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November 15, 2016

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TO PARTIES OF RECORD IN RULEMAKING 15-02-020

This is the proposed decision of Administrative Law Judge (ALJ) Robert Mason and ALJ Anne S. Simon. Until and unless the Commission hears the item and votes to approve it, the proposed decision has no legal effect. This item may be heard, at the earliest, at the Commission's December 15, 2016 Business Meeting. To confirm when the item will be heard, please see the Business Meeting agenda, which is posted on the Commission's website 10 days before each Business Meeting.

Parties to the proceeding may file comments on the proposed decision as provided in Rule 14.3 of the Commission's Rules of Practice and Procedure.

Comments must be filed, pursuant to Rule 1.13, either electronically or in hard copy. Comments should be served on parties to this proceeding in accordance with Rules 1.9 and 1.10. Electronic and hard copies of comments should be sent to ALJ Mason at rim@cpuc.ca.gov and ALJ Simon at aes@cpuc.ca.gov. The current service list for this proceeding is available on the Commission's website at www.cpuc.ca.gov.

/s/ KAREN V. CLOPTONKaren V. Clopton, Chief
Administrative Law Judge

KVC: avs

Attachment

Decision **PROPOSED DECISION OF ALJ MASON and ALJ SIMON**
(Mailed 11/15/2016)

BEFORE THE PUBLIC UTILITIES COMMISSION OF THE STATE OF CALIFORNIA

Order Instituting Rulemaking to Continue
Implementation and Administration, and
Consider Further Development, of California
Renewables Portfolio Standard Program.

Rulemaking 15-02-020
(Filed February 26, 2015)

**DECISION ACCEPTING DRAFT 2016 RENEWABLES PORTFOLIO
STANDARD PROCUREMENT PLANS**

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**DECISION ACCEPTING DRAFT 2016 RENEWABLES PORTFOLIO
STANDARD PROCUREMENT PLANS****Summary**

Pursuant to the authority provided in Pub. Util. Code § 399.13(a)(1),¹ today's decision accepts, with some modifications noted, the draft 2016 Renewables Portfolio Standard (RPS) Procurement Plans, including the related solicitation protocols, filed by Pacific Gas and Electric Company (PG&E), Southern California Edison Company (SCE), and San Diego Gas & Electric Company (SDG&E).

We direct PG&E, SCE, and SDG&E to file their final 2016 RPS Procurement Plans pursuant to the 2016 solicitation schedule adopted herein.

This decision also accepts the draft 2016 RPS Procurement Plans filed by the following parties:

Electric Service Providers (ESPs): 3 Phases Renewables, Calpine PowerAmerica-CA, LLC's, Commerce Energy, Inc., Commercial Energy of California, Constellation NewEnergy, Inc., Direct Energy Business LLC, EDF Industrial Power Services, LLC, Gexa Energy California, LLC, Liberty Power Holdings, LLC, Noble Americas Energy Solutions LLC, Palmco Power CA, LLC, Pilot Power Group, Inc., Shell Energy North America (US), L.P., The Regents of the University of California, and Tiger Natural Gas, Inc.

¹ Pub. Util. Code § 399.13(a)(1) orders the Commission to "direct each electric corporation to annually prepare a renewable energy procurement plan...to satisfy its obligations under the renewables portfolio standard." As well as "require other retail sellers to prepare and submit renewable energy procurement plans..." All subsequent code section references are to the Public Utilities Code unless otherwise indicated.

Community Choice Aggregators (CCAs): Marin Clean Energy, Sonoma Clean Power Authority, Peninsula Clean Energy, CleanPowerSF, and Lancaster Choice Energy.

Small and Multi-jurisdictional Utilities: Bear Valley, PacifiCorp, and Liberty Utilities (CalPeco).

This proceeding remains open.

1. Procedural Background

The Commission has adopted a framework for consideration of RPS Procurement Plans for electric corporations in prior decisions. The most recent decision is D.15-12-025.² Consistent with the general process referred to in D.15-12-025, other prior Commission decisions, and the requirements in Senate Bill (SB) 350,³ the parties were required to file their proposed RPS Procurement Plans for 2016 and to set forth the information required therein.

In accordance with the May 17, 2016 Assigned Commissioner and Assigned Administrative Law Judge's Ruling (ACR) identifying the issues and schedule for review of the 2016 RPS Plans and the subsequent extension of time, the following parties submitted their draft 2016 RPS Procurement Plans on August 8, 2016:

² *Decision Accepting 2015 Renewables Portfolio Standard Procurement Plans* (December 17, 2015). In D.15-12-025, the Commission adopted RPS Procurement Plans for the year 2015.

³ SB 350 (De Leon, Stats. 2015, ch.547).

Investor-Owned Utilities (IOUs): Southern California Edison Company (SCE),⁴ San Diego Gas & Electric Company (SDG&E), and Pacific Gas & Electric Company (PG&E);

Electric Service Providers (ESPs): 3 Phases Renewables, Calpine PowerAmerica-CA, LLC's, Commerce Energy, Inc., Commercial Energy of California, Constellation NewEnergy, Inc., Direct Energy Business LLC, LLC, EDF Industrial Power Services, LLC, Gexa Energy California, LLC, Liberty Power Holdings, LLC, Noble Americas Energy Solutions LLC, Palmco Power CA, LLC, Pilot Power Group, Inc., Shell Energy North America (US), L.P. (Shell Energy), The Regents of the University of California, and Tiger Natural Gas, Inc.

Community Choice Aggregators (CCA): Marin Clean Energy, Sonoma Clean Power Authority, Peninsula Clean Energy, CleanPowerSF, and Lancaster Choice Energy.

Small and Multi-Jurisdictional Utilities: Bear Valley, PacifiCorp, and Liberty Utilities (CalPeCo).

The following parties submitted comments on September 1, 2016: Independent Energy Producers Association (IEPA), Joint Parties (California Biomass Energy Alliance (CBEA), California Wind Energy Association (CalWEA), Calpine Corporation, Geothermal Energy Alliance (GEA), and Ormat), Joint Utilities (SDG&E, PG&E, and SCE), Large-Scale Solar Association, and Office of Ratepayer Advocates (ORA).

The following parties submitted reply comments on September 16, 2016: PG&E, SDG&E, SCE, ORA, LSA, Shell Energy, CalWEA, the Alliance for Retail

⁴ On September 30, 2016, SCE filed a motion to update its 2016 RPS Plan in order to include an Appendix J (all elements of the pro forma Renewable Energy Credits [REC] Sales Agreement).

Energy Markets (AReM), and Marin Clean Energy, Sonoma Clean Power Authority, and Lancaster Choice Energy (CCA Parties).

For the period covered by the 2015 RPS Procurement Plans, only SCE conducted an annual RPS solicitation. All three large IOUs continued to procure through their feed-in tariff (renewable market adjusting tariff (ReMAT) program and renewable auction mechanism (RAM) programs. The most recent RAM auction was the last and final authorized RAM auction.⁵ A total of 1,405 MW was authorized to be procured through six RAM auctions, which resulted in a total of 1,532 MW of approved contracts.⁶ Given the overall success of the program and the authorization provided in D.14-11-042 for the use of RAM as a procurement tool or process, we anticipate RAM to be continued to be used as a procurement option within the annual RPS procurement plan process. Additionally, if the need arises, the Commission could authorize additional auctions, for instance if there are additional RAM contract terminations.

2. General Requirements for 2016 RPS Procurement Plans

The Order Instituting Rulemaking (OIR) initiating this proceeding was adopted by the Commission on February 26, 2015. An initial prehearing conference was held on April 16, 2015.

⁵ Pursuant to D.14-11-042, PG&E is still required to conduct two more RAM auctions for solar PV resources.

⁶ The differential in authorized versus the amount procured was due to SDG&E procuring approximately 40 percent of its target. Decision (D.) 10-12-048 at 31 and Ordering Paragraph 1 requires subscribed amounts that drop out of the RAM program be brought to subsequent auctions. As a result, the amount approved by the Commission (1532 MW) is higher than what is ultimately authorized (1405 MW).

In D.12-11-016, the Commission refined the RPS procurement process as part of its implementation of SB 2 (1X) (Simitian, Stats. 2011, ch.1). The Commission has now implemented SB 2 (1X)⁷ in several Commission decisions, including D.11-12-020,⁸ D.11-12-052,⁹ D.12-05-035,¹⁰ D.12-06-038,¹¹ D.13-05-034,¹² D.14-12-023,¹³ and D.15-12-025. These Commission decisions contain directives that require modifications to the RPS procurement process. Compliance with those directives when developing all future RPS procurement plans is required. The details of these decisions are not repeated here.

More recently, SB 350 (De León, 2015) modified the RPS program, including changes to RPS procurement rules (*e.g.*, increase in the RPS procurement requirement, additional compliance periods, and modification of RPS procurement rules). While the Commission is in the early stages of implementation,¹⁴ some of the RPS aspects of SB 350 could apply to procurement

⁷ SB 2 (1X) (Simitian, Stats. 2011, ch.1).

⁸ *Decision Setting Procurement Quantity Requirements for Retail Sellers for the Renewables Portfolio Standard Program*, December 1, 2011.

⁹ *Decision Implementing Portfolio Content Categories for the Renewables Portfolio Standard Program*, December 15, 2011.

¹⁰ *Decision Revising Feed-In Tariff Program, Implementing Amendments to § 399.20 Enacted by SB 380, SB 32, and SB 2 (1X), and Denying Petition for Modification of D.07-07-027*, May 24, 2012. D.13-01-041 denied rehearing of D.12-05-035 as modified, *Order Modifying Decision (D.) 12-05-025, and Denying Rehearing of Decision, as Modified*, January 24, 2013.

¹¹ *Decision Setting Compliance Rules for the Renewable Portfolio Standard Program*, June 21, 2012.

¹² *Decision Adopting Joint Standard Contract for Section 399.20 Feed-In Tariff Program and Granting, in Part, Petitions for Modification of Decision 12-05-035*, May 23, 2013.

¹³ *Decision Setting Enforcement Rules for the Renewables Portfolio Standard Program, Implementing Assembly Bill 2187, and Denying Petitions for Modification of Decision 12-06-038*, December 4, 2014.

¹⁴ *Administrative Law Judge's Ruling Requesting Comment on Implementation of Elements of Senate Bill 350 Relating to Procurement under the California Renewables Portfolio Standard*, April 14, 2016.

covered by the 2016 RPS Procurement Plans. Thus, the May 17, 2016 ACR instructed that the proposed 2016 RPS Procurement Plans should reasonably reflect recent statutory changes. For example, if the retail seller intends to procure more short-term contracts and comply with Pub. Util. Code § 399.13(b) beginning January 1, 2017, then its 2016 RPS Procurement Plan should clearly reflect that intended procurement and intended compliance. In order to align their procurement planning with the changes made by SB 350, any retail sellers whose draft procurement plans do not include an assumption that the procurement quantity requirement will be at least 50% of retail sales beginning in 2031 should revise their plans to include that assumption.

Consistent with the Commission's decisions and applicable legislative changes, compliance with all of the requirements set forth in the ACR is required by the IOUs. The ACR also stated that small and multi-jurisdictional utilities are subject to a subset of the requirements the ACR identified. ESPs and CCAs are also subject to a subset of these requirements.

3. Utilities Subject to Pub. Util. Code § 399.17

RPS procurement requirements for multi-jurisdictional utilities and their successors¹⁵ allow these utilities to meet their RPS procurement obligations without regard to the portfolio content category limitations in Pub. Util. Code § 399.16.¹⁶ Multi-jurisdictional utilities, *i.e.*, PacifiCorp, also have the ability to use an Integrated Resource Plan (IRP) prepared for regulatory agencies in other

¹⁵ PacifiCorp is a multi-jurisdictional utility for RPS purposes. Liberty Utilities LLC is a successor entity under § 399.17 and not a multi-jurisdictional utility because it has customers only in California.

¹⁶ § 399.17(b).

states to satisfy the annual RPS Procurement Plan requirement so long as the IRP complies with the requirements specified in Pub. Util. Code § 399.17(d).

PacifiCorp prepares its IRP on a biennial schedule, filing its plan in odd numbered years. It files a supplement to this plan in even numbered years.

As required by D.08-05-029, PacifiCorp must file and serve its IRP in Rulemaking (R.) 06-05-027 or its successor proceeding at the same time it files with the jurisdictions requiring the IRP, and an IRP Supplement within 30 days of filing its IRP. PacifiCorp filed its 2015 IRP on March 31, 2015, and its “on year” supplement to its 2015 IRP on April 30, 2015. Pursuant to D.11-04-030, PacifiCorp was instructed to file a comprehensive supplement this year since it did not file its IRP this year.¹⁷ PacifiCorp filed this off-year supplement in timely fashion on July 15, 2016.

Liberty Utilities LLC (Liberty), on the other hand, does not prepare an IRP since it is not subject to the jurisdiction of another state. We, therefore, required it to prepare an RPS Procurement Plan subject to the same requirements as a small utility under Pub. Util. Code § 399.18.

4. Utilities Subject to § 399.18

Pub. Util. Code § 399.18(b)¹⁸ allows a small utility to meet the RPS procurement obligations without regard to the portfolio content category limitations in Pub. Util. Code § 399.16.

¹⁷ In years that PacifiCorp does not file an IRP, a supplement is filed by July 15. This supplement is to include an analysis of how the IRP and supplement comply with the requirements in § 399.17(d).

¹⁸ § 399.18(a)(1) describes Bear Valley Electric Service; § 399.18(a)(2) describes the former Mountain Utilities. Mountain Utilities was purchased by Kirkwood Public Utility per

Footnote continued on next page

A small utility must file a procurement plan pursuant to Pub. Util. Code § 399.13(a)(5), but it should be tailored to the limited customer base and the limited resources of a small utility.

Accordingly, we required Bear Valley Electric Service (BVES), as well as Liberty to prepare an RPS Procurement Plan providing the information required in Sections 6.1-6.8 and 6.12-6.14 of the May 17, 2016 ACR.

5. Electric Service Providers and Community Choice Aggregators

SB 350 revised the Commission's requirements regarding what entities it shall direct to file RPS Procurement Plans. ESPs and CCAs must now file RPS Procurement Plans consistent with the requirements of Pub. Util. Code § 399.13(a)(5). Therefore, we required each ESP and CCA to file a proposed RPS Procurement Plan that complies with the requirements of sections 6.1-6.5, 6.7, 6.8, and 6.12-6.14 of the ACR.

6. Specific Requirements for 2016 RPS Procurement Plans

As indicated in the May 17, 2016 ACR, the 2016 Procurement Plans must include all information required by statute, as well as quantitative analysis supporting the retail seller's assessment of its portfolio and future procurement decisions. The ACR identified the following information for inclusion in the 2016 Procurements Plans:

- Assessment of RPS Portfolio Supplies and Demand (Section 6.1);
- Project Development Status Update (Section 6.2);

D.11-06-032. Mountain Utilities is no longer considered a retail seller subject to the Commission's RPS jurisdiction.

- Potential Compliance Delays (Section 6.3);
- Risk Assessment (Section 6.4);
- Quantification Information (Section 6.5);
- “Minimum Margin” of Procurement (6.6);
- Bid Solicitation Proposal, Including Least-Cost Best-Fit Methodologies (6.7);
- Workforce Development (6.7.1.);
- Disadvantaged Communities (6.7.2);
- Consideration of Price Adjustment Mechanisms (6.8);
- Curtailment Frequency, Costs, and Forecasting (6.9);
- California Tree Mortality Emergency Proclamation (6.10);
- Expiring Contracts (6.11);
- Cost Quantification (6.8 [sic]);
- Important Changes to Plans Noted (6.12);
- Redlined Copy of Plans Required (6.13); and
- Safety Considerations (6.14).

In the ACR, we set forth the requirement that Responses to all sections set forth therein, except Sections 6.5 and 6.11, shall be provided qualitatively in writing. Responses to Section 6.5 shall be provided in a numerical/quantitative format to support the written responses to Sections 6.1-6.4, and 6.6. The information in the Procurement Plans should be non-confidential, to the greatest extent possible, and all sources of information must be identified with citations, if any. All assumptions underlying these responses must be clearly stated.

The ACR also instructed the parties that all of the proposed 2016 RPS Procurement Plans must achieve the following:

1. Describe the overall plan for procuring RPS resources for the purposes of satisfying the RPS program requirements while minimizing cost and maximizing value to ratepayers. This includes, but is not limited to, any plans for building utility-owned resources, investing in renewable resources, and engaging in the sales of RPS eligible resources.
2. The various aspects of the plans themselves must be consistent. For instance, the bid solicitation protocol should be consistent with any statements and calculations regarding a utility's renewable net short position.¹⁹
3. The plans should be complete in describing and addressing procurement (and sales) of RPS eligible resources such that the Commission may accept or reject proposed contracts based on consistency with the approved plan, including any calculation of RPS procurement net short position.²⁰
4. IOUs should work collaboratively to make the format of the plans as uniform as possible to enable parties, bidders, and the Commission to easily access, review and compare the plans.

All plan elements should comply with the requirements set out in Section 2.

7. PG&E's RPS Procurement Plan

7.1. Summary²¹

Given its current RPS compliance position, PG&E has proposed in its 2016 RPS Plan not to hold an RPS procurement solicitation for the 2016 solicitation cycle. PG&E believes it has sufficient time in the coming years to respond to

¹⁹ As of the date of this ruling, the methodology can be found at the May 21, 2014 ruling, *Administrative Law Judge's Ruling on Renewable Net Short*.

²⁰ Section 399.13(d)

²¹ PG&E's 2016 RPS Plan.

changing market, load forecast, or regulatory conditions and will reassess the need for procurement solicitations in future RPS Plans.

7.2. Assessment of RPS Portfolio Supplies and Demand²²

7.2.1. Supply

PG&E claims it delivered 29.5% of its power from RPS-eligible renewable sources in 2015. PG&E projects that it is positioned to meet its RPS compliance requirements for the second (2014-2016), third (2017-2020), and fourth (2021-2024) compliance periods and will not have incremental RPS physical need until at least 2026.

PG&E's existing RPS portfolio is comprised of a variety of technologies, project sizes, and contract types. The portfolio includes approximately 8,000 megawatts (MWs) of active projects, ranging from utility-owned solar and small hydro generation to long-term RPS contracts for large wind, geothermal, solar, and biomass to small FIT contracts for solar PV, biogas, and biomass generation.

PG&E believes that the Green Tariff Shared Renewables Program (GTSR) also has an impact on its supply analysis. In February 2015, PG&E filed an advice letter containing its plans for advance procurement for the GTSR Program and identifying the eligible census tracts for environmental justice projects in its service territories.²³ In May 2015, together with SCE and SDG&E, PG&E submitted a Joint Procurement Implementation Advice Letter, addressing each utility's plans for ongoing GTSR Program procurement and RPS resource and

²² *Id.*, at 9.

²³ PG&E Advice Letter 4593-E (supplemented March 25, 2015).

Renewable Energy Credit (“REC”) separation and tracking.²⁴ The Joint Procurement Implementation Advice Letter and supplemental filing became effective on November 20, 2015.

PG&E also filed a Marketing Implementation Advice Letter²⁵ and a Customer-Side Implementation Advice Letter²⁶ with details regarding implementation. The Marketing Implementation Advice Letter and supplemental filing became effective on October 1, 2015, and the Customer-Side Advice Letter and supplemental filing became effective on November 20, 2015.

In addition, to accommodate GTSR procurement, PG&E filed Advice Letter 4605-E to change its RAM 6 Power Purchase Agreements (“PPA”) and RFO instructions, consistent with the minimum goals for 2015 identified in D.15-01-051.²⁷ Advice Letter 4605-E was approved via a Disposition Letter dated June 17, 2015.

On July 7, 2015, PG&E launched its RAM 6 solicitation seeking 50 MW for the GTSR Program. In December and January 2016, PG&E executed eight GTSR Program PPAs for a total of 52.75 MW, which were filed for approval as part of Advice Letter 4780-E on January 22, 2016. The facilities pursuant to these PPAs are currently under development and their status is included in the Project Development Status Update section.

In PG&E’s estimation, the GTSR Program will impact its RPS position in two ways: RPS supply may be affected, and retail sales will be reduced

²⁴ Advice Letter 4637-E.

²⁵ Advice Letter 4638-E.

²⁶ Advice Letter 4639-E.

²⁷ See D.15-01-051, Section 4.2.4, at 25-28.

corresponding to the level of program participation. D.15-01-051 permits the IOUs to supply Green Tariff customers from an interim pool of existing RPS resources until new dedicated Green Tariff projects come online. Generation from these interim facilities would no longer be counted toward PG&E's RPS targets, which will result in PG&E's RPS supply decreasing. However, there is also a possibility that RPS supply might increase in the future if generation from Green Tariff dedicated projects exceeds the demand of Green Tariff customers.

As for lessons learned and market trends, PG&E notes that the renewable energy market has developed and now offers a variety of technologies at lower prices than seen in earlier RPS Program years. PG&E has also observed the growth of renewable resources in the California Independent System Operator (CAISO) system has resulted in the downward movement of mid-day market prices. PG&E has also observed that the growth of renewable resources has produced operational challenges such as over generation situations and negative market prices. PG&E asks for provisions that will provide it with greater flexibility to bid RPS-eligible resources into the CAISO market.

7.2.2. Demand

Because PG&E claims it has no incremental procurement need under a 50% RPS requirement, it is proposing not to hold an RPS solicitation of the 2016 solicitation cycle. PG&E expects to continue procurement of additional volumes of incremental RPS-eligible contracts in 2017 through mandated procurement programs, such as the ReMAT, bioenergy renewable auction mechanism (BioRAM), and bioenergy market adjusting tariff (BioMAT) Programs.

Also, due to claimed increasing impacts of Energy Efficiency, customer-sited generation, Direct Access (DA) and CCA participation levels,

PG&E is currently projecting a decrease in retail sales in 2016 and a continued retail sales decrease through 2028, followed by modest growth thereafter.

7.3. Project Development Status Update²⁸

PG&E provides an update on the development of RPS-eligible resources currently under contract but not yet delivering energy in Appendix B to its Plan.

There are 117 RPS-eligible projects that were executed after 2002. Eighty-three of these contracts have achieved full commercial operation and started the delivery term under their PPAs. Thirty-four contracts have not started the delivery term under their PPAs. Of the 34 contracts that have not started the delivery term under their PPAs with PG&E: 26 have not yet started construction; three have started construction, but are not yet online; four are delivering energy, but have not yet started the delivery term under their PPAs, and one contract is delivering energy under its current RPS contract expiring in 2016 and will be starting the delivery term under a new RPS contract thereafter.

In addition, eight of the 117 total RPS-eligible projects are designated for the GTSR Program. All eight projects have not yet started construction and are expected to come online by April 2018.

7.4. Potential Compliance Delays²⁹

PG&E identifies two categories of potential compliance delays: (1) obstacles for renewable project developers; and (2) how PG&E mitigates these risks of compliance delay in its modeling and planning. As for the obstacles, PG&E identifies the following: securing project financing, siting and permitting projects, expanding transmission capacity, and interconnecting projects to the

²⁸ PG&E's 2016 RPS Plan at 21.

²⁹ Id., at 22.

grid. As a result, PG&E states that its RPS need calculation incorporates a minimum margin of procurement to account for some anticipated project failure and delays in PG&E's existing portfolio, which are captured in PG&E's deterministic model.

7.5. Risk Assessment³⁰

PG&E states that it models the demand-side risk of retail sales uncertainty and the supply-side risks of generation variability, project failure, curtailment, and project delays in quantitative analyses. Specifically, PG&E uses two approaches to modeling risk: (1) a deterministic model which models three risks (standard generation variability, project failure, and project delay); and (2) a stochastic model which examines uncertain variables (retail sales uncertainty, project failure variability, curtailment, and RPS generation variability). The deterministic model tracks the expected values of PG&E's RPS target and deliveries to calculate a "physical net short," which represents a point-estimate forecast of PG&E's RPS position and constitutes a minimum margin of procurement, as required by the RPS statute. These deterministic results serve as the primary inputs into the stochastic model. The stochastic model accounts for additional compounded and interactive effects of various uncertain variables on PG&E's portfolio to suggest a procurement strategy at least cost within a designated level of non-compliance risk. The stochastic model provides target procurement volumes for each compliance period, which result in a designated Bank (i.e. the banked volumes of excess procurement) size for each compliance period. The Bank is then primarily utilized as Voluntary Margin of

³⁰ *Id.*, at 31.

Over-procurement (VMOP) to mitigate dynamic risks and uncertainties and ensure compliance with the RPS.

7.6. Quantitative Information³¹

7.6.1. Deterministic Model Results

PG&E has provided the results from the deterministic model under a 50% RPS target in Row Ga of Appendices C.1. and C.2. Appendix C.1 provides a physical net short calculation using PG&E's April 2016 Bundled Retail Sales Forecast for years 2016-2020 and the LTPP sales forecast for 2021-2036. Appendix C.2 relies on PG&E's internal Bundled Retail Sales Forecast. PG&E currently estimates a long-term volumetric success rate of 100% for its portfolio of executed-but-not-operational projects. The annual forecast failure rate used to determine the long-term volumetric success rate is shown in Row Fbb of Appendix C.2. In addition to the current long-term volumetric success rate, Rows Ga and Gb of Appendix C.2 depict PG&E's expected compliance position using the current expected need scenario before application of the Bank.

As noted above, PG&E believes it is positioned to meet its second (2014-2016), third (2017-2020), and fourth (2021-2024) compliance period RPS requirements. Row Gb of Appendix C.1. in PG&E 2016 RPS Procurement Plan provides the percentages for the forecasted compliance periods.

7.6.2. Stochastic Model Results

Because PG&E uses its stochastic model to inform its RPS procurement, PG&E states it has created an Alternate RNS in Appendix C.2 for the 50% RPS target. Yet, PG&E claims that Appendix C.1. provides an incomplete

³¹ *Id.*, at 44.

representation of PG&E's optimized net short, as the formulas embedded in the RNS form required by the ALJ RNS Ruling do not enable PG&E to capture its stochastic modeling inputs and outputs. Rows Gd and Ge show the stochastically-adjusted net short, which incorporates the risks and uncertainties addressed in the stochastic model

7.7. Margin of Procurement³²

PG&E claims to consider two components when analyzing its margin of procurement: (1) a statutory minimum margin of procurement to address some anticipated project failure or delay, for both existing projects and projects under contract but not yet online, that is accounted for in PG&E's deterministic model; and, (2) a Voluntary Margin of Procurement (VMOP), which aims to mitigate the additional risks and uncertainties that are accounted for in PG&E's stochastic model. PG&E incorporates both of these components into its quantitative analysis of its RPS need.

7.8. Bid Selection Protocol³³

Because it believes it is positioned to meet its RPS targets under a 50% target, PG&E proposes not to hold a 2016 procurement solicitation. PG&E will continue to procure RPS-eligible resources in 2016 and 2017 through other Commission-mandated programs, such as the ReMAT and BioRAM Programs. Accordingly, PG&E has not included in the 2016 RPS Plan a solicitation protocol for procuring additional RPS resources, nor is it including an evaluation methodology for such purchases.

³² *Id.*, at 51.

³³ *Id.*, at 53.

7.8.1. Proposed Time of Delivery Factors

PG&E sets its Time of Delivery (“TOD”) factors based on expected hourly prices. Given the penetration of solar generation expected through 2020 and beyond, PG&E forecasts that there will be periods of time during the mid-day when net loads are low, resulting in prices that will be low or negative, especially in the spring. In addition, given the low mid-day loads, PG&E sees its peak demand (and resulting higher market prices) moving to later in the day, and as result, shifted its TOD periods in 2015. Capacity value has also become significantly less important in the selection process because: (1) market prices for generic capacity are low; and (2) net qualifying capacity using effective load carrying capability is also low. Thus, PG&E simplified its PPAs in 2015 and included only a single set of TOD factors to be applied to both energy-only and fully deliverable resources. PG&E is keeping TOD periods unchanged, but updating its TOD factors as follows:

**TABLE 9-1
RPS TIME OF DELIVERY FACTORS**

	Peak	Mid-Day	Night
Summer	1.515	0.713	1.003
Winter	1.484	0.674	1.155
Spring	1.109	0.491	0.926

7.8.2. Workforce Development

If PG&E were procuring RPS resources, PG&E states it would require bidders to submit information on projected California employment growth during construction and operation. This would include number of hires, duration of hire, and indication of whether the bidder has entered into Project

Labor Agreements or Maintenance Labor Agreements in California for the proposed project. This information was required from bidders in PG&E's 2014 RPS RFO.

7.8.3. Disadvantaged Communities

PG&E has included this component as part of its assessment of an offer's consistency with and contribution to California's goal for the RPS Program. PG&E's LCBF methodology includes a qualitative assessment of the extent to which the proposed development supports RPS goals is based on information provided by the Seller, and PG&E's assessment of that information.

If PG&E were procuring resources, it would expect to solicit information from bidders similar to what was required in the 2014 RPS RFO. There, PG&E asked bidders to respond to the following questions:

Is your facility located in a community afflicted with poverty or high unemployment or that suffers from high emission levels? If so, the Participant is encouraged to describe in its Offer, if applicable, how its proposed facility can provide the following benefits to adjacent communities:

- Projected hires from adjacent community (number and type of jobs),
- Duration of work (during construction and operation phases),
- Projected direct and indirect economic benefits to the local economy (i.e., payroll, taxes, services),
- Emissions reduction - Identify existing generation sources by fuel source within 6 miles of proposed facility; Will the proposed facility replace/supplant identified generation sources?
 - If "yes", provide estimated reduction in air pollutants/toxics in the community over life of the project/contract due to the facility (when/how much MWh/year), and avoided emissions released into the community (within 6 miles of the project).
 - If "No", why not?

In D.04-07-029, the CPUC identified benefits to low income or minority communities, environmental stewardship, local reliability, repowering, and resource diversity as factors to be incorporated in PG&E's Offer evaluation. The Participant is encouraged to describe in its Offer(s) how its Eligible Renewable Resource ("ERR") facility can provide these benefits. If known, list any existing or proposed generation projects within a one-mile radius of the Project offered into this Solicitation.

7.9. Consideration of Price Adjustment Mechanisms³⁴

If PG&E was negotiating PPAs for additional procurement, PG&E states it might consider a non-standard PPA with pricing terms that are indexed, but indexed pricing should be the exception rather than the rule. Customers could benefit from pricing indexed to the cost of key components, such as solar panels or wind turbines, if those prices decrease in the future. Conversely, customers would also face the risk that they will pay more for the energy should prices of those components increase. Asking customers to accept this pricing risk reduces the rate stability that the legislature has found is a benefit of the RPS Program.

7.10. Economic Curtailment³⁵

According to PG&E, the frequency of negative price periods in the first half of 2016 has broadly increased in the Real-Time Markets ("RTM") for the PG&E Default Load Aggregation Point ("DLAP") and for the North of Path 15 Hub ("NP15 Hub"). During January through June 2016, negative price intervals in the CAISO Five Minute Market for the PG&E DLAP occurred in

³⁴ *Id.*, at 57.

³⁵ *Id.*, at 59.

approximately 6.6% of the 5-minute intervals, compared to approximately 4% during the same period in 2015. Similarly, NP15 Hub prices for this period in 2016 were negative approximately 6.8% of the 5-minute intervals compared to approximately 3.6% during this period in 2015. The ZP26 Hub prices for 2016 in this period were negative approximately 8.3% of the intervals, roughly equal to the 2015 results for this same period.

With regard to longer-term RPS planning and compliance, in order to ensure that RPS procurement need forecasts account for curtailment, PG&E adds curtailment as a risk adjustment within the stochastic model. These modeling assumptions will not necessarily align with the actual number of curtailment hours, but are helpful in terms of considering the impact of curtailment on long-term RPS planning and compliance. PG&E will continue to observe curtailment events and update its curtailment assumptions as needed.

7.11. Expiring Contracts³⁶

Appendix E to PG&E's 2016 RPS Plan lists the projects under contract that are expected to expire in the next 10 years. As PG&E notes in Appendix G, its RNS calculations assume no re-contracting

7.12. Cost Quantification³⁷

Appendix D to PGE 2016 RPS Plan quantifies the cost of RPS-eligible procurement – both historical (2003-2015) and forecast (2016-2030). From 2003 to 2015, PG&E claims its annual RPS-eligible procurement and generation costs have continued to increase. Compared to an annual cost of \$523 million in 2003,

³⁶ *Id.*, at 68.

³⁷ *Id.*, at 68.

PG&E claims it incurred more than \$2.4 billion in procurement costs for RPS-eligible resources in 2015.

7.13. Imperial Valley³⁸

Given that PG&E is proposing not to hold a 2016 RPS solicitation, PG&E asserts that there does not appear to be a need to adopt any special remedial measures for the Imperial Valley as a part of the RPS Plan.

7.14. Important Changes to Plans Noted³⁹

Appendix A to PG&E 2016 RPS Plan contains a redline of the draft 2016 RPS Plan and compares it against PG&E's 2015 RPS Plan. The summary table highlights what PG&E describes as the key differences:

Reference	Area of Change	Summary of Change	Justification
Entire RPS Plan	Consideration of the Higher RPS Requirements from SB 350	Includes updates to consider both the 33% by 2020 target and an assumed "straight-line" trajectory associated with the SB 350 compliance period targets towards 50% RPS in 2030	Ruling at pp. 4-5.
Section 9.2	Workforce Development	Includes discussion of consideration of workforce development during bid evaluation	Ruling at p. 14

³⁸ *Id.*, at 71.

³⁹ *Id.*, at 71.

Reference	Area of Change	Summary of Change	Justification
Section 9.3	Disadvantaged Communities	Includes discussion of consideration of disadvantaged communities during bid evaluation	Ruling at p. 15
Section 18	California Tree Mortality Emergency Proclamation	Include response to the Specific Requirements for 2016 RPS Procurement Plans related to the Governor's Emergency Proclamation	Ruling at p. 16-17
Section 19	RPS Position Management and Sales of Surplus RPS Products	Includes discussion of a framework for assessing whether to hold or sell excess RPS volumes	Ruling at p. 8
Appendix J	Framework for Assessing Potential Sales of Excess RPS Volumes	Includes a framework for assessing whether to hold or sell excess RPS volumes	Ruling at p. 8

7.15. Safety Considerations⁴⁰

To the extent that PG&E builds, operates, maintains, and decommissions its own RPS-eligible generation facilities, PG&E claims it follows its internal standard protocols and practices to ensure public, workplace, and contractor safety. These standards include the Employee Code of Conduct, Safety Commitment, Personal Safety Commitment, and Keys to Life. PG&E also claims that it operates each of its generation facilities in compliance with all local, state

⁴⁰ *Id.*, at 72.

and federal permit and operating requirements such as state and federal Occupational Safety and Health Administration (“OSHA”) and the CPUC’s General Order 167. PG&E claims to do this by using internal controls to help manage the operations and maintenance of its generation facilities, including: (1) guidance documents; (2) operations reviews; (3) an incident reporting process; (4) a corrective action program; (5) an outage planning and scheduling process; (6) a project management process; and (7) a design change process.

With respect to third-party owned, RPS eligible generation, PG&E states it developed additional contract provisions to reinforce the developer’s obligations to operate in accordance with all applicable safety laws, rules and regulations as well as Prudent Electrical Practices. PG&E states it receives monthly progress reports from generators who are developing new RPS-eligible resources where the output will be sold to PG&E. As part of this progress report, generators are required to provide the status of construction activities, including OSHA recordables and work stoppage information.

7.16. RPS Position Management and Sales of Surplus RPS Products⁴¹

PG&E states it forecasts its cumulative Bank to exceed the calculated minimum Bank size over the next ten years, in part due to changes to PG&E’s retail sales forecast. Given this long position, PG&E proposes a framework through which to assess whether PG&E should hold or sell excess bankable RPS volumes, and is requesting approval of this framework, detailed in Appendix J. PG&E expects to hold one or more solicitations for the sale of bankable, bundled

⁴¹ *Id.*, at 78.

renewable generation and RECs in 2017. PG&E anticipates selling short-term products based on its position, and may consider longer term offers in the future

8. SCE 2016 RPS Plan

8.1. Summary

SCE states that it does not have a need for renewable energy at this time to satisfy its RPS program targets. In its 2016 RPS Plan, SCE proposes to hold open the possibility of conducting a limited 2016 RPS solicitation that would include both a Community Renewables solicitation and a focused solicitation to purchase renewable energy. The purpose of any RPS solicitation SCE might hold would be, in part, to solicit resources to meet local reliability need in the Western Los Angeles Basin or the Goleta area of Santa Barbara County, and to demonstrate support for California environmental policy.

8.2. Assessment of RPS Portfolio Supplies and Demand⁴²

8.2.1. Renewables Portfolio

For the first compliance period from 2011 through 2013, SCE served 20.7% of its retail sales from RPS-eligible resources. In 2014, SCE served 23.4% of its retail sales from RPS--eligible resources. In 2015, SCE served 24.3% of its retail sales from RPS-eligible resources.

Between January 2014 and December 2015, SCE claims it executed 26 RAM contracts for approximately 409 MW, 14 ReMAT contracts for approximately 27 MW, 41 SPVP IPP contracts for approximately 64 MW, one GTSR contract for 20 MW, two PRP contracts for 2 MW, and three QF standard offer contracts for approximately 38 MW. During this period, SCE also executed:

⁴² SCE 2016 RPS Plan at 5.

- 8 contracts for approximately 1,556 MW from its 2013 RPS solicitation;
- one bilateral contract for 132 MW;
- one sales agreement for 2016 deliveries; and
- 18 contracts for approximately 2,096 MW from its 2014 RPS solicitation.

SCE launched its 2015 RPS solicitation on January 29, 2016 and has executed one RPS contract with a contract capacity of 128 MW and two GTSR contracts with a total combined contract capacity of 40 MW.

8.2.2. Renewable Procurement Need

Appendices C.1 through C.4 to SCE's 2016 RPS Plan include SCE's forecast of its renewable procurement position and need - i.e., SCE's renewable net short ("RNS") - based on the RPS targets adopted by the Commission in D.11-12-020 for all years through 2020. Because of the new 50% by 2030 target established in SB 350, Appendices C.1 through C.4 also include a 50% target for 2030 and use the same methodology adopted by the Commission in D.11-12-020 to set targets for 2021 through 2030. SCE's procurement quantity requirement for the first compliance period was approximately 44.8 billion kilowatt-hours ("kWh") and its RPS-eligible procurement was about 46.4 billion kWh. The net surplus, less non-bankable procurement, results in the net long position of around 1.6 billion kWh at the end of the first compliance period.

SCE forecasts a net short position in later years under both SCE's assumptions and the Commission's assumptions. Under the 50% by 2030 target and using SCE's assumptions, SCE forecasts a net short position starting in 2023 without the use of bank (as shown in Appendix C.2) and a net short position starting in 2028 with the use of bank (as shown in Appendix C.4). Using the

Commission's assumptions, SCE forecasts a net short position starting in 2022 without the use of bank (as shown in Appendix C.1) and a net short position starting in 2027 with the use of bank (as shown in Appendix C.3). Accordingly, SCE does not have a short-term renewable procurement need, but it does anticipate a longer term need for additional RPS-eligible energy.

8.2.3. Additional Policy/Procurement Issues

SCE states that on February 13, 2013, the Commission issued D.13-02-015, the LTPP Track 1 decision, which authorized SCE to procure between 1,400 and 1,800 MW of electrical capacity in the Western Los Angeles sub-area of the Los Angeles basin local reliability area ("Western LA Basin") and 215 MW to 290 MW of electrical capacity in the Moorpark sub-area to meet local capacity requirements ("LCR") by 2021 due to the expected retirement of once-through cooling units. Pursuant to D.13-02-015, SCE was required to procure minimum amounts of gas-fired generation, preferred resources (including renewable resources), and energy storage in the Western LA Basin. There were no technology-specific requirements in the Moorpark sub-area. SCE commenced its LCR Request for Offers ("RFO") on September 12, 2013. The LCR RFO was open to all technologies that could meet SCE's LCR needs, including renewable resources.

On March 13, 2014, the Commission issued D.14-03-004, the LTPP Track 4 decision, which authorized SCE to procure an additional 500 to 700 MW of capacity in the Western LA Basin sub-area due to the retirement of the San Onofre Nuclear Generating Station. Combined, D.13-02-015 and D.14-03-004 authorized SCE to procure between 1,900 and 2,500 MW of capacity in the Western LA Basin.

On November 21, 2014 and November 26, 2014, respectively, SCE filed applications, A.14-11-012 and A.14-11-016, respectively, requesting approval of the results of its LCR RFOs for the Western LA Basin and the Moorpark, Goleta area. D.15-11-041 approved the results of the LCR RFO for the Western LA Basin and found no need for further procurement. However, D.16-05-053, the decision denying the applications for rehearing, modified D.15-11-041 to require SCE to meet the preferred resource minimum procurement authorization established in D.14-03-004. As a result, SCE is required to procure an additional 169.4 MW of preferred resources in the Western LA Basin, which SCE can procure through Commission authorized procurement mechanisms. Consistent with D.16-05-053, SCE's 2016 RPS Procurement Protocol solicits projects in the Western LA Basin to participate in the 2016 RPS solicitation, if it is conducted. Additionally, projects located in the Western LA Basin that are interconnected to SCE's distribution system served by the Johanna and Santiago substations may also meet SCE's PRP goal.

D.16-05-053 approved the contracts submitted for approval in the Moorpark sub-area and found no further need for LCR procurement in that sub-area. But, the Commission left the docket open to consider the need for the Ellwood generation and linked storage contract to maintain reliability in the Goleta area. SCE maintains that there remains a need for new resources to support operation of the electric system in the Goleta area in an emergency situation due to a lack of either generation or transmission resources.

Because of the critical need for local reliability resources in the Western LA Basin and the Goleta area, SCE proposes to not require projects in those areas to have a Phase II Interconnection Study and will seek to contract with such resources starting before January 1, 2021. To the extent SCE receives proposals

for projects in the Western LA Basin and Goleta area that are not selected in SCE's RPS solicitation based on LCBF selection criteria, SCE will consider the value of these proposals using the LCR selection process and criteria. While the Commission required certain minimum bid requirements in D.13-11-024, we find SCE's proposal reasonable in this instance due to the critical need previously identified by the Commission.⁴³

8.3. Project Development Status Update⁴⁴

Appendix B to SCE's 2016 RPS Plan contains a status update on the development of RPS-eligible projects currently under contract, but not yet delivering generation.

8.4. Potential Compliance Delays⁴⁵

SCE identifies five factors that may challenge its achievement of the RPS goals: (1) curtailment; (2) the increasing proportion of intermittent resources in SCE's renewables portfolio; (3) permitting, siting, approval, and construction of both renewable generation projects and transmission; (4) a heavily subscribed interconnection queue; and (5) developer performance issues. Each one of these factors is discussed in detail in its 2016 RPS Plan.⁴⁶

⁴³ D.13-11-024: Decision Conditionally Accepting 2013 Renewables Portfolio Standard Procurement Plans and Integrated Resource Plan and On-Year Supplement, Ordering Paragraph 10.

⁴⁴ *Id.*, at 22.

⁴⁵ *Id.*, at 22.

⁴⁶ *Id.*, at 23-28.

8.5. Risk Assessment⁴⁷

SCE states that it accounts for potential issues that could delay RPS compliance, project development status, minimum margin of procurement, and other potential risks through the use of probabilistic risk-adjusted success rates for energy deliveries from contracts that are executed but not yet online. SCE considers these risk factors in this process. Additionally, SCE says it takes into account historic generation from existing resources, including lower than expected generation, variable generation, and resource availability, among other factors, when forecasting expected generation from its contracted renewable projects. The quantitative analysis provided in Appendices C.1 through C.4 of SCE 2016 RPS Plan reflects these considerations.

8.6. Quantitative Information⁴⁸

According to SCE, Appendices C.1 through C.4 include SCE's RNS calculations using the standardized reporting template included in the RNS Ruling under the RPS program rules. As required by the Commission's RNS Methodology, Appendices C.1 and C.2 include physical RNS calculations and Appendices C.3 and C.4 include optimized RNS calculations.

Appendices C.2 and C.4 include SCE's physical RNS and optimized RNS through 2030, based on the following SCE assumptions:

- SCE's most recent bundled retail sales forecast for 2016 through 2030 which excludes Green Rate customers;
- Contracted projects that are currently online will deliver 100% of their expected amount of renewable energy;

⁴⁷ *Id.*, at 28.

⁴⁸ *Id.*, at 29.

- Probabilistic risk-adjusted success rates for energy deliveries from contracted projects that are not yet online. SCE's forecasts include individual project-specific, risk-adjusted success rates for large, near-term projects and a flat 60% success rate for the remaining projects, which is based on these projects' overall weighted average success rate; and
- 100% success rate for projects originating from pre-approved programs such as ReMAT and BioMAT before contracts from such programs are signed.

Appendices C.1 and C.3 provide SCE's physical and optimized RNS through 2030 using the Commission's RNS Methodology. Appendices C.1 and C.3 use the same assumptions as in Appendices C.2 and C.4 except that:

- Instead of using SCE's most recent bundled retail sales forecast for all years, they use SCE's most recent bundled retail sales forecast for 2016 through 2020 and 2025 through 2030 and the standardized planning assumptions that were used in the 2014 LTPP for 2021 through 2024.

At this time, SCE states it does not propose including a voluntary margin of over-procurement ("VMOP") in its renewable procurement planning. SCE will account for RPS need forecasting risks through the identification and forecast of RECs above its RPS procurement quantity requirements based on its forecast RPS portfolio.

8.7. Minimum Margin of Procurement⁴⁹

SCE states that its renewable procurement efforts will be guided by its forecast of its renewable procurement needs, as provided in Appendices C.1 through C.4 to its 2016 RPS Plan.

⁴⁹ *Id.*, at 37.

In its forecast of its renewable procurement position and need, SCE currently accounts for the risks of project failure and delay associated with contracted projects that are not yet online. To this end, SCE uses individual project-specific, risk-adjusted success rates for large, near-term projects and a flat 60% success rate for the remaining projects, which is based on these projects' overall weighted average success rate.

SCE asks that the Commission rely on retail sellers to calculate their minimum margins of procurement and should not attempt to impose a one-size-fits-all approach. As many of the projects in SCE's portfolio become operational, SCE believes that it will face different risks, including integration of these resources. The risks associated with project failure will be replaced by less significant risks of projects generating below full capacity. Similarly, SCE expects that the portfolio risk picture is not the same for each retail seller. For example, risks may vary depending on whether a portfolio contains a high proportion of contracts that are online or depending on the various technologies being used (*e.g.*, geothermal technology, which is a baseload resource, versus wind or solar technologies, which are more intermittent). For these reasons, SCE suggests that each retail seller should continue to have the authority to revise its approach to calculating the minimum margin of procurement through the RPS procurement planning process and each retail seller should have the flexibility to calculate this margin based on its unique portfolio make-up and procurement needs.

8.8. Bid Solicitation Protocol, Including LCBF Methodologies⁵⁰

8.8.1. Bid Solicitation Protocol

If SCE launches a 2016 RPS solicitation, SCE will use the proposed 2016 Procurement Protocol included here as Appendix F.1. The Procurement Protocol includes, among other things:

- SCE's requirements for initial delivery dates and preferred contract term lengths;
- Deliverability characteristics and locational preferences;
- SCE's preference for LCR and PRP projects;
- Encouragement for Women-Owned, Minority-Owned, Disabled Veteran-Owned, Lesbian-Owned, Gay-Owned, Bisexual-Owned, and/or Transgender-Owned Business Enterprises ("Diverse Business Enterprises") to participate in SCE's RPS solicitation and information on how sellers can help SCE to achieve General Order ("GO") 156 goals;
- Requirements for each proposal submission;
- A description of the type of products SCE is soliciting;
- A schedule of key dates related to the 2016 RPS solicitation; and
- SCE's 2016 *Pro Forma* Renewable Power Purchase Agreement ("*Pro Forma*"), attached as Appendix G.1; and

2016 *Pro Forma* Master Renewable Energy Credit Purchase Agreement ("2016 REC Purchase Agreement"), which will be supplied with supplementary materials later.

⁵⁰ *Id.*, at 38.

8.8.2. LCBF Methodology

In its LCBF evaluation process, SCE states that it performs a quantitative assessment of each proposal and subsequently ranks them based on each proposal's benefit and cost relationship. The result of the quantitative analysis is a rank order of all complete and conforming proposals' net levelized cost that help define the preliminary shortlist. Following the quantitative analysis, SCE will conduct an assessment of the top proposals' qualitative attributes. These qualitative attributes, including factors such as local reliability, resource diversity, and nominal contract payments, are considered to either eliminate or add projects to the final shortlist based on qualitative attributes, or to determine tie-breakers, if any. Once a project is added to the shortlist, SCE may enter into a PPA with the project. Appendix H.1 (the "LCBF Methodology") to SCE's 2016 RPS Plan describes this process, including capacity valuation and the renewable integration cost adder, among other factors.

In accordance with the ACR, SCE is also considering as qualitative factors in its LCBF valuation, the impact of a project on: (1) employment or Workforce Development; and (2) disadvantaged communities which are identified as Environmental Justice communities through California's Environmental Protection Agency's CalEnviroScreen 2.0.

8.9. Consideration of Price Adjustment Mechanisms⁵¹

SCE does not plan to solicit price structures based on indices in its 2016 RPS solicitation. Sellers can, however, bid escalation factors in their prices.

⁵¹ *Id.*, at 40.

8.10. Economic Curtailment, Frequency, Costs, and Forecasting⁵²

SCE plans to economically bid resources with economic curtailment rights into the day-ahead and real-time markets. Resources with these curtailment rights will then be curtailed as needed based on CAISO's economic dispatch. In some SCE PPAs, there is a pre-defined amount of pre-paid energy per year that may be economically curtailed, subject to some restrictions, without requiring SCE to pay for the energy that could have been delivered but for the curtailment instruction. As noted above, this amount is commonly referred to as a "curtailment cap." Once the curtailment cap is reached, SCE must pay the contract price for energy that could have been delivered but for the curtailment instruction. In other SCE PPAs, SCE has the right to curtail based on economic factors, but must always pay the contract price for energy that could have been delivered but for the curtailment instruction. These types of curtailment rights are commonly referred to as "take-or-pay." In instances where SCE has either exceeded the curtailment cap or only has "take-or-pay" economic curtailment rights to begin with, if SCE were not to curtail deliveries in excess of any schedules awarded at positive prices, customers would pay the contract price for that excess delivered energy *and* incur the costs associated with negative pricing in such intervals. SCE's economic bids will therefore serve to further limit customer exposure to negative prices both day-ahead and in real-time, even if SCE ultimately pays the contract price for curtailed energy.

⁵² *Id.*, at 40.

8.11. Expiring Contracts⁵³

For SCE's RPS-eligible contracts expiring in the next ten years, Appendix E to SCE's 2016 RPS Plan includes the name of the facility, technology, contract expiration date, nameplate capacity, expected annual generation, location, contract type, and portfolio content category classification.

8.12. Cost Quantification⁵⁴

The spreadsheet attached as Appendix D to SCE's 2016 RPS Plan includes actual expenditures per year for RPS-eligible generation for every year from 2003 through 2015, as well as actual RPS-eligible generation for every year from 2003 through 2015. Appendix D also includes a forecast of future expenditures SCE may incur every year from 2016 through 2030, as well as a forecast of expected generation for every year from 2016 through 2030.

8.13. Imperial Valley⁵⁵

In SCE's 2015 RPS solicitation, SCE states it received 279 proposals.

8.14. Important Changes from 2015 RPS Plan⁵⁶

Topic		2016 RPS Plan
Category Products		Considering Proposals only for Category 1 Products
Commercial On-Line		If SCE conducts a 2016

⁵³ *Id.*, at 45.

⁵⁴ *Id.*, at 45.

⁵⁵ *Id.*, at 46.

⁵⁶ *Id.*, at 46.

Date		RPS solicitation, SCE intends to solicit Category 1 products with delivery terms commencing on or after January 1, 2021, except in the Western LA Basin and Goleta area.
10 Year Term Lengths or Less		If SCE launches a 2016 RPS solicitation, SCE will allow sellers to offer terms of any length. However, SCE will also require that sellers propose at least one offer with a term length of 10 years or less for each project.
Solicitation Schedule		The proposed scheduled for the 2016 RPS solicitation, included in the 2016 RPS Procurement Protocol, at Section 3.01, includes only the events that may occur, if SCE decided to go forward with the solicitation, but shows the dates as "to be determined."
REC Sales		SCE plans to solicit offers for SCE to sell RECs of 2016-2020 vintage as part of any 2016 RPS solicitation that it may hold. The 2016 RPS Procurement Protocol, in

		<p>Article 1, includes solicitation of proposals to sell RECs of 2016-2020 vintage which may be part of any 2016 RPS solicitation.</p>
<p>Workforce Development</p>		<p>The 2016 RPS Procurement Protocol, at Section 3.2(g)(i), includes a requirement that each bid address its ability to contribute to employment growth. As discussed in Appendix H.1, SCE’s LCBF methodology will assess this information as one of the qualitative factors considered for each bid.</p>
<p>Disadvantaged Communities</p>		<p>The 2016 RPS Procurement Protocol, at Section 3.2(g)(i), includes a requirement that each bid address its impact, if any, on such disadvantaged communities, identified in the Environmental Justice communities through California’s Environmental Protection Agency’s CalEnviroScreen 2.0. As discussed in Appendix H.1, SCE’s LCBF</p>

		methodology will assess this information as one of the qualitative factors considered for each bid.
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8.15. Safety Considerations⁵⁷

SCE's 2016 *Pro Forma* provides that the seller must operate the generating facility in accordance with "Prudent Electrical Practices." The detailed definition of "Prudent Electrical Practices" includes "those practices, methods and acts that would be implemented and followed by prudent operators of electric energy generating facilities in the Western United States, similar to the Generating Facility, during the relevant time period, which practices, methods and acts, in the exercise of prudent and responsible professional judgment in the light of the facts known or that should reasonably have been known at the time the decision was made, could reasonably have been expected to accomplish the desired result consistent with good business practices, reliability and safety. . . ."

SCE's 2016 *Pro Forma* also provides that, prior to commencement of any construction activities on the project site, the seller must provide to SCE a report from an independent engineer certifying that seller has a written plan for the safe construction and operation of the generating facility in accordance with Prudent Electrical Practices.

SCE also has a safety section in its 2016 Procurement Protocol providing that sellers must possess a written plan for the safe construction and operation of the generating facility as set forth in the 2016 *Pro Forma*.

⁵⁷ *Id.*, at 50.

8.16. Standard Contract Option⁵⁸

SCE plans to include a “Standard Contract Option” using the RAM procurement tool in any 2016 RPS solicitation that it may conduct. The Standard Contract Option will allow for rapid development of renewable projects by avoiding the contract negotiation process and expediting the Commission approval process of executed PPAs. Sellers will have the option to participate in the Standard Contract Option by checking a box in the RPS proposal form. The Standard Contract Option will only be available to projects with a first point of interconnection to the CAISO, and not to dynamically scheduled projects.

Subject to SCE’s selection of the proposal and agreement that a standard contract is appropriate for the proposal, sellers will be offered a standard contract in the form of the 2016 *Pro Forma* with no negotiations. Once executed, the Standard Contract Option PPAs will be submitted to the Commission for approval via a Tier 2 advice letter.

8.17. GTSR Program⁵⁹

The GTSR program structure approved by the Commission consists of two elements: (1) a green tariff option (called the “Green Rate” by SCE) allowing customers to purchase energy with a greater share of renewables, and (2) an enhanced community renewables option (called the “Community Renewables” or “CR” program by SCE) allowing customers to subscribe to renewable energy from community-based projects.

⁵⁸ *Id.*, at 51.

⁵⁹ *Id.*, at 58.

With regard to the Green Rate, SCE has already procured its 50 MW advance procurement requirement in its 2015 RPS solicitation. SCE does not anticipate doing additional Green Rate procurement in the 2016 RPS solicitation. This is because the Green Rate program currently has a limited number subscribed customers and SCE's advance procurement is expected to satisfy initial customer enrollment.

SCE has filed several advice letters to implement the CR program, including: (i) Advice 3180-E identifying the eligible census tracts for EJ projects in its service territory; (ii) Advice 3218-E, which is the IOUs' Joint Procurement Implementation Advice Letter; (iii) Advice 3219-E, which is SCE's Customer-Side Implementation Advice Letter; (iv) Advice 3220-E, which is SCE's Marketing Implementation Advice Letter; (v) Advice 3432-E, which is the 20 Year Forecast of GTSR bill credits and charges; and (vi) Advice 3422-E, which makes changes to SCE's 2015 *Pro Forma* Renewable Power Purchase and Sale Agreement, Standard Contract Option and RFO instructions, needed to implement the CR program through the RAM procurement tool consistent with D.16-05-006 (the "CR-RAM RFO"), and also requested closure of SCE's CR-MAT program because projects eligible for SCE's CR-MAT program will also be eligible for SCE's CR-RAM program.

8.18. Other RPS Planning Considerations and Issues⁶⁰

8.18.1. Bilateral Transactions

As part of its overall procurement strategy, SCE may engage in bilateral negotiations for renewable energy purchases or sales subject to the Commission's review and approval of completed transactions

9. SDG&E 2016 RPS Plan

9.1. Summary

SDG&E claims that its RPS Plan establishes guidelines for SDG&E's procurement of Least-Cost Best-Fit ("LCBF") RPS-eligible resources that will enable SDG&E to achieve the following levels of renewable deliveries during each Compliance Period ("CP"): (a) an average of 20% of retail sales between January 1, 2011 and December 31, 2013, inclusive ("CP1"); (b) 25% of retail sales by December 31, 2016, with reasonable progress made in 2014 and 2015 ("CP2"); (c) 33% of retail sales by December 31, 2020, with reasonable progress made in 2017, 2018 and 2019 ("CP3"); (d) 40% of retail sales by December 31, 2024, with reasonable progress made in 2021, 2022 and 2023 ("CP4"); (e) 45% of retail sales by December 31, 2027, with reasonable progress made in 2025 and 2026 ("CP5"); and (f) 50% of retail sales by December 31, 2030, with reasonable progress made in 2028 and 2029 ("CP6").

⁶⁰ *Id.*, at 63.

9.2. Assessment of RPS Portfolio Supplies and Demand⁶¹

9.2.1. Need Determination

In determining RPS needs, SDG&E states that it takes into account factors such as the probability of success for various project types, other portfolio impacts, and mandated procurement programs (e.g. GTSR, BioMAT, Re-MAT, Renewable Auction Mechanism, and BioRAM). SDG&E claims that it exceeded the 2020 goal of 33% renewable energy five years early (achieving 35% RPS in 2015), and is currently forecasting 45% renewable energy by 2020. As such, it is SDG&E's expectation that it will be able to meet its CP2 and CP3 goals with RPS eligible procurement already under contract. SDG&E believes that the most reasonable course of action at this time is to refrain from soliciting new renewable resources via an RPS-specific solicitation in the 2016 procurement cycle.

SDG&E then assessed the compliance needs for each compliance period. For CP1, the compliance determination process is not yet complete. For CP2, SDG&E expects that it will meet its CP2 RPS goals with generation from contracts that have been executed, together with the deliveries from utility-owned generation ("UOG") initiatives where relevant progress has been made. With respect to CP3, in light of the current probability-weighted RPS position forecast, it is possible that SDG&E will not require additional procurement. As for the post-2020 period, SDG&E states it may undertake additional procurement.

⁶¹ SDG&E 2016 RPS Plan at 3.

9.2.2. RPS Portfolio

SDG&E says it employs an optimization strategy, wherein the probability of success of each of the projects in SDG&E's portfolio is revised monthly in an interdepartmental meeting using the most current information. The result of this review is a calculation of SDG&E's forecasted RPS position, which is then compared with SDG&E's RPS compliance requirements to determine its RNS. SDG&E uses this RNS to determine the appropriate level of procurement, including the necessary margin of over-procurement, going forward. Generally, if SDG&E were to foresee a shortfall it will then procure additional resources; if it foresees an excess then it will seek to sell a portion or all of this excess pending the results of a detailed cost and benefit analysis of banking versus selling. Once SDG&E has determined its need, it proceeds to manage its procurement by continually reviewing its portfolio to minimize costs, maximize value and manage risk.

9.2.3. Lessons Learned

While SDG&E discusses a number of lessons learned and market, we focus on the phenomenon of overbuilding and its impact on ratepayers. For the past four years, SDG&E states it has been concerned that developers have provided profiles in prior solicitations that ultimately do not match the profiles of the facilities that are built. In other words, developers have "overbuilt" facilities (*i.e.*, installed capacity above the amount bid and/or shaped the production profile to take advantage of higher-priced TOD periods). The resulting over generation has increased costs to customers through increased contract costs, and increased generation overall which increases the incidence of and payments for negative real-time energy pricing. In response to this observation, SDG&E modified its PPA to include a maximum limit on generation during each TOD

period, which the Commission approved as a part of SDG&E's 2013 RPS Plan. SDG&E also made several changes to its PPA in its 2015 RPS Plan in an effort to address overbuilding through stronger generation caps.

9.3. Project Development Status Update⁶²

SDG&E states it evaluates project development status to assess each project's ability to begin deliveries pursuant to contract terms and conditions. SDG&E's portfolio of renewable energy resources currently under contract but not yet delivering (either pre-construction or in construction) are in various stages of development. SDG&E has contracts with 6 projects that are in the pre-construction or construction phase (of which 2 are Utility Owned Generation [UOG]) and 62 projects that are in commercial operation (none of which are UOG). In Appendix 1 to its 2016 RPS Plan, SDG&E provides its most recent information on its developing projects from its June, 2016 Procurement Review Group (PRG) meeting.

9.4. Potential Compliance Delays⁶³

SDG&E identifies seven potential facts that can impact project development and the eventual attainment of RPS program goals: (1) transmission and permitting; (2) project finance, tax equity financing, and government incentives; (3) debt equivalence and accounting; (4) regulatory factors affecting procurement; (5) unanticipated curtailment; (6) insufficient supply of renewable resources; and (7) unanticipated increases in retail sales. SDG&E states that these factors contribute to SDG&E's monthly assessment of the likelihood of each

⁶² *Id.*, at 35.

⁶³ *Id.*, at 37.

project's success. For example, a project that has been experiencing difficulty in obtaining a key permit would receive a probability weighting reduction to account for this risk until the issue is resolved. While the impacts of the regulatory proceedings cannot be known until the final decisions are issued, SDG&E is monitoring these issues and will reflect their outcomes accordingly, when appropriate. The results of these cumulative assessments are reflected in the RNS, which helps SDG&E to identify any potential project delays that may impact compliance and to then plan its procurement activities over the next two compliance periods and past 2020. The RNS as of June, 2016 is provided in Appendix 2 to SDG&E 2016 RPS Plan.

9.5. Risk Assessment⁶⁴

SDG&E has observed what it calls dynamic factors that may affect power production from delivering projects:

- Resource Availability, Lower than Expected Generation, and Variable Generation: Renewable resources depend on natural sources of energy which are variable, and can be impacted by various factors. For example, a bad wind year can impact a wind facility's performance and cause lower than expected generation, impacting SDG&E's ability to meet its RPS goals. Another factor that could also impact generation, and therefore SDG&E's ability to meet its RPS goals, is the occurrence of unexpected mechanical failures. This could cause the facility to be partially or fully unavailable until the issue can be resolved.
- Regulatory Changes: The expiration of subsidies or additional requirements resulting from changes in regulations could lower the revenue stream for RPS developers and could lead to reduced production if the project has difficulty in supporting this lower revenue stream.

⁶⁴ *Id.*, at 47.

- Economic Environment: The interest rates and flexibility of financing arrangements entered into by developers can impact a project's success. Long-term project financing arrangements with unfavorable terms can lead to project failure or reduced production if the project has difficulty in supporting the financing cost requirements. Additionally, a change in the economic environment could negatively impact a generator's supply chain, potentially causing difficulty in complying with contract terms.
- Evolving Technology: Facilities with older generation technology that is no longer supported by the manufacturer can experience project failure or reduced production. This problem is arising now for older RPS projects, and could repeat itself over the next 20 years as the projects being contracted for today begin to age.
- Issues with Third Party Mandatory Systems: CAISO and WREGIS systems have experienced technical issues in the past, and as a result, some of SDG&E's pre-paid RECs have not been received when due. Potential technical problems with these systems going forward could complicate the compliance process.

The above factors contribute to SDG&E's monthly project assessments of the likelihood of each project's success. For example, the probability weighting for a project that has begun experiencing technical difficulties due to an aging system and has been unable to receive assistance from a manufacturer that no longer exists, would receive a probability weighting reduction to account for its reduced generation until the issue is resolved. The result of these cumulative assessments is reflected in the RNS, which SDG&E will then use to inform its procurement activities over the next two compliance periods and beyond 2020. The RNS as of June, 2016 is provided in Appendix 2 to SDG&E's 2016 RPS Plan.

9.6. Quantitative Information⁶⁵

The analysis attached in Appendix 2 to SDG&E's 2016 RPS Plan shows the Commission's prescribed RNS calculation with supporting probability weighting calculations by project as of June, 2016.

9.7. Minimum Margin of Over-Procurement⁶⁶

SDG&E's RPS Risk Adjusted RNS Calculation, as shown in Appendix 2 to SDG&E's 2016 RPS Plan, provides a Voluntary Margin of Over Procurement (VMOP). SDG&E's VMOP is composed of a "Minimum Margin of Procurement" that is intended to account for foreseeable project failures or delays, as well as an additional volume of procurement which is undertaken to ensure that SDG&E achieves its RPS requirements despite unforeseeable risks. Due to fluctuations in RPS targets (as a result of changes in retail sales) and RPS deliveries, SDG&E believes it is nearly impossible to meet RPS targets with the exact number of MWhs required. SDG&E's VMOP is designed to ensure that it achieves its RPS goals with a "buffer" to and considers foreseeable and unforeseeable risks. Because it is difficult to predict retail sales and project performance, particularly for periods farther into the future, SDG&E's VMOP may be higher in later years. SDG&E's portfolio (RPS resources necessary to reach compliance and provide a VMOP) is the result of the forecasts (including need, retail sales, and project success rates), the assessment of potential risks, and the project valuations made at the time of each individual contract execution and approval. SDG&E's RNS calculation, including its VMOP, for each year is based on the following formula:

⁶⁵ *Id.*, at 48.

⁶⁶ *Id.*, at 49.

RPS Risk-adjusted Net Short = (Bundled Retail Sales Forecast x RPS Procurement Quantity Requirement + Voluntary Minimum Margin of Procurement) – (Online Generation + Risk-adjusted Forecast Generation + Pre-approved Generic Generation)

9.8. Bid Solicitation Protocol, Including Least-Cost, Best-Fit⁶⁷

Attached as Appendices 6-12.C to SDG&E's 2016 RPS Plan are SDG&E's proposed RPS Long and Short-Term Model PPAs, RPS REC Agreement, LCBF, RPS Sale RFP, RPS Sales Model PPA, documentation for a GT RAM solicitation, and documentation for an ECR RAM solicitation. Although SDG&E does not intend to issue a solicitation for RPS purchases in 2016, it has attached RPS Long- and Short-Term Model PPAs, an RPS REC Agreement, and an LCBF document

9.8.1. Workforce Development Assessment Proposal

SDG&E proposes that a Workforce Development Assessment will be added as a qualitative factor within SDG&E's LCBF. The information used in this Assessment will be gathered as part of the required bid information for any solicitations which include renewable resources. The Assessment results will be qualitatively compared among all renewable resource bids within the solicitation which will inform the final bid ranking, similar to all other qualitative factors

9.8.2. Assessment of Benefits to Disadvantaged Communities

SDG&E has applied this factor on a qualitative basis along with several other qualitative factors (see Appendix 9 to SDG&E's 2016 RPS Plan for a full

⁶⁷ *Id.*, at 50.

list). Benefits to the community are either described by the developer in the project description form, or can be requested by SDG&E if not provided. The results of SDG&E's LCBF analysis (quantitative as well as any additional qualitative) are shared with the PRG and also described in the AL seeking approval for SDG&E's shortlist

9.9. Consideration of Price Adjustment Mechanism⁶⁸

SDG&E has incorporated price adjustment mechanisms into some of its current contracts that are intended to alleviate some of these risks, including the following:

- Price adjustment for delay in Guaranteed Commercial Operation Date ("GCOD"): A lower price for a late GCOD provides additional incentive for developers to come online pursuant to the contract
- Capped transmission upgrade costs: Placing a cap on the amount of transmission upgrade costs, which are ultimately borne by ratepayers, that a project can incur is, in SDG&E's estimation, an effective way to limit ratepayer exposure to such costs. The cap is set as a condition precedent to SDG&E's obligations under the PPA. If estimated costs exceed the cap, SDG&E has the right not to move forward with the PPA.
- Price adjustment for higher than expected transmission upgrade costs: Another mechanism that SDG&E has incorporated into past contracts is a mechanism whereby the seller agrees to a price reduction to offset higher than anticipated transmission upgrade costs. Under this mechanism, the contract price would be reduced on a dollars per megawatt-hour basis

⁶⁸ *Id.*, at 52.

commensurate with the cost of transmission upgrades above an agreed upon cap. The price adjustment mechanism would include an upper limit on transmission upgrade costs, above which SDG&E can terminate the contract. This mechanism is similar to the cap described immediately above except, rather than giving SDG&E the right not to move forward with the PPA, it gives the developer the choice of whether to go forward at a reduced price equal to the amount of transmission costs above the cap, or the developer may choose not to go forward with the PPA.

- Price adjustment for failure to achieve full capacity deliverability status: If a project is not deemed fully deliverable by CAISO at the time of COD, then the PPA price is reduced by either a negotiated price reduction specific to the project, or the application of energy only TOD factors in place of FCDS factors until such time as the project is deemed fully deliverable.

9.10. Economic Curtailment Frequency Costs, and Forecasting⁶⁹

In SDG&E's estimation, the issue of curtailment is a result of the operational characteristics of the facilities within the renewable market (both those procured pursuant to the RPS program, as well as customer-side facilities that are incremental to the RPS program under existing rules, specifically net energy metered installations). These resources are typically intermittent, which results in generation profiles that do not necessarily sync with load. SDG&E's load profile now shows a shift toward peaks in the evening, rather than at mid-day when solar generation is highest. The difference between these

⁶⁹ *Id.*, at 53.

intermittent resource profiles and load profiles becomes more pronounced as more renewable generation is brought online. This difference leads to integration issues, specifically over generation, which in turn leads to one of two possibilities: a curtailment order or a negative pricing payment.

SDG&E states it has been tracking its curtailment actions and results since Q3 2014, and based on the data available to date, its curtailment activities have resulted in cost savings for SDG&E ratepayers. SDG&E will continue to track this data and report on it.

SDG&E has continued renegotiation of dispatch down, scheduling and curtailment provisions of existing contracts. To the extent feasible, SDG&E plans to address all contracts that require updates due to CAISO's implementation of FERC Order 764, including RAM legacy contracts to the extent the Commission has previously approved such provisions in the most recent RAM VI PPA. SDG&E's PPAs (including RAM legacy contracts) generally contain language which contemplates the need for the buyer and seller to update the PPA when there are major market changes (such as CAISO's implementation of FERC Order 764).

9.11. Expiring Contracts⁷⁰

Appendix 4 to SDG&E's 2016 RPS Plan lists SDG&E's portfolio of contracts as of June, 2016.

⁷⁰ *Id.*, at 60.

9.12. Cost Quantification⁷¹

Appendix 3 to SDG&E's 2016 RPS Plan provides an annual summary of both actual and forecasted RPS procurement costs and generation, by technology type, as of June, 2016.

9.13. Imperial Valley

The RPS portfolio currently contains 11 contracts in the IV/IID territory, that when completed will provide an estimated 3,100 GWh per year. As of June, 2016, 10 of these projects have reached commercial operation, and the generation from these projects is anticipated to be approximately 3,000 GWh per year. Additionally, projects located within IV and either directly connected or dynamically transferred via pseudo-tie into SDG&E's service territory by the CAISO are eligible to participate in SDG&E's GTSR program. SDG&E proposed in AL 2717-E, which addresses initial procurement for the GT component via RAM, that projects from the IV be allowed to submit bids. This AL was approved without modification and became effective on June 11, 2015.

9.14. Important Changes to the 2015 RPS Plan⁷²

Appendix 5 to SDG&E's 2016 RPS Plan detail the important changes made to its 2015 RPS Plan

9.15. Safety Considerations⁷³

SDG&E's RPS PPAs have the following provisions that are designed to incorporate safety considerations into its decision-making process and

⁷¹ *Id.*, at 60.

⁷² *Id.*, at 61.

⁷³ *Id.*, at 61.

operations: good industry practice; annual capacity testing, general operation; meeting CAISO and WECC standards; meeting reliability standards; performance of testing and calibration of the electric meters; scheduling of planned outages; completion and submission of quarterly progress reports that address all accidents, work stoppages, and their impact on project construction.

SDG&E's PPA provisions (BioMAT FiT Program include standard of care; access rights; safety plan; demonstrated contract capacity; and prudent electrical practices.

SDG&E requires all contractors working on Utility-Owned Generation Projects to observe safety requirements and safety inspections and reporting protocols that are summarized in the 2016 RPS Plan.

SDG&E also includes a discussion of the safety features in the PPA Provisions (CRE and Water Fit Programs, and Re-MAT FiT Program. But as these programs ended on July 24, 2013 and June 30, 2016, respectively, we do not summarize these safety provisions in this decision

9.16. Renewable Auction Mechanism⁷⁴

As for procurement need, SDG&E may use the RAM solicitation documentation, attached as Appendices 11-12.C to SDG&E's 2016 RPS Plan, on an as-needed basis to procure for its GTSR program. The RAM documentation SDG&E attached is intended for procurement of resources for the GT component of SDG&E's GTSR program, as well as for the Enhanced Community Renewables (ECR) component of SDG&E's GTSR program. SDG&E reserves the right to file

⁷⁴ *Id.*, at 77.

a motion later in 2016 to update its 2016 RPS Plan if it determines that a RAM RFO, for purposes other than GTSR procurement, is necessary

9.17. Green Tariff Shared Renewables Program⁷⁵

Pursuant to D.15-01-051, SDG&E filed a Tier 1 AL describing its advanced procurement plan on February 23, 2015, which became effective on February 25, 2015. This AL explained that SDG&E will procure only for GT at this time, stating “SDG&E will seek to procure its authorized initial advanced procurement capacity of between 10.5 MW and 25 MW for SDG&E’s GT program as part of SDG&E’s RAM VI solicitation.” SDG&E also filed a Joint Procurement Implementation AL (“JPIAL”) in partnership with SCE and PG&E, as well as SDG&E-specific Marketing Implementation (“MIAL”) and Customer Side Implementation (“CSIAL”) ALs on May 13, 2015. The Commission issued D.16-05-006 on May 12, 2016, addressing participation of ECR projects in the RAM and other refinements to the GTSR program. Pursuant to that decision, SDG&E filed a Tier 2 AL on June 15, 2016 submitting a revised ECR rider and solicitation documents to allow for procurement of ECR projects using the RAM.

10. Comments on the 2016 RPS Plans

As noted above, a number of parties submitted opening and reply comments on several of the 2016 RPS Procurement Plans. We have identified those comments that warrant a response in this decision below.

Party Commenting	2016 RPS Plan Commenting On	Issue	Conclusion Reached by this Decision
IEPA Comments	SDG&E	IEPA claims that	We reject this

⁷⁵ *Id.*, at 80.

<p>at 14</p>		<p>SDG&E doesn't provide a 3rd party sales provision in its PPA, as the CPUC ordered in D.15-12-025⁷⁶SDG&E asked for re-hearing on this point, but that request was denied in D.16-05-054. Thus, IEPA claims that SDG&E's Draft Plan fails to comply with the Commission's order in D.15-12-025 and D.16-05-054.</p>	<p>comment and find SCE's existing means to be sufficient for use in SDG&E's PPAs. D.16-05-054, Ordering Paragraph 5, orders a new Conclusion of Law to D.15-12-025 which allows generators to sell excess generation to 3rd parties. Language was added to the decision to "direct SDG&E to modify its PPAs to expressly allow generators to sell excess energy and associated RECs to third parties."⁷⁷</p> <p>SCE's means for dealing with excess generation</p>
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⁷⁶ D.15-12-025, Ordering Paragraph 7(6).

⁷⁷ D.15-12-025 at 94.

			was adopted in D.14-11-024. ⁷⁸ SDG&E amended its pro forma agreement to reflect these CPUC-approved changes. ⁷⁹
IEPA Comments at 18-19.	SDG&E	IEPA comments that SDG&E's Long-Term Model PPA appears to only contemplate projects with Full Capacity Deliverability Status (FCDS), which would appear to send a market signal that Energy-Only (EO) projects won't be considered. IEP recommends SDG&E's Model PPA be modified to clarify which role, if any, EO projects can play in an RPS solicitation.	We reject this comment. Deliverability status is being addressed in the LCBF Reform track in this proceeding. A requirement for FCDS was previously denied in D.11-04-030 (at 20), which clearly allows EO projects to be considered in RPS solicitations.
IEPA Comments at 5; LSA Comments at 3; CalWEA Reply Comments at 3.	PG&E, SCE, and SDG&E	IEPA, LSA and CalWEA argue that the IOUs should be required to excel and exceed SB 350's targets to take advantage of	As argued by ORA (Reply Comments at 2), SCE (Reply Comments at 3), and PG&E (Reply

⁷⁸ D.14-11-042 at 35-38.

⁷⁹ SDG&E Draft 2016 Renewables Portfolio Standard Procurement Plan (Appendices 6, 7, and 11.A).

		<p>current economic conditions. Specifically, these parties argue that delaying RPS procurement risks higher ratepayer costs as tax credits diminish over time. IEPA's analysis (using RPS Calculator v.6.2) demonstrates that the reduction in federal tax incentives between 2019-2022 increases the levelized costs for solar projects by 25% and wind projects by 13%.</p> <p>In addition, CalWEA argues that the ability to obtain federal tax benefits will greatly improve the economic competitiveness of wind repowers for qualifying facility contracts that are about to expire.</p>	<p>Comments at 4), the utilities have already established margins of procurement, without the use of bank, and each are in a position to exceed their RPS procurement requirements. Given this, along with the uncertainty associated with long-term market conditions and future load, we will not require the IOUs to increase their procurement obligations beyond the minimum targets established by statute at this time.</p>
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<p>Joint Utilities (SDG&E, PG&E, and SCE) Comments at 1-2</p>	<p>ESPs/CCAs</p>	<p>The Joint Utilities comment that the modifications to law enacted by SB 350 require all retail sellers to prepare and submit RPS Plans that address the requirements in PU Code 399.13(a)(1) and also require CCAs to participate in the RPS program subject to the same terms and conditions applicable to electrical corporations.⁸⁰⁸¹</p> <p>Specifically, the Joint Utilities claim that this requires all retail sellers to file solicitation documentation (as required by 399.13(a)(5) and cost quantification tables.</p> <p>They note that the CPUC doesn't approve solicitation documentation, but assert that this documentation still</p>	<p>As noted by AReM (Reply Comments at 2), the Commission has previously determined that ESPs and CCAs should not be required to follow the exact same steps for RPS implementation purposes as the utilities that are fully regulated by the CPUC (D.05-11-025, pp. 12-13). Further, the Commission has no responsibility for the price reasonableness of ESP procurement, and to regulatory over ESP rates (D.11-01-026, pp. 22-23).</p> <p>Therefore, we will not require CCAs and ESPs to file the</p>
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⁸⁰ 399.12(j)(2)

⁸¹ 399.12(j)(3)

		needs to be filed.	solicitation and cost quantification tables, but they are required to include in their RPS procurement plans the remaining requirements of Section 399.13(a)(5).
LSA at 3	PG&E and SDG&E	LSA comments that uncertainty surrounding near-term procurement opportunities is confounded by PG&E's Petition to Modify D.14-11-042 regarding its remaining PV Program requirements and SDG&E's stated intent to request modification of RAM Resolution E-4783. Both requests for modification are still pending at the CPUC.	This issue should be resolved by the decision on the pending Petitions to Modify.
LSA Comments at 5-6	SCE	LSA claims that shorter term contracts (such as the 10yr max contracts requested by SCE) might be more expensive than longer-term contracts and act to constrain the market.	While we acknowledge LSA's concern, this decision will accept SCE's proposal to require that sellers propose at least one offer with a term

			length of 10 years or less for each project.
ORA Comments at 3-4	SCE	ORA states that SCE shouldn't be allowed to count procurement done via its Preferred Resources Pilot (PRP) towards RPS goals. ORA states that the PRP hasn't been publicly vetted, and that SCE stated it has no intention of submitting the PRP program for CPUC approval.	This decision rejects ORA's comment. All RPS-eligible procurement may count towards RPS goals, regardless of means of procurement as long as it is consistent with the Commissions procurement and compliance rules.
Joint Parties (CBEA, CalWEA, Calpine, the Geothermal Association, and Ormat) Comments at 3	CPUC & LSEs	Joint Parties urge the CPUC to take the following actions: <ul style="list-style-type: none"> • Ensure that curtailment costs are appropriately factored into LCBF energy valuations; • Require the IOUs to use their economic curtailment rights to avoid negative pricing and to pay for CAISO-directed reliability-related generation reductions due to over-generation conditions; • In the event that curtailment is not 	This decision defers to the LCBF reform track established by ALJ Simon's June 22, 2016 Ruling in R.15-02-020 for handling LCBF reform-related issues.

		<p>managed economically by other Commission jurisdictional LSEs such that the IOUs are instructed to undertake certain types of procurement to manage over-generation-related reliability-related curtailments, allocate the costs of such procurement to all LSEs; and</p> <ul style="list-style-type: none"> · If necessary, delay the 2016 RFO until curtailment issues can be addressed in the LCBF Reform track. 	
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11. Conclusion Regarding the Investor-Owned Utilities’ 2016 Procurement Plans

11.1. PG&E’s 2016 RPS Plans

We find that PG&E’s 2016 RPS Plan satisfies the specific requirement for the 2016 RPS Procurement Plans that were set forth in the ACR dated May 17, 2016, and PG&E’s evaluation of its current RPS procurement needs relative to its request not to hold a 2016 solicitation to be reasonable. Should PG&E determine that an RPS solicitation or bilateral contracts are needed during the time period covered by the 2016 solicitation cycle, PG&E is directed to first seek Commission permission in a manner consistent with the Commission’s Rules of Practice and Procedure. The authorization granted in this decision solely exempts PG&E from the annual solicitation requirement for the year of 2016.

Also, we find PG&E's proposed methods for incorporating effects on Workforce Development and Disadvantaged Communities in its Least-Cost, Best-Fit criteria to be reasonable.

11.2. SCE's 2016 RPS Plans

We find that SCE's 2016 RPS Plan satisfies the specific requirements for the 2016 RPS Procurement Plans that were set forth in the ACR dated May 17, 2016. However, we are troubled with SCE's request "to hold open the possibility of conducting a targeted 2016 RPS solicitation that would include both a Community Renewables solicitation and a limited solicitation to purchase renewable energy." Solicitations follow a tight schedule and we are concerned that SCE's attempt to hedge its bets could be disruptive to any attempt to complete its solicitation efforts in the event it elects to change its mind. Thus, we will treat SCE's request as a decision not to hold a 2016 solicitation. Should SCE determine that an RPS solicitation or bilateral contracts are needed during the time period covered by the 2016 solicitation cycle, SCE is directed to first seek Commission permission in a manner consistent with the Commission's Rules of Practice and Procedure.

Also, we find SCE's proposed methods for incorporating effects on Workforce Development and Disadvantaged Communities in its Least-Cost, Best-Fit criteria to be reasonable.

Lastly, we find it reasonable for SCE to not require projects in the Western LA Basin and the Goleta area, to not have a Phase II Interconnection Study because of the critical procurement need for local reliability resources

11.3. SDG&E's 2016 RPS Plan

We find that SDG&E's 2016 RPS Plan satisfies the specific requirement for 2016 RPS Plans that were set forth in the ACR dated May 17, 2016, and that

SDG&E's evaluation of its current RPS procurement needs relative to its request not to hold a 2016 solicitation to be reasonable. Should SDG&E determine that an RPS solicitation or bilateral contracts are needed during the time period covered by the 2016 solicitation cycle, SDG&E is directed to first seek Commission permission in a manner consistent with the Commission's Rules of Practice and Procedure. The authorization granted in this decision solely exempts SDG&E from the annual solicitation requirement for the year of 2016.

Lastly, we find that SDG&E's explanation of the treatment of Workforce Development and Disadvantaged Communities in its Least-Cost Best-Fit methodology lacks sufficient detail. The Commission asks that SDG&E include more information on the treatment of Workforce Development and Disadvantaged Communities in its Final RPS Procurement Plan

12. Categorization and Need for Hearing

This proposed decision confirms the categorization of this proceeding as ratesetting. This proposed decision modifies the earlier determination that hearings were needed.

13. Comments on Proposed Decision

The proposed decision of ALJs Mason and Simon in this matter was mailed to the parties in accordance with Pub. Util. Code § 311. Opening comments were received on _____ from _____. Reply comments were received on _____ from _____.

14. Assignment of Proceeding

Carla J. Peterman is the assigned Commissioner and Anne E. Simon and Robert M. Mason III are the co-assigned ALJs in this proceeding.

Findings of Fact

1. All retail sellers filing 2016 RPS Procurement Plans incorporated a section on safety considerations regarding the procurement of electricity in their RPS annual procurement plan filing.

2. The IOUs' 2016 RPS Plans do not seek authorization for renewable procurement in excess of either the current RPS Program's 33% requirement, or the SB 350's 50% RPS target.

3. All ESPs that were required to file a RPS in 2016 complied.

4. Bear Valley Electric Service (BVES) and as Liberty Utilities, LLC submitted RPS Procurement Plans providing the information required in Sections 6.1-6.8 and 6.12-6.14 of the May 17, 2016 Assigned Commissioner Ruling.

5. The TOD factor of 1.0 was deferred to the LCBF Reform in D.14-11-042 (at 42) and D.15-12-025 (at 93).

6. By keeping the documents related to the solicitation current, SDG&E will promote market transparency even though it will not hold a 2016 solicitation.

7. PG&E and SDG&E request not to hold a solicitation in 2016.

8. SCE has proposed to hold open the possibility of conducting a targeted 2016 RPS solicitation that would include both a Community Renewables solicitation and a limited solicitation to purchase renewable energy.

9. Occurrences of negative locational marginal pricing are increasing.

10. The IOUs are working to minimize or avoid the need for curtailment.

11. Increases in intermittent renewable generation may require the grid system to be more operationally flexible to ensure adequate system reliability.

12. All RPS-eligible facilities procurement may count towards RPS goals, regardless of means of procurement as long as it is consistent with the Commissions procurement and compliance rules.

13. It is reasonable to not require CCAs and ESPs to file the solicitation documentation and cost quantification tables in their RPS Procurement Plans.

Conclusions of Law

1. Any retail sellers whose draft procurement plans do not include an assumption that the procurement quantity requirement will be at least 50% of retail sales beginning in 2031 should revise their plans to include that assumption.

2. The 2016 draft RPS Procurement Plans, as updated or amended, are acceptable in terms of the information provided on safety considerations.

3. It is reasonable to authorize PG&E to update its TOD factors.

4. PG&E's and SCE's proposed methods for incorporating effects on Workforce Development and Disadvantaged Communities in its Least-Cost, Best-Fit criteria are reasonable.

5. SDG&E's explanation of the treatment of Workforce Development and Disadvantaged Communities in its Least-Cost Best-Fit methodology requires further elaboration.

6. Each utility remains responsible for meeting its RPS Program procurement requirements implemented in D.11-12-020, as well as the updated 50% by 2030 RPS target established by SB 350.

7. Based on PG&E's and SDG&E's current stated compliance with RPS procurement, it is reasonable to approve of PG&E's and SDG&E's requests not to hold a 2016 solicitation.

8. It is reasonable for SCE to not require projects in the Western LA Basin and the Goleta area to have a Phase II Interconnection Study because of the critical procurement need for local reliability resources.

9. All motions for confidential treatment should be granted.

O R D E R**IT IS ORDERED** that:

1. Pursuant to the authority provided in Pub. Util. Code § 399.13(a)(1), the draft 2016 Renewables Portfolio Standard Procurement Plans, including the related Solicitation Protocols, filed by Pacific Gas and Electric Company, Southern California Edison Company, and San Diego Gas & Electric Company are accepted.

2. Pacific Gas and Electric Company (PG&E), Southern California Edison Company (SCE), and San Diego Gas & Electric Company (SDG&E) shall file final Renewables Portfolio Standard (RPS) Procurement Plans with the Commission within 30 days of the mailing date of this decision.

3. Pursuant to Public Utilities Code Section 365.1(c)(1), the 2016 Renewables Portfolio Standard Procurement Plans filed by the following electric service providers are accepted and deemed final: Noble Americas Energy Solutions LLC, Commerce Energy, Inc., Liberty Power Holdings LLC, Constellation NewEnergy, Inc., Palmco Power CA, LLC, Calpine PowerAmerica-CA, LLC, Commercial Energy of California, 3 Phases Renewables, Inc., EDF Industrial Power Services (CA), LLC, Tiger Natural Gas, Inc., The Regents of the University of California, Shell Energy North America (US), LP, Pilot Power Group, Inc., Direct Energy Business, LLC, EnerCal USA, LCC (dba Yep Energy), Agera Energy, LLC, Tenaska Power Services Co., Tenaska California Energy Marketing, LLC

4. Pursuant to Public Utilities Code Section 365.1(c)(1), the 2016 Renewables Portfolio Standard Procurement Plans filed by the following community choice aggregators are accepted and deemed final: Marin Clean Energy, Sonoma Clean

Power Authority, Peninsula Clean Energy, CleanPowerSF, and Lancaster Choice energy.

5. PacifiCorp's 2016 Off-Year Supplement to its 2015 Integrated Resource Plan is accepted and is deemed final.

6. San Diego Gas & Electric Company (SDG&E) is authorized to not hold a 2016 Renewables Portfolio Standard (RPS) solicitation and shall indicate in its Final 2016 RPS Procurement Plans to be filed pursuant to the schedule adopted herein that it will seek permission from the Commission to procure any amounts, other than amounts separately mandated by the Commission (*i.e.*, Feed-In Tariff and Renewable Auction Mechanism, during the time period covered by the 2016 solicitation cycle.) SDG&E shall file a final 2016 RPS Procurement Plan with updated solicitation material even though no solicitation is scheduled for 2016. This authorization to not hold a solicitation only applies for one year, 2016.

7. Pacific Gas and Electric Company (PG&E) is authorized to not hold a 2016 Renewables Portfolio Standard (RPS) solicitation and shall indicate in its Final 2016 RPS Procurement Plans to be filed pursuant to the schedule adopted herein that it will seek permission from the Commission to procure any amounts, other than amounts separately mandated by the Commission (*i.e.*, Feed-In Tariff and Renewable Auction Mechanism, during the time period covered by the 2016 solicitation cycle.) This authorization to not hold a solicitation only applies for one year, 2016.

8. Southern California Edison (SCE) is authorized to not hold a 2016 Renewables Portfolio Standard (RPS) solicitation and shall indicate in its Final 2016 RPS Procurement Plans to be filed pursuant to the schedule adopted herein that it will seek permission from the Commission to procure any amounts, other than amounts separately mandated by the Commission (*i.e.*, Feed-In Tariff and

Renewable Auction Mechanism, during the time period covered by the 2016 solicitation cycle.) This authorization to not hold a solicitation only applies for one year, 2016.

9. In the event Southern California Edison Company (SCE) decides to hold a 2016 Renewables Portfolio Standard solicitation, SCE shall first seek permission from this Commission in a manner consistent with the Commission's Rules of Practice and Procedure.

10. Pacific Gas and Electric Company (PG&E), Southern California Edison Company (SCE), and San Diego Gas & Electric Company (SDG&E) shall continue to incorporate and describe how expected economic curtailment affects their Renewables Portfolio Standard (RPS) procurement in future RPS procurement plans.

11. SDG&E shall file a detailed description of how it plans to account for the effects of Workforce Development and Disadvantaged Communities in its Final RPS Procurement Plan.

12. The Energy Division Director is authorized, after notice to the service list of this proceeding, to change the schedule adopted in Ordering Paragraph 11 above as appropriate or as necessary for the efficient administration of the 2016 Renewables Portfolio Standard solicitation process.

13. All motions for confidentiality as to the 2016 Renewable Portfolio Standard Plans are granted.

14. Southern California Edison Company's Motion to Update its 2016 Renewables Portfolio Standard Procurement Plan is granted.

15. Rulemaking 15-02-020 remains open.

This order is effective today.

Dated _____, at San Francisco, California.

**2016 RPS Plans
Acronym List**

Acronym	Term
2016 RPS Plan	2016 Draft Renewable Energy Procurement Plan
AB	Assembly Bill
ACR	<i>Assigned Commissioner's Revised Ruling Identifying Issues and Schedule of Review of 2015 Renewables Portfolio Standard Procurement Plans issued May 28, 2015</i>
ADS	Automated Dispatch System
AL	Advice Letter
ALJ	Administrative Law Judge
API	Application Programming Interface
APSA	Approved Project Sponsor Agreement
ASC	Accounting Standards Codification
BioMAT	Bioenergy Market Adjusting Tariff
BioRAM	Tree Mortality RAM
BNI	Binding Notice of Intent
BPP	Bundled Procurement Plan
CAISO	California Independent System Operator
CAM	Cost Allocation Mechanism
CARB	California Air Resources Board
CBA	California Balancing Authority (SDG&E); California Balancing Authority Area (SCE)
CCA	Community Choice Aggregator
CEC	California Energy Commission

COD	Commercial Operation Date
CP	Compliance Period
CPCN	Certificate of Public Convenience and Necessity
CPI	Consumer Price Index
CPM	Capacity Procurement Mechanism
CPUC	California Public Utilities Commission
CR	Community Renewables
CRE	Customer Renewable Energy
D.	Decision
DA	Direct Access
DBE	Diverse Business Enterprise
DER	Distributed Energy Resource
DG	Distributed Generation
DGD	Distributed Generation Deliverability
DLAP	Default Load Aggregation Point
DRA	Division of Ratepayer Advocates
ECR	Enhanced Community Renewables
ED	Energy Division
EE	Energy Efficiency
EO	Energy Only
EPC	Engineering, Procurement, and Construction
ERR	Eligible Renewable Resource
ERRA	Energy Resource Recovery Account
ESP	Electric Service Provider
FCDS	Full Capacity Deliverability Status

FERC	Federal Energy Regulatory Commission
FFO	Funds From Operations
FIT	Feed-In Tariff
GCOD	Guaranteed Commercial Operation Date
GHG	Greenhouse Gas
GIDAP	Generator Interconnection and Deliverability Allocation Procedures
GO	General Order
GRC	General Rate Case
GT	Green Tariff
GTSR	Green Tariff Shared Renewables Program
GWh	Gigawatt-hours
HHZ	High Hazard Zone
HVDC	High Voltage Direct Current
ID&WA	Irrigation District and Water Agency
IE	Independent Evaluator
IID	Imperial Irrigation District
IOU	Investor-Owned Utility
IPP	Independent Power Producer
IRP	Integrated Resource Plan
ITC	Investment Tax Credit
IV	Imperial Valley
JRP	Joint Reliability Plan
kWh	Kilowatt-hour
LCBF	Least-Cost Best-Fit

LCR	Local Capacity Requirement
LSE	Load-Serving Entity
LTPP	Long-Term Procurement Plan
MACRS	Modified Accelerated Cost Recovery System
MVI	Motor Vehicle Incident
MW	Megawatt
NBC	Non-Bypassable Charge
NERC	North American Electric Reliability Corporation
NMV	Net Market Value
NP15 Hub	North of Path 15 Hub
NPV	Net Present Value
NQC	Net Qualifying Capacity
OSHA	Occupational Safety and Health Administration
OTC	Once-Through Cooling
PAV	Portfolio Adjusted Value
PCC	Portfolio Content Categories
PCIA	Power Charge Indifference Adjustment
PD	Proposed Decision
PEL	Procurement Expenditure Limitation
PFM	Petition for Modification
PG&E	Pacific Gas and Electric Company
PPA	Power Purchase Agreement
PPP	Public Purpose Program
PPTA	Power Purchase and Tolling Agreement

PQR	Procurement Quantity Requirement
PRG	Procurement Review Group
PRP	Preferred Resources Pilot
PTC	Production Tax Credit
PTO	Participating Transmission Owner
PV	Photovoltaic
QF	Qualifying Facility
R.	Rulemaking
RA	Resource Adequacy
RAM	Renewable Auction Mechanism
REC	Renewable Energy Credit
ReMAT	Renewable Market Adjusting Tariff
RETI	Renewable Energy Transmission Initiative
RFO	Request for Offers
RFP	Request for Proposal
RNS	Renewable Net Short
RNS Ruling	<i>Administrative Law Judge's Ruling on Renewable Net Short issued May 21, 2014</i>
RPS	Renewables Portfolio Standard
RPS Guidebook	CEC's RPS Renewables Portfolio Standard Eligibility Commission Guidebook
RTM	Real-Time Markets
Ruling	<i>Assigned Commissioner and Assigned Administrative Law Judge's Ruling Identifying Issues and Schedule of Review for 2016 Renewables Portfolio Standard Procurement Plans issued May 17, 2016</i>
SANS	Stochastically-Adjusted Net Short

SB	Senate Bill
SCE	Southern California Edison Company
SDG&E	San Diego Gas & Electric Company
SONGS	San Onofre Nuclear Generating Station
SONS	Stochastically-Optimized Net Short
SPVP	Solar Photovoltaic Program
SRAC	Short Run Avoided Cost
SWPL	Southwest Powerlink
TOD	Time Of Delivery/Day
TPP	Transmission Planning Process
TRTP	Tehachapi Renewable Transmission Project
TURN	The Utility Reform Network
TWRA	Tehachapi Wind Resource Area
UOG	Utility-Owned Generation
VAR	Volt Ampere Reactive
VIE	Variable Interest Entities
VMOP	Voluntary Margin of Procurement (PG&E); Voluntary Margin of Over-Procurement (SDG&E and SCE)
WATER	Water Agency Tariff for Eligible Renewables
WECC	Western Electric Coordinating Council
WOD	West of Devers
WREGIS	Western Renewable Energy Generation Information System