to California's waste diversion and facility responsibility goals.

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[142] The CPUC will consider the IOUs' forecasted position as well as that of CCAs and ESPs as it considers the next steps in the Power Charge Indifference Adjustment (PCIA) proceeding, R. 17-06-026. The next phase, portfolio optimization planning, seeks to manage the IOUs' energy resource portfolio, including actions to lower procurement costs and reduce risk. Although the PCIA is intended to prevent IOU customers from stranded contract and procurement costs, the compliance benefits of the IOUs' long-term contracts will not migrate with departing load customers. Thus, it is imperative for CCAs and ESPs to prepare to meet the impending 65 percent long-term contracting requirement, while accounting for any unexpected risks such as project failure, contract termination, resource curtailment, generation shortfalls, among other project risk variables.

[143] See Section IV of this Report for details on retail sellers' status.

In the case of PVs, changes in product design that utilize less scarce metals like silver result in less valuable material recovery from obsolete products via recycling. Though these improved production processes can result in lower costs and reduced GHGs, they decrease the economic value that manufacturers and developers attribute to retrieving and recycling materials. The Institute for Energy Research has acknowledged the "Mounting Solar Panel Waste Problem,"[144] and the California Department of Toxic Substances Control (DTSC) is addressing the issues of handling waste materials from renewable energy technologies by developing end-of-life regulations to improve waste management of photovoltaics.[145] Specifically, DTSC proposes to include PV modules on the list of hazardous wastes eligible to be managed as universal waste and to adopt universal waste management standards that would apply to those that generate, transport, handle, treat, or dispose of PV modules.[146] These changes are intended to reduce the number of PV modules being illegally disposed of as solid waste and to facilitate collection and proper management of waste PV modules.[147] For decommissioned wind turbines, most of the turbine's parts can be recycled or sold currently, but the blades made from resin and fiberglass have limited material value and are especially difficult to transport to landfills.

RECOMMENDATION:

The CPUC should continue to coordinate with other state agencies to address end-of-life waste issues. In January 2019, the CPUC and CalRecycle signed a memorandum of understanding (MOU) to cooperatively develop consistent approaches to waste generated by PV panels, electric vehicle batteries, energy storage batteries, and related equipment such as inverters.[148] The MOU outlines agencies' shared priorities and responsibilities for the reuse or recycling of end-of life materials. The MOU calls for the publication of a joint white paper using information shared at the workshop to explore the recycling and reuse of end-of-life materials. In April 2019, the agencies hosted a joint workshop addressing the end-of-life management for PV panels and batteries for electric vehicles and energy storage.[149] Through the first three quarters of 2020, the CPUC has continued to coordinate with CalRecycle in pursuit of the stated objectives in the MOU.

The CPUC should continue to work toward the shared goals and priorities outlined in its MOU with CalRecycle. This includes the exploration of additional opportunities to advocate for improved end-of-life management of materials used to support RPS programs. The CPUC should also consider the use of a lifecycle approach and producer responsibility principles when considering widespread deployment of energy generation technologies.

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[144] *See* IER. https://www.instituteforenergyresearch.org/renewable/solar/the-mounting-solar-panel-waste-problem/amp/.

[145] *See* DTSC https://dtsc.ca.gov/photovoltaic-modules-pv-modules-universal-waste-management-regulations/.

[146] SB 489 added article 17 to chapter 6.65 of the CA H&S Code, which authorized DTSC to adopt regulations to designate end-of-life PV modules that are hazardous wastes as a universal waste, and to allow those PV modules to be managed according to universal waste management standards.

[147] *See* DTSC. https://dtsc.ca.gov/wp-content/uploads/sites/31/2019/04/ISOR-Final-PVM.pdf.

[148] The MOU is located here: http://www.cpuc.ca.gov/uploadedFiles/CPUC_Public_Website/Content/Utilities_and_Industries/Energy_-_Electricity_and_Natural_Gas/CPUC%20%20CalRecycle_MOU_Fully%20Exctd_1-8-19.pdf.

[149] Event details, including the agenda and media advisory. https://www.cpuc.ca.gov/calEvent.aspx?id=6442460757.

The CPUC is supportive of DTSC's and CalRecycle's rulemaking efforts in the near-term and aims to work more closely with other California agencies and stakeholders to align CPUC regulations with appropriate waste management procedures and prudent environmental stewardship principles. The adoption of regulations that provide for the proper waste management of renewable energy materials are aligned with the State's goals to reduce GHG emissions and landfill waste and can provide support for the development of new infrastructure and jobs within California. CPUC research programs, such as EPIC, should consider developing initiatives to address lifecycle impacts like waste and reuse.

Challenge 5: Renewable Interconnection Costs and Locational Issues

ISSUE:

The evolving market for small distributed generation has shed light on the various challenges to project development in California's renewable energy landscape. In particular, the high and often unknown costs of interconnection for small renewable generator developers frequently challenge and delay distributed generation construction. Small renewable generators, typically less than 3 MW can experience pronounced interconnection costs compared to traditional utility-scale resources due to their inability to spread costs across a similar scale of energy generation. Still, cost transparency and communication challenges between the developer and the utility continue to be addressed in the annual stakeholder process for updating representative and typical cost information for generation interconnection.[150]

Some small renewable projects can encounter unique interconnection challenges and financial barriers due to surrounding terrain and a tendency to be located in areas of minimal load and infrastructure. Projects sited in forested and mountainous areas may be challenged by the terrain because it acts as limitation to the use of wireless and "line of sight" protection schemes, which can lead to the necessary installation of more costly interconnection equipment. When distributed generation exceeds the limits of its line section, it is possible for additional protection equipment to be required, which also incurs cost. The timeline of an interconnection process can vary and can require lengthy interconnection studies and construction delays. The incidence of these delays can discourage new small distributed generation development and could even impact LSEs' progress in meeting RPS procurement requirements. D.18-11-004 attempted to address some of these interconnection challenges by changing the BioMAT program in accordance with AB 1923. Among other changes, AB 1923 added the option for generation facilities participating in the BioMAT to interconnect to an existing transmission line. Particularly with respect to the BioMAT program, parties to RPS proceedings request that the CPUC consider broader solutions to interconnection challenges that provide rural infrastructure upgrades, grid reliability, and local resilience against the effects of climate change and Public Safety Power Shutoff events.

[150] *See* "Cost Guide Implementation Principles" in CPUC Decision D.16-06-052 Attachment A, directing an annual Cost Guide development process for facilities interconnecting to their respective distribution systems.

RECOMMENDATION:

The CPUC endorsed the Distributed Energy Resources Action Plan (DER Action Plan) that includes vision and action elements that articulate a long-term plan for distributed energy resources (DERs).[151] Included in the DER Action Plan are proposed efforts to streamline interconnection processes to accelerate DER deployment, including the integration of Integration Capacity Analysis (ICA) tools that can be employed to better inform interconnection siting decisions and further streamline study processes for certain projects.[152] A September 2020 Decision adopted modifications to Rule 21 that streamline the interconnection process by incorporating the ICA.[153]

The CPUC will continue to consider a variety of refinements to the interconnection of distributed energy resources and other topics related to distribution-level interconnection in R.17-07-007, including the coordinating framework outlined in the DER Action Plan. Additionally, stakeholders remain engaged in the CPUC's quarterly Interconnection Discussion Forums that provide an informal venue to explore a wide variety of issues related to interconnection practices and policies.[154] The CPUC should continue to consider possible solutions to mitigate the risks and challenges of small distributed generation interconnection, particularly in cases where costs are pronounced due to siting.

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[151] *See* DER Action Plan: https://www.cpuc.ca.gov/uploadedFiles/CPUC_Public_Website/Content/About_Us/Organization/Commissioners/Michael_J._Picker/DER%20Action%20Plan%20(5-3-17)%20CLEAN.pdf.

[152] ICA maps can be used to help contractors and developers find information on potential project sites for distributed energy resources. For examples, see the IOUs' available maps: PG&E; SCE; SDG&E.

[153] *See* Decision (D.)20-09-035.

[154] *See* Interconnection Discussion Forum details at https://www.cpuc.ca.gov/Rule21/.

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) acquired (1 REC = 1 megawatt hour (MWh)). Eligible renewable generation facilities may be located anywhere within the Western Electricity Coordinating Council (WECC) region.[155] These facilities are permitted to sell RECs to California retail sellers[156] 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.[157]

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.

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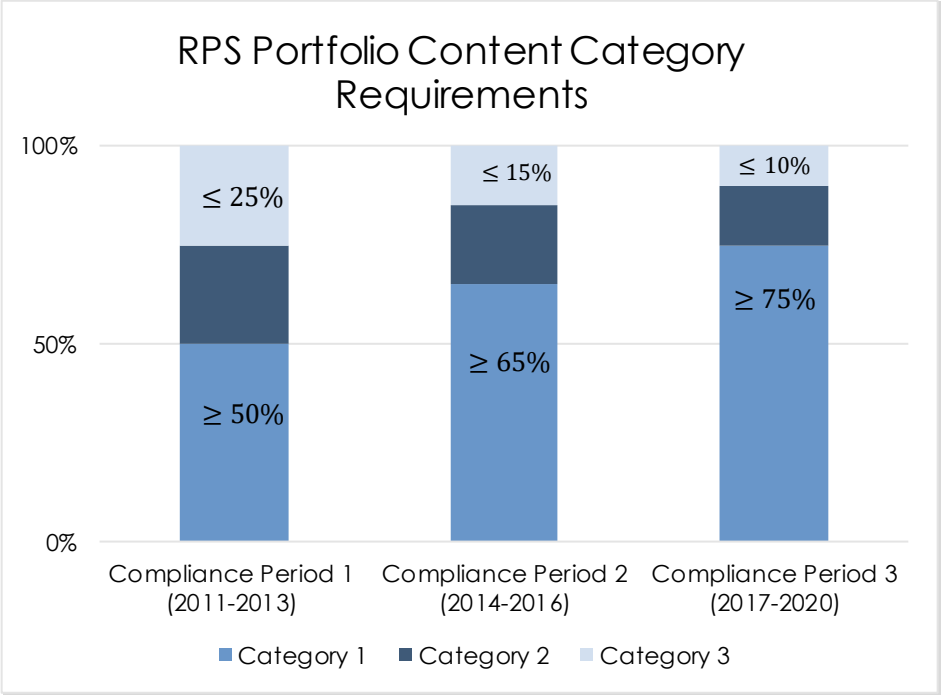
[155] The WECC region extends from the Canadian provinces of Alberta and British Columbia to the northern part of Baja California, Mexico, and encompasses the 14 western U.S. states in between.
[156] Retail seller is defined as any entity engaged in the retail sale of electricity to end-use customers located within the State, including electrical corporations (as defined in Public Utilities Code § 218), community choice aggregators, and electric service providers.
[157] The CPUC Rulemaking for the RPS program is currently R.18-07-003.

- **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.
- **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.[158] 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.

[158] *See* Public Utilities Code § 399.16(c) for additional information.

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.

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) [159] 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).

[159] 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 – 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.[160]

(LSE) Load Serving Entity: All entities that serve electricity to customers including IOUs, SMJUs, CCAs, and ESPs.[161]

(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.

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[160] 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.
[161] The CPUC is responsible for compliance and enforcement activities for retail sellers, which excludes Publicly Owned Utilities.

(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.

(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 C – California's Active Load Serving Entities

Investor- Owned Utilities (IOUs)

- Pacific Gas and Electric Company (PG&E)
- Southern California Edison (SCE)
- San Diego Gas & Electric (SDG&E)

Small and Multi-Jurisdictional Utilities (SMJUs)

- Bear Valley Electric Service (BVES)
- Liberty Utilities (formerly CalPeco Electric)
- PacifiCorp

Community Choice Aggregators (CCAs)

- Apple Valley Choice Energy (AVCE)
- Central Coast Community Energy (CCCE)
- City of Baldwin Park
- City of Pomona
- Clean Power Alliance (CPA)
- CleanPowerSF (CPSF)
- Desert Community Energy (DCE)
- East Bay Community Energy (EBCE)
- King City Community Power (KCCP)
- Lancaster Choice Energy (LCE)
- Marin Clean Energy (MCE)
- Peninsula Clean Energy (PCE)
- Pico Rivera Innovative Municipal Energy (PRIME)
- Pioneer Community Energy (Pioneer)
- Rancho Mirage Energy Authority (RMEA)
- Redwood Coast Energy Authority (RCEA)
- San Jacinto Power (SJP)
- San Jose Clean Energy (SJCE)
- Silicon Valley Clean Energy (SVCE)
- Solana Energy Alliance (SEA)
- Sonoma Clean Power (SCP)
- Valley Clean Energy Alliance (VCEA)
- Western Community Energy (WCE)

Electric Service Providers (ESPs)

- 3 Phases Renewables
- Agera Energy
- American PowerNet
- Calpine Energy Solutions
- Calpine Power America
- Commercial Energy of CA
- Constellation New Energy
- Direct Energy Business
- EDF Industrial Power Services
- Just Energy Solutions
- Pilot Power Group
- Shell Energy North America
- Tiger Natural Gas
- UC Regents

Appendix D – 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.