

PUBLIC UTILITIES COMMISSION

505 VAN NESS AVENUE
SAN FRANCISCO, CA 94102-3298



October 15, 2018

Advice Letter 5270-E

Erik Jacobson
Director, Regulatory Relations
Pacific Gas and Electric Company
77 Beale Street, Mail Code B13U
P.O. Box 770000
San Francisco, CA 94177

SUBJECT: Amended and Restated Power Purchase Agreement for Procurement of Eligible Renewable Energy Resources between Shiloh Wind Project 2, LLC and Pacific Gas & Electric Company

Dear Mr. Jacobson:

Advice Letter 5270-E is effective as of September 13, 2018 per Resolution E-4945 Ordering Paragraph.

Sincerely,

A handwritten signature in cursive script that reads "Edward Randolph".

Edward Randolph
Director, Energy Division

April 9, 2018

Advice 5270-E

(Pacific Gas and Electric Company ID U39 E)

Public Utilities Commission of the State of California

Subject: Amended and Restated Power Purchase Agreement for Procurement of Eligible Renewable Energy Resources between Shiloh Wind Project 2, LLC and Pacific Gas & Electric Company

I. Introduction**A. Purpose of the Advice Letter**

Pacific Gas and Electric Company (“PG&E”) seeks California Public Utilities Commission (“Commission” or “CPUC”) approval of an Amended and Restated Power Purchase Agreement (“Amended and Restated PPA”) between PG&E and Shiloh Wind Project 2, LLC (“Shiloh II” or “Project”). The Amended and Restated PPA amends an existing, long-term Renewables Portfolio Standard (“RPS”) Power Purchase Agreement (the “Original PPA”) between the parties. The Amended and Restated PPA will enable the Project to fully participate in the California Independent System Operator (“CAISO”) market and provide PG&E with rights to curtail the resource when necessary.

One of the significant challenges facing the California energy grid and PG&E’s customers is over-generation due to the substantial increase in renewable resources, and corresponding negative energy prices.¹ When resources, including renewable resources, can be curtailed through the use of economic bids, the CAISO and the market it manages benefit from a more orderly and rational reduction of generation output when necessary. The Amended and Restated PPA proposed in this Advice Letter will provide PG&E with the right to offer curtailment of this resource into the CAISO market when production would be uneconomic. Because this amendment provides an option to manage the Project’s generation output, and thereby is a benefit to customers and the market as a whole, PG&E requests that the Commission issue a resolution no later than July 2018 approving the Amended and Restated PPA in its entirety and containing the findings requested in Section VI below.

¹ PG&E Final 2017 RPS Procurement Plan, filed Jan. 17, 2018, pp.18, 19, 58, 65, 67; see also, California Independent System Operator, “What the Duck Curve Tells Us about Managing a Green Grid,” 2016 (available at: http://www.caiso.com/Documents/FlexibleResourcesHelpRenewables_FastFacts.pdf).

B. Background and Summary of Amended and Restated PPA

The Original PPA resulted from bilateral negotiations that commenced during the pendency of PG&E's 2006 RPS Solicitation. The agreement was submitted for approval to the Commission in October 2007 in Advice Letter 3143-E and approved by the Commission in Resolution E-4161.

In the spring of 2014, PG&E and Shiloh II initiated bilateral negotiations to amend the Original PPA to address market structure changes due to the CAISO's implementation of the Federal Energy Regulatory Commission's ("FERC") Order 764. Following negotiations, the parties agreed to amend and, for purposes of clarity, to restate the agreement. The resulting Amended and Restated PPA, executed on January 9, 2018 and attached as Confidential Appendix D, ensures the Project's ability to participate in the evolving CAISO market, in large part by PG&E becoming the Scheduling Coordinator ("SC") in return for increased operational flexibility through curtailment rights and other terms benefitting PG&E's customers. The specific terms and conditions of the Amended and Restated PPA are described in detail in Confidential Appendices A and C.

Confidential Appendix E provides a comparison of the Amended and Restated PPA against the Original PPA, and Confidential Appendix F provides a comparison of the Amended and Restated PPA against PG&E's 2014 RPS Form PPA.

C. Subject of the Advice Letter

1. Project name

Shiloh Wind Project 2, LLC

2. Technology (including level of maturity)

The facility consists of 75 model MM92 wind turbines, each rated at 2 MW, made by REpower Systems SE (currently known as "Senvion").

3. General Location and Interconnection Point

The Project is located near Birds Landing in Solano County, California and is interconnected with the CAISO at PG&E's Birds Landing Switching Station.

4. Owner(s) / Developer(s)

Shiloh Wind Project 2, LLC, a Delaware limited liability company, is the owner and operator of the Project.

5. Project background, e.g., expiring QF contract, phased project, previous power purchase agreement, contract amendment

The Project included in the proposed Amended and Restated PPA is an existing operational facility with an existing operational PPA with PG&E.

6. Source of agreement, i.e., RPS solicitation year or bilateral negotiation

The Amended and Restated PPA resulted from bilateral negotiations between PG&E and Shiloh II.

7. If an amendment, describe contract terms being amended and reason for amendment

The amendment to the Original PPA is necessary to address market structure changes due to the CAISO's implementation of the FERC's Order 764, and to allow PG&E to ensure that the Project will be able to fully participate in the CAISO market going forward. The key changes to the Original PPA required to achieve these objectives were for PG&E to become the SC and the incorporation of curtailment rights in the Amended and Restated PPA.

Following negotiations, the parties agreed to amend and, for purposes of clarity, to restate the entire agreement. In restating the Original PPA, the Parties also agreed to generally update the Original PPA to more fully reflect PG&E's most recent RPS Form PPA as to the form and language of the document. However, aside from changes regarding SC and curtailment, the Original PPA's material terms and conditions were retained in order to maintain the Original PPA's benefits and costs to each party. The substantive revisions and additions to the agreement relate primarily to the following concepts, as more specifically discussed in Confidential Appendix C:

- Scheduling, economic dispatch and curtailment requirements;
- Seller Equipment necessary for curtailments;
- Schedule deviations;
- Meteorological requirements; and
- Western Renewable Energy Generation Information System compliance requirements.

A detailed explanation of the terms of the Amended and Restated PPA is provided in Confidential Appendix C.

D. General Project Description

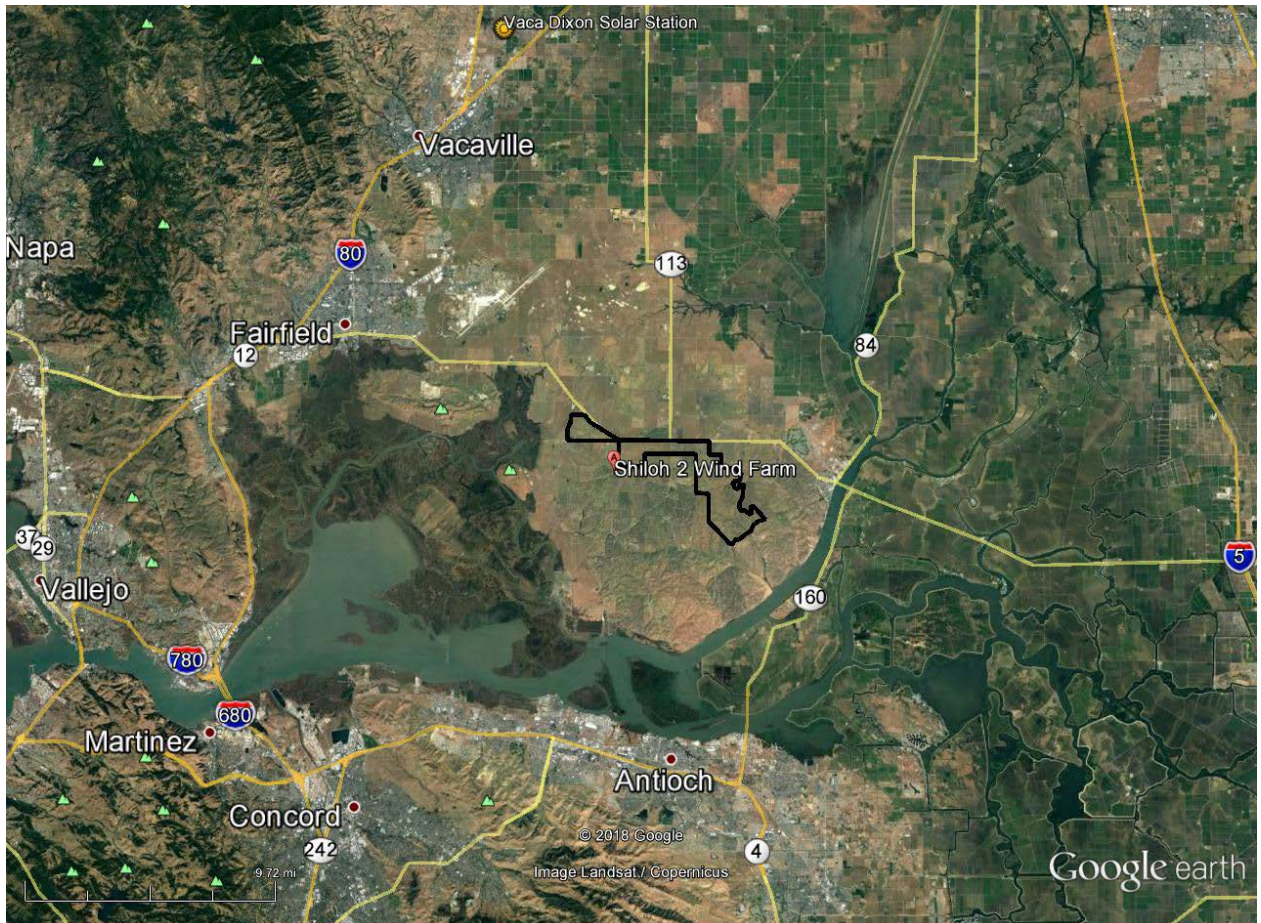
The Project is described generally in Section I.C, above. The transaction terms are:

Project Name (s)	Shiloh II
Technology	Wind
Capacity	150 MW
Capacity Factor	38.7%
Fuel Provider	N/A
Expected Generation (GWh/Year)	509 GWh (Contract Quantity)
Initial Commercial Operation Date	2/1/2009
Date Contract Delivery Term Begins	After CPUC Approval and Buyer becomes SC
Delivery Term (Years)	The remainder of the term of the Original PPA, which was for 20 years, from 2/1/2009 to 1/31/2029. The Amended and Restated PPA takes effect after satisfying certain conditions listed in section 3.1(c).
Vintage	2006
Location (city and state)	Birds Landing, Solano County, CA
Control Area (e.g., CAISO, BPA)	CAISO
Nearest Competitive Renewable Energy Zone (CREZ) as identified by the Renewable Energy Transmission Initiative (RETI) ²	CREZ 8 Solano
Type of cooling, if applicable	N/A

E. Project Location

1. Provide a general map of the generation facility's location.

² Information about RETI is available at: <http://www.energy.ca.gov/reti/>.



F. Confidentiality

In support of this Advice Letter, PG&E has provided the confidential information listed below. This information includes the Amended and Restated PPA and other information that more specifically describes the rights and obligations of the parties involved. This information is being submitted in the manner directed by D.08-04-023 and the August 22, 2006, Administrative Law Judge's Ruling Clarifying Interim Procedures for Complying with D.06-06-066 to demonstrate the confidentiality of the material and to invoke the protection of confidential utility information provided under Public Utilities Code section 454.5(g) or the Investor Owned Utility Matrix, Appendix 1 of D.06-06-066 and Appendix C of D.08-04-023. A separate Declaration Seeking Confidential Treatment is being filed concurrently with this Advice Letter.

Confidential Attachments:

- Appendix A: Consistency with Commission Decisions and Rules and Project Development Status
- Appendix B1: Independent Evaluator Report (Confidential)
- Appendix C: Contract Summary: Amended and Restated PPA
- Appendix D: Amended and Restated PPA
- Appendix E: Comparison of Amended and Restated PPA to Original PPA
- Appendix F: Comparison of Amended and Restated PPA to PG&E's 2014 RPS Form PPA
- Appendix G1: Renewable Net Short Calculations (Confidential)

Public Attachments:

- Appendix B2: Independent Evaluator Report (Public)
- Appendix G2: Renewable Net Short Calculations (Public)

II. Consistency with Commission Decisions**A. RPS Procurement Plan**

Given that the Amended and Restated PPA is not new procurement, but rather amends an existing PPA to ensure the Project's ability to participate in the CAISO market, increase value to PG&E's customers through curtailment rights, and update the contract to more fully reflect PG&E's more current form PPA, the original analysis of consistency with PG&E's RPS Plan set forth in Advice Letter 3143-E still applies, which sought and received approval of the Original PPA. The Amended and Restated PPA is also consistent with PG&E's Final 2017 RPS Procurement Plan, approved by the Commission in D.17-12-007, in which PG&E states its intent to "continue [] to review its existing portfolio of RPS contracts to determine if additional economic curtailment flexibility may be available to help address the increase in oversupply events."³

PG&E is well-positioned to meet its RPS compliance requirements and does not have an incremental need for RPS resources until after 2030. The Amended and Restated PPA will not increase the size of PG&E's bank of surplus RPS procurement since it does not increase deliveries from the Project and the Original PPA would continue in effect if the Amended and Restated PPA was not completed. Please see Appendix G2 and Confidential Appendix G1 for PG&E's renewable net short ("RNS") calculations.

B. Bilateral contracting – if applicable**1. Discuss compliance with D.06-10-019 and D.09-06-050.**

To address the issue of bilateral contracting, the Commission developed guidelines pursuant to which utilities may enter into bilateral RPS contracts. In D.06-10-019, the Commission held that

³ PG&E's Final 2017 RPS Plan, p. 68.

bilateral contracts were permissible provided that they were at least one month in duration, reasonable, and submitted for Commission approval via the advice letter process. In 2009, the Commission issued D.09-06-050 establishing price benchmarks and contract review processes for short-term and bilateral RPS contracts. D.09-06-050 provides that bilateral contracts should be reviewed using the same standards as contracts resulting from RPS solicitations.

The Amended and Restated PPA resulted from bilateral negotiations and satisfies the requirements of D.06-10-019 and D.09-06-050. The Amended and Restated PPA is being submitted for approval by this Advice Letter. The term is at least one month in duration, and the Amended and Restated PPA is reasonable when considered against the uniform standards of review for RPS transactions.

PG&E negotiated and executed the Amended and Restated PPA primarily to assist the State in addressing grid stability concerns. The Amended and Restated PPA does not change the contract price or contract quantity (except as affected by curtailments) and the parties approached the negotiation with the understanding that while an amendment may, and ultimately did, provide additional value to both PG&E's customers and Shiloh II, the Original PPA remained viable without the amendment. Accordingly, PG&E did not require the amendment to be bid into an RPS solicitation, nor are the bids from recent RPS solicitations appropriate benchmarks for comparison of the Amended and Restated PPA. Rather, the Amended and Restated PPA should be compared against the Original PPA.⁴ As noted above, and shown in Confidential Appendix A, the Amended and Restated PPA provides additional value to PG&E's customers and should be approved on that basis.

2. Specify the procurement and/or portfolio needs necessitating the utility to procure bilaterally as opposed to a solicitation.

PG&E believed that bilateral negotiations were a more direct and effective approach than solicitations in obtaining amendments to a specific group of PPAs to provide increased curtailment capabilities for the benefit of grid operations.

⁴ See Resolutions E-4873 and E-5163 (comparing amended RPS PPAs to their original PPAs when assessing cost reasonableness).

3. **Describe why the Project did not participate in the solicitation and why the benefits of the Project cannot be procured through a subsequent solicitation.**

Please see subsection 2, above.

C. Least-Cost, Best-Fit (LCBF) Methodology and Evaluation

1. **Briefly describe IOU's LCBF Methodology and how the Project compared relative to other offers available to the IOU at the time of evaluation.**

PG&E's most recently Commission-approved LCBF methodology is described in PG&E's 2014 RPS Solicitation protocol.⁵ In part, PG&E's LCBF methodology employs Commission-approved variables to determine the net market value ("NMV") of proposed procurement. Those factors are more fully described in Confidential Appendix A.

2. **Indicate when the IOU's Shortlist Report was approved by Energy Division.**

PG&E did not prepare a shortlist report because, as described in section II.B above, the negotiation was bilateral and not through a solicitation.

D. Compliance with Standard Terms and Conditions (STCs)

The Commission set forth standard terms and conditions to be incorporated into contracts for the purchase of electricity from eligible renewable energy resources in D.04-06-014 and D.07-02-011, as modified by D.07-05-057 and D.07-11-025. These terms and conditions were compiled and published in D.08-04-009. Additionally, the non-modifiable terms related to Green Attributes were finalized in D.08-08-028 and the non-modifiable terms related to RECs were finalized in D.10-03-021, as modified by D.11-01-025. In D.13-11-024, the existing Green Attribute non-modifiable terms were deemed outdated and replaced with a new STC 2 related to biomethane transactions, and that term is deemed modifiable. D.13-11-024 noted that the outdated non-modifiable Green Attribute terms could continue to be used in a PPA as long as they did not conflict with the new, modifiable STC 2. At this time, PG&E continues to include those old Green Attribute terms in its PPAs as long as there is no conflict with STC 2; however, they are no longer marked as either non-modifiable or modifiable.

⁵ PG&E 2014 RPS Plan, filed Dec. 23, 2014, Appendix H (2014 Solicitation Protocol), Attachment K (LCBF Methodology).

The non-modifiable standard terms and conditions in the Amended and Restated PPA conform exactly to the “non-modifiable” terms set forth in D.07-11-025 and D.10-03-021, as modified by D.11-01-025 and D.13-11-024. The non-modifiable and modifiable terms found in the Amended and Restated PPA are also highlighted in Confidential Appendix F.

E. Portfolio Content Category Claim and Upfront Showing (D.11-12-052, Ordering Paragraph 9)

Senate Bill 2 1X established three portfolio content categories that apply to RPS-eligible generation associated with RPS procurement contracts signed after June 1, 2010. D.11-12-052 requires the investor-owned utilities to make an upfront showing related to the categorization of each proposed RPS procurement transaction signed after June 1, 2010.⁶ The PPA for the Project was originally signed prior to June 1, 2010, and thus is exempt from the D.11-12-052 categorization requirements for new RPS procurement.⁷ The procurement associated with the Amended and Restated PPA counts in full toward PG&E’s RPS procurement requirements as long as it satisfies the following three statutory requirements:⁸

- (1) The renewable energy resource was eligible under the rules in place as of the date when the contract was executed.
- (2) For an electrical corporation, the contract has been approved by the commission, even if that approval occurs after June 1, 2010.
- (3) Any contract amendments or modifications occurring after June 1, 2010, do not increase the nameplate capacity or expected quantities of annual generation, or substitute a different renewable energy resource. The duration of the contract may be extended if the original contract specified a procurement commitment of 15 or more years.

The Original PPA was executed prior to June 1, 2010 and approved by the Commission, as noted above, and the renewable energy resource was eligible under the rules in place at the time of contract execution. Additionally, the Amended and Restated PPA does not increase the nameplate capacity or expected quantities of annual generation, and does not change the renewable energy resource or the contract duration. Thus, the Amended and Restated PPA is “grandfathered,” or “PCC 0,” and shall count in full toward PG&E’s RPS procurement requirements.

F. Long-term Contracting Requirement

⁶ D.11-12-052, p. 10.

⁷ *Id.* at pp. 62-63.

⁸ California Public Utilities Code Section 399.16(d).

Senate Bill 350 established a new long-term contracting requirement for procurement used for RPS compliance. Specifically, Public Utilities Code section 399.13(b) requires that beginning in January 2021 (or January 2017 for retail sellers, like PG&E, that elected early compliance),⁹ at least 65 percent of procurement counted toward the RPS procurement requirement of each compliance period must be from contracts of 10 years or more in duration or in ownership or ownership agreements for RPS resources. Procurement from RPS contracts signed prior to June 1, 2010 that meets the requirements set forth in California Public Utilities Code section 399.16(d) is counted as long-term for the purposes of SB 350's long-term contracting requirement.¹⁰

As discussed in Section II.E above, the Original PPA was signed prior to June 1, 2010 and the conditions set forth in 399.16(d) have been met. Therefore, procurement under the Amended and Restated PPA will be PCC 0 and therefore counted as long-term procurement with respect to Senate Bill 350's long-term contracting requirement.

G. Interim Emissions Performance Standard

In D.07-01-039, the Commission adopted a greenhouse gas Emissions Performance Standard (EPS) which is applicable to electricity contracts for baseload generation, as defined, having a delivery term of five years or more.

- 1. Explain whether or not the contract is subject to the EPS.**
- 2. If the contract is subject to the EPS, discuss how the contract is in compliance with D.07-01-039.**

A greenhouse gas Emissions Performance Standard ("EPS") was established by Senate Bill 1368 ("SB 1368"), which requires that the Commission consider emissions costs associated with new long-term (five years or greater) power contracts procured on behalf of California ratepayers.

To implement SB 1368, in D.07-01-039 the Commission adopted an EPS that applies to contracts for a term of five or more years for baseload generation with an annualized plant capacity factor of at least 60 percent. D.07-01-039 determined that certain renewable resources and technologies are pre-approved as EPS-compliant:

"Based on the record in this proceeding, it is reasonable to make an upfront determination that the following renewable resources and technologies are EPS-compliant:

⁹ D.17-06-026, p. 9 (footnote 13).

¹⁰ *Id.* at p. 12 (footnote 20).

- (a) Solar Thermal Electric (with up to 25% gas heat input)
- (b) Wind
- (c) Geothermal, with or without reinjection
- (d) Generating facilities (e.g., agricultural and wood waste, landfill gas) using biomass that would otherwise be disposed of utilizing open burning, forest accumulation, landfill (uncontrolled, gas collection with flare, gas collection with engine), spreading, or composting.”¹¹

The deliveries to PG&E under the Amended and Restated PPA are from a wind generating facility as identified in (b) above, and are therefore pre-approved as EPS-compliant. Notification of compliance with D.07-01-039 is provided through this Advice Letter, which has been served on the service list in the RPS rulemaking, R.15-02-020.

H. Procurement Review Group (PRG) Participation

1. List PRG participants (by organization/company).

PG&E's Procurement Review Group (“PRG”) includes representatives from: California Public Utilities Commission's Energy Division and Office of Ratepayer Advocates, Coalition of California Utility Employees (“CUE”), Coast Economic Consulting, The Utility Reform Network (“TURN”), Union of Concerned Scientists, and Woodruff Expert Services (representing TURN).

2. Describe the utility's consultation with the PRG, including when information about the contract was provided to the PRG, whether the information was provided in meetings or other correspondence, and the steps of the procurement process where the PRG was consulted.

The Amended and Restated PPA was presented to the PRG via e-mail on December 15, 2017. Additional information is provided in Confidential Appendix A.

I. Independent Evaluator (IE)

1. Provide name of IE

¹¹ See D.07-01-039, p. 18 and Conclusion of Law 35(c).

The Independent Evaluator (“IE”) is Lewis Hashimoto of Arroyo Seco Consulting.

2. Describe the oversight provided by the IE.

The IE reviewed and assessed PG&E’s negotiations of the Amended and Restated PPA to determine if they were conducted fairly. In his attached report, the IE concludes that the Amended and Restated PPA merits CPUC approval.

3. List when the IE made any findings to the Procurement Review Group regarding the applicable solicitation, the project/bid, and/or contract negotiations.

The IE did not present any findings to the PRG.

4. Insert the public version of the project-specific IE Report.

Please see Appendix B2 for the public version of the IE report.

III. Project Development Status

The Amended and Restated PPA is for an operational facility and thus does not present any project development risk.

IV. Contingencies and/or Milestones

This Amended and Restated PPA is contingent upon CPUC approval and the Buyer becoming the SC.

V. Safety Considerations

The Amended and Restated PPA’s safety provisions are consistent with those of the Original PPA.

VI. Request for Commission Approval

PG&E requests that the Commission issue a resolution no later than July 2018 that:

1. Approves the Amended and Restated PPA in its entirety, including payments to be made by PG&E pursuant to the Amended and Restated PPA, subject to the Commission’s review of PG&E’s administration of the Amended and Restated PPA.
2. Finds that any procurement pursuant to the Amended and Restated PPA is procurement from eligible renewable energy resources for purposes of determining PG&E’s compliance with any obligation that it may have to procure eligible renewable energy resources pursuant to the California RPS

- (Public Utilities Code Section 399.11 et seq.), D.11-12-020 and D.11-12-052, or other applicable law.
3. Finds that all procurement and administrative costs, as provided by Public Utilities Code section 399.13(g), associated with the Amended and Restated PPA shall be recovered in rates.
 4. Adopts the following finding of fact and conclusion of law in support of CPUC Approval:
 - a. The Amended and Restated PPA is consistent with PG&E's 2017 RPS procurement plan.
 - b. The terms of the Amended and Restated PPA, including the prices of delivered energy and deemed delivered energy, are reasonable.
 5. Adopts the following finding of fact and conclusion of law in support of cost recovery for the Amended and Restated PPA:
 - a. The utility's payments to Shiloh II under the Amended and Restated PPA shall be recovered through PG&E's Energy Resource Recovery Account.
 6. Adopts the following findings with respect to resource compliance with the EPS adopted in R.06-04-009:
 - a. The Amended and Restated PPA is pre-approved as meeting the EPS because it is for an existing wind facility covered by Conclusion of Law 35(d) of D.07-01-039.
 7. Adopts a finding of fact and conclusion of law that deliveries from the Amended and Restated PPA shall be categorized as grandfathered procurement pursuant to California Public Utilities Code Section 399.16(d), subject to the Commission's after-the-fact verification that all applicable criteria have been met.

Protests:

Anyone wishing to protest this filing may do so by letter sent via U.S. mail, facsimile or E-mail, no later than April 30, 2018, which is 21 days¹² after the date of this filing. Protests must be submitted to:

CPUC Energy Division
ED Tariff Unit

¹² The 20-day protest period concludes on a weekend. PG&E is hereby moving this date to the following business day.

505 Van Ness Avenue, 4th Floor
San Francisco, California 94102

Facsimile: (415) 703-2200
E-mail: EDTariffUnit@cpuc.ca.gov

Copies of protests also should be mailed to the attention of the Director, Energy Division, Room 4004, at the address shown above.

The protest shall also be sent to PG&E either via E-mail or U.S. mail (and by facsimile, if possible) at the address shown below on the same date it is mailed or delivered to the Commission:

Erik Jacobson
Director, Regulatory Relations
c/o Megan Lawson
Pacific Gas and Electric Company
77 Beale Street, Mail Code B13U
P.O. Box 770000
San Francisco, California 94177

Facsimile: (415) 973-3582
E-mail: PGETariffs@pge.com

Any person (including individuals, groups, or organizations) may protest or respond to an advice letter (General Order 96-B, Section 7.4). The protest shall contain the following information: specification of the advice letter protested; grounds for the protest; supporting factual information or legal argument; name, telephone number, postal address, and (where appropriate) e-mail address of the protestant; and statement that the protest was sent to the utility no later than the day on which the protest was submitted to the reviewing Industry Division (General Order 96-B, Section 3.11).

Effective Date:

PG&E requests that the Commission issue a resolution approving this Tier 3 advice filing no later than July 2018.

Notice:

In accordance with General Order 96-B, Section IV, a copy of this Advice Letter excluding the confidential appendices is being sent electronically and via U.S. mail to parties shown on the attached list and the service list for R.15-02-020. Non-market participants who are members of PG&E's Procurement Review Group and have signed appropriate Non-Disclosure Certificates will also receive the Advice Letter and accompanying confidential attachments by overnight mail. Address changes to the

General Order 96-B service list should be directed to PGETariffs@pge.com. For changes to any other service list, please contact the Commission's Process Office at (415) 703-2021 or at Process_Office@cpuc.ca.gov. Advice letter filings can also be accessed electronically at <http://www.pge.com/tariffs>.

/S/

Erik Jacobson
Director – Regulatory Relations

cc: Service List for R.15-02-020
Cheryl Lee, Energy Division

Limited Access to Confidential Material:

The portions of this Advice Letter marked Confidential Protected Material are submitted under the confidentiality protection of Section 583 and 454.5(g) of the Public Utilities Code. This material is protected from public disclosure because it consists of, among other items, the Amended and Restated PPA and analysis of the proposed RPS Amended and Restated PPA, which are protected pursuant to D.06-06-066 and D.08-04-023. A separate Declaration Seeking Confidential Treatment regarding the confidential information is filed concurrently herewith.

Confidential Attachments:

- Appendix A – Consistency with Commission Decisions and Rules and Project Development Status
- Appendix B1 – Independent Evaluator Report (Confidential)
- Appendix C – Contract Summary: Amended and Restated PPA
- Appendix D – Amended and Restated PPA
- Appendix E – Comparison of Amended and Restated PPA to Original PPA
- Appendix F – Comparison of Amended and Restated PPA to PG&E's 2014 RPS Form PPA
- Appendix G1 – Renewable Net Short Calculations (Confidential)

Public Attachments

- Appendix B2 – Independent Evaluator Report (Public)
- Appendix G2 – Renewable Net Short Calculations (Public)

CALIFORNIA PUBLIC UTILITIES COMMISSION

ADVICE LETTER SUBMITTAL SUMMARY ENERGY UTILITY

MUST BE COMPLETED BY UTILITY (Attach additional pages as needed)

Company name/CPUC Utility No. **Pacific Gas and Electric Company (ID U39 E)**

Utility type:

ELC GAS
 PLC HEAT WATER

Contact Person: Kingsley Cheng

Phone #: (415) 973-5265

E-mail: k2c0@pge.com and PGETariffs@pge.com

EXPLANATION OF UTILITY TYPE

ELC = Electric GAS = Gas
PLC = Pipeline HEAT = Heat WATER = Water

(Date Submitted/ Received Stamp by CPUC)

Advice Letter (AL) #: **5270-E**

Tier: 3

Subject of AL: **Amended and Restated Power Purchase Agreement for Procurement of Eligible Renewable Energy Resources between Shiloh Wind Project 2, LLC and Pacific Gas & Electric Company**

Keywords (choose from CPUC listing): Compliance, Agreements, Procurement

AL submittal type: Monthly Quarterly Annual One-Time Other _____

If AL submitted in compliance with a Commission order, indicate relevant Decision/Resolution #: N/A

Does AL replace a withdrawn or rejected AL? If so, identify the prior AL: No

Summarize differences between the AL and the prior withdrawn or rejected AL: _____

Is AL requesting confidential treatment? If so, what information is the utility seeking confidential treatment for: Yes. See the attached matrix that identifies all of the confidential information.

Confidential information will be made available to those who have executed a nondisclosure agreement: Yes No

Name(s) and contact information of the person(s) who will provide the nondisclosure agreement and access to the confidential information: Doug Herman, (415) 973-3130

Resolution Required? Yes No

Requested effective date: **Upon Commission Approval**

No. of tariff sheets: N/A

Estimated system annual revenue effect (%): N/A

Estimated system average rate effect (%): N/A

When rates are affected by AL, include attachment in AL showing average rate effects on customer classes (residential, small commercial, large C/I, agricultural, lighting).

Tariff schedules affected: N/A

Service affected and changes proposed: N/A

Pending advice letters that revise the same tariff sheets: N/A

Protests, dispositions, and all other correspondence regarding this AL are due no later than 21 days¹ after the date of this submittal, unless otherwise authorized by the Commission, and shall be sent to:

California Public Utilities Commission

Energy Division

EDTariffUnit

505 Van Ness Ave., 4th Flr.

San Francisco, CA 94102

E-mail: EDTariffUnit@cpuc.ca.gov

Pacific Gas and Electric Company

Attn: Erik Jacobson

Director, Regulatory Relations

c/o Megan Lawson

77 Beale Street, Mail Code B13U

P.O. Box 770000

San Francisco, CA 94177

E-mail: PGETariffs@pge.com

¹ The 20-day protest period concludes on a weekend. PG&E is hereby moving this date to the following business day.

**BEFORE THE PUBLIC UTILITIES COMMISSION
OF THE STATE OF CALIFORNIA**

PACIFIC GAS AND ELECTRIC COMPANY

**DECLARATION OF DOUG HERMAN
SEEKING CONFIDENTIAL TREATMENT
FOR CERTAIN DATA AND INFORMATION
CONTAINED IN ADVICE LETTER 5270-E**

I, Doug Herman, declare:

1. I am a Principal in Structured Energy Transactions within the Energy Policy and Procurement organization at Pacific Gas and Electric Company (PG&E). In this position, my responsibilities include work related to renewable energy procurement. This declaration is based on my personal knowledge of PG&E's practices and my understanding of the Commission's decisions protecting the confidentiality of market-sensitive information.

2. Based on my knowledge and experience, and in accordance with the Decisions 06-06-066, 08-04-023, and relevant Commission rules, I make this declaration seeking confidential treatment for certain data and information contained in the attachments to Advice Letter 5270-E.

3. Attached to this declaration is a matrix identifying the data and information for which PG&E is seeking confidential treatment. The matrix specifies that the material PG&E is seeking to protect constitutes confidential market sensitive data and information covered by Public Utilities Code section 454.5(g), D.06-06-066, D.08-04-023 and/or relevant Commission rules. The matrix also specifies why confidential protection is justified. Further, the data and information: (1) is not already public; and (2) cannot be aggregated, redacted, summarized or otherwise protected in a way that allows partial disclosure. By this reference, I am incorporating

into this declaration all of the explanatory text that is pertinent to my testimony in the attached matrix.

I declare under penalty of perjury, under the laws of the State of California, that the foregoing is true and correct. Executed on April 3, 2018 at San Francisco, California.



Doug Herman

PACIFIC GAS AND ELECTRIC COMPANY (U 39 E)
Advice Letter 5270-E
April 9, 2018

IDENTIFICATION OF CONFIDENTIAL INFORMATION

Redaction Reference	Category from D.06-06-066, Appendix 1, or Separate Confidentiality Order That Data Corresponds To	Justification for Confidential Treatment	Length of Time Data To Be Kept Confidential
<p>Appendix A, Consistency with Commission Decisions and Rules and Project Development Status – In its entirety</p>	<p>VII) G) Renewable Resource Contracts under RPS program</p> <p>VII) (unnumbered row following G)): Score sheets, analyses, evaluations of proposed RPS projects</p>	<p>This appendix discusses, analyzes and/or evaluates the confidential terms of the Amended and Restated PPA. Disclosure of this information would provide valuable market sensitive information to market participants. Release of this information could be damaging to future PG&E contract negotiations and ultimately detrimental to PG&E’s customers, and could create a disincentive to do business with PG&E and other regulated utilities.</p>	<p>Items VII) G) and VII) (unnumbered row following G)): Three years</p>
<p>Appendix B1, Confidential IE Report – Grey shaded sections</p>	<p>VII) G) Renewable Resource Contracts under RPS program</p> <p>VII) (unnumbered row following G)): Score sheets, analyses, evaluations of proposed RPS projects</p> <p>Public Utilities Code section 454.5(g)</p>	<p>This appendix discusses, analyzes and/or evaluates the confidential terms of the Amended and Restated PPA and confidential negotiations between PG&E and the counterparty. Disclosure of this information would provide valuable market sensitive information to market participants. Release of this information could be damaging to future PG&E contract negotiations and ultimately detrimental to PG&E’s customers, and could create a disincentive to do business with PG&E and other regulated utilities.</p>	<p>Items VII) G), VII) (unnumbered row following G)), and Public Utilities Code section 454.5(g): Three years</p>

PACIFIC GAS AND ELECTRIC COMPANY (U 39 E)
Advice Letter 5270-E
April 9, 2018

IDENTIFICATION OF CONFIDENTIAL INFORMATION

Redaction Reference	Category from D.06-06-066, Appendix 1, or Separate Confidentiality Order That Data Corresponds To	Justification for Confidential Treatment	Length of Time Data To Be Kept Confidential
<p>Appendix C, Contract Summary – In its entirety</p>	<p>VII) G) Renewable Resource Contracts under RPS program</p> <p>VII) (unnumbered row following G)): Score sheets, analyses, evaluations of proposed RPS projects</p> <p>Item V(C): LSE Total Energy Forecast – Bundled Customer (MWh)</p>	<p>This appendix contains a summary and an analysis of the confidential Amended and Restated PPA. Disclosure of this information would provide valuable market sensitive information to market participants. Release of this information could be damaging to future PG&E contract negotiations and ultimately detrimental to PG&E’s customers, and could create a disincentive to do business with PG&E and other regulated utilities.</p> <p>In addition, information provided in this appendix could be manipulated in conjunction with publicly-available information to determine PG&E's internal and proprietary forecast of its bundled customer total energy requirements.</p>	<p>Items VII) G) and VII) (unnumbered row following G)): Three years</p> <p>Item V(C): Front three years</p>
<p>Appendix D, Amended and Restated PPA</p> <p>Appendix E, Comparison of Amended and Restated PPA to Original PPA</p> <p>Appendix F, Comparison of Amended and Restated PPA to PG&E’s 2014 RPS Form PPA</p>	<p>VII) G) Renewable Resource Contracts under RPS program</p>	<p>These appendices contain the confidential Amended and Restated PPA. Disclosure of this information would provide valuable market sensitive information to market participants. Release of this information could be damaging to future PG&E contract negotiations and ultimately detrimental to PG&E’s customers, and could create a disincentive to do business with PG&E and other regulated utilities.</p>	<p>Three years</p>

PACIFIC GAS AND ELECTRIC COMPANY (U 39 E)
Advice Letter 5270-E
April 9, 2018

IDENTIFICATION OF CONFIDENTIAL INFORMATION

Redaction Reference	Category from D.06-06-066, Appendix 1, or Separate Confidentiality Order That Data Corresponds To	Justification for Confidential Treatment	Length of Time Data To Be Kept Confidential
Appendix G1, Renewable Net Short Calculations – Grey shaded sections	<p>Item V(C): LSE Total Energy Forecast Bundled Customer (MWh)</p> <p>VI(B): Utility Bundled Net Open (Long or Short) Position for Energy</p> <p>May 21, 2014 ALJ Ruling</p>	<p>For Table 1:</p> <p>For rows A, C, E, Ga and Gb, this information shows PG&E's net position for RPS-eligible energy in the periods within the front three years of the forecast.</p> <p>The redacted information in Rows A, C, E, Ga, and Gb could also be manipulated in conjunction with publicly-available information to determine PG&E's internal and proprietary forecast of its bundled customer total energy requirements.</p> <p>The redacted information for rows Ia, Ib, J, J0, J1, J2, La and Lb relates to PG&E's optimized RNS, including: PG&E's assumptions for its overall portfolio optimization strategy; any plans to sell forecast RECs above the PQR; application of forecast RECs above the PQR towards a future RPS compliance requirement; and any plan to procure RECs above the PQR in future years. This information is expressly deemed confidential by the May 21, 2014 ALJ Ruling. Additionally, this information could be used to determine PG&E's net open position for RPS-eligible products and constitutes analysis and evaluation of proposed RPS projects, including sales or transactions intended to create a compliance bank.</p> <p>For Table 2:</p> <p>For rows A, C, E, Ga and Gb, this information shows PG&E's net position for RPS-eligible energy in the periods within the front three years of the forecast.</p> <p>The redacted information in Rows A, C, E, Ga, and Gb could also be manipulated in conjunction with publicly-available information to determine PG&E's internal and proprietary forecast of its bundled</p>	<p>Item V(C): Front three years</p> <p>Item VI(B): Front three years of forecast data confidential</p> <p>May 21, 2014 ALJ Ruling: Indefinite.</p>

PACIFIC GAS AND ELECTRIC COMPANY (U 39 E)
Advice Letter 5270-E
April 9, 2018

IDENTIFICATION OF CONFIDENTIAL INFORMATION

Redaction Reference	Category from D.06-06-066, Appendix 1, or Separate Confidentiality Order That Data Corresponds To	Justification for Confidential Treatment	Length of Time Data To Be Kept Confidential
		<p>customer total energy requirements.</p> <p>The redacted information for rows Gd, Ge, Ha, Hb, H, Ia, Ib, J, J0, J1, J2, La and Lb relates to PG&E's optimized RNS, including: PG&E's assumptions for its overall portfolio optimization strategy; any plans to sell forecast RECs above the PQR; application of forecast RECs above the PQR towards a future RPS compliance requirement; and any plan to procure RECs above the PQR in future years. This information is expressly deemed confidential by the May 21, 2014 ALJ Ruling. Additionally, this information could be used to determine PG&E's net open position for RPS-eligible products and constitutes analysis and evaluation of proposed RPS projects, including sales or transactions intended to create a compliance bank.</p>	

PACIFIC GAS AND ELECTRIC COMPANY

Appendix A

Consistency with Commission Decisions and Rules and Project Development Status

(CONFIDENTIAL)

PACIFIC GAS AND ELECTRIC COMPANY

Appendix B1

Independent Evaluator Report

(CONFIDENTIAL)

PACIFIC GAS AND ELECTRIC COMPANY

Appendix B2

Independent Evaluator Report

ARROYO SECO CONSULTING

PACIFIC GAS AND
ELECTRIC COMPANY
CONTRACT
AMENDMENT
EVALUATION

REPORT OF THE INDEPENDENT
EVALUATOR ON AN AMENDED AND
RESTATED CONTRACT WITH SHILOH WIND
PROJECT 2, LLC

APRIL 4, 2018

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EXECUTIVE SUMMARY

This report evaluates an amended and restated Power Purchase Agreement (PPA) between the Pacific Gas and Electric Company (PG&E) and Shiloh Wind Project 2, LLC, owner and operator of a wind generation facility. An independent evaluator (IE), Arroyo Seco Consulting (Arroyo), conducted various activities to review, test, and check PG&E's processes as the parties negotiated the amended agreement. PG&E and Shiloh Wind Project 2 executed the amended contract on January 9, 2018.

Shiloh Wind Project 2, LLC is owned by EDF Renewable Energy, Inc. ("EDF RE"), formerly enXco, a private company headquartered in San Diego that develops, owns, and operates wind and solar generation. EDF RE is itself a subsidiary of the EDF Group, the parent company of the national utility Electricite de France. The facility is a 150-MW wind project using seventy-five 2-MW REpower MM92 turbines sited in the Collinsville-Montezuma Hills Wind Resource Area in southeastern Solano County, west of Rio Vista. The project commenced commercial operation in early 2009. The structure of this report follows a portion of the guidance of the 2014 RPS Shortlist Report Template provided by the Energy Division of the CPUC. Topics covered include:

- The role of the IE;
- Fairness of project-specific negotiations; and
- Merit of the contract for CPUC approval.

This report does not include a discussion of PG&E's outreach efforts for and the robustness of a Renewables Portfolio Standard (RPS) Request for Offers (RFO), the design of its Least-Cost Best-Fit evaluation methodology and its implementation, which would be appropriate elements if this amended contract had arisen from PG&E's RPS solicitation.

Arroyo's opinion is that the negotiations between PG&E and Shiloh Wind Project 2 were likely conducted fairly with respect to ratepayers, though net benefits are hard to quantify. PG&E provided a unique concession to the seller that raises a concern regarding fairness to competitors, but Arroyo has no evidence that any specific competitor was harmed by the disparate treatment that PG&E provided to Shiloh Wind Project 2.

The CPUC found in its Resolution E-4161 in 2009 that Shiloh Wind Project 2's contract price was reasonable; this amendment has not altered that price. Arroyo ranks the contract as high in contract price and low in value when compared to recent market benchmarks; this simply reflects the trend in market pricing over the period since the project was originally offered to PG&E and the original PPA was negotiated. Given that the facility is already operating and delivering to PG&E, Arroyo ranks its project viability as high. Arroyo ranks its portfolio fit as low, for its contribution to PG&E's long RPS compliance position.

In Arroyo's opinion, the amended and restated Shiloh Wind Project 2 contract merits CPUC approval.

1. ROLE OF THE INDEPENDENT EVALUATOR

A. CPUC DECISIONS REQUIRING INDEPENDENT EVALUATOR PARTICIPATION

The CPUC required an independent evaluator to participate in competitive solicitations for utility power procurement in its Decision 04-12-048. It required an IE when participants in a competitive procurement solicitation include affiliates of investor-owned utilities (IOUs), IOU-built projects, or IOU-turnkey projects. Decision 06-05-039 expanded the requirement, ordering use of an IE to evaluate and report on the entire solicitation, evaluation, and selection process for the 2006 RPS RFO and future competitive solicitations. This was intended to increase the fairness and transparency of the offer selection process. Decision 09-06-050 further required an IE to report on long-term RPS contracts that are bilaterally negotiated rather than awarded through a competitive solicitation; one might view the amended and restated PPA with Shiloh Wind Project 2, LLC as the result of such a bilateral negotiation.

B. KEY INDEPENDENT EVALUATOR ROLES

The CPUC stated its intent for participation of an IE in competitive procurement solicitations to “separately evaluate and report on the IOU’s entire solicitation, evaluation and selection process”, in order to “serve as an independent check on the process and final selections.”¹ The Energy Division has provided a standard template for IEs to follow when reporting about RPS transactions that are filed for approval through an advice letter, specifying that such an IE report cover topics including:

1. Describe the IE’s role.
2. Did the IOU do adequate outreach to participants, and was the solicitation robust?
3. Was the IOU’s least-cost, best-fit (LCBF) methodology designed such that offers were fairly evaluated?
4. Was the LCBF offer evaluation process fairly administered?
5. Describe the fairness of the contract-specific negotiations.
6. Does the contract merit CPUC approval?

The structure of this report organized around the first and the last two issues; because the amendment did not result from a competitive solicitation the second issue is not on point. Arroyo has reported on PG&E’s methodology in prior IE reports on RPS contracts; other than PG&E updating its input parameters the methodology has not changed.

¹ CPUC Decision 06-05-039, May 25, 2006, “Opinion Conditionally Approving Procurement Plans for 2006 RPS Solicitations, Addressing TOD Benchmarking Methodology”, page 46.

C. IE ACTIVITIES

Arroyo performed a variety of tasks to assess the amendment:

- Directly observed several negotiations between the parties as they discussed how to amend the existing contract.
- Monitored e-mail communications between PG&E and the sellers during later negotiations.
- Examined draft versions of the contract amendment the parties exchanged for proposed terms and conditions and the two parties' positions on them.
- Independently assessed the amended contract against PG&E's standard evaluation criteria used in its LCBF methodology.
- Performed an independent market valuation of the amended contract and ranked its net market value against comparable transactions.

2. FAIRNESS OF PROJECT-SPECIFIC NEGOTIATIONS

This chapter provides an independent review of the extent to which PG&E's negotiations with Shiloh Wind Project 2, LLC for an amended and restated contract were conducted fairly with respect to competitors and to ratepayers.

Discussions between PG&E and EDF RE's commercial team began in the spring of 2014. Arroyo was engaged to serve as Independent Evaluator for the amended contract, and telephonically observed more than a dozen discussions between PG&E and EDF RE in the ensuing years. The original starting point for the text of the amended contract was PG&E's 2013 RPS Form Agreement published in December 2013; this was the utility's approved standard RPS contract when discussions began. The document was subsequently revised to incorporate updated terms and definitions from later versions of PG&E's form agreement.

A. BACKGROUND INFORMATION

The original PPA for output of the Shiloh Wind Project 2 facility originated with bilateral negotiations between PG&E. In August 2007 PG&E executed a contract that was submitted for approval by the CPUC in Advice Letter 3143-E. The CPUC approved the contract in its Resolution E-4161 in April 2008.

The facility was constructed and brought into commercial operation in early 2009. Its annual production, based on public filings to date, has averaged about 414 GWh/year in the 2012-2016 period for a capacity utilization of 32%, vs. contract quantity of about 509 GWh/year.

In the spring of 2014, EDF RE initiated discussions with PG&E about amending the PPA in response to the CAISO's implementation of FERC Order 764. The Order requires transmission operators to provide an option to schedule energy in 15-minute intervals and requires variable energy resources to provide meteorological and forced outage data to improve energy forecasting. The CAISO developed a comprehensive proposal for changes to its market design to address inefficiencies in the real-time market as well as adding 15-minute schedules and settlement. The proposal included changes to the Participating Intermittent Resource Program (PIRP), such as creating 15-minute schedules for PIRP resources based on forecasts made 37.5 minutes prior to the interval, and eliminating the prior practice of netting PIRP imbalance energy over the month and settling deviations at the monthly average of five-minute prices. In March, 2014 the FERC conditionally accepted the CAISO's tariff amendment to comply with Order 764. Reaction from stakeholders included concerns about the costs for small intermittent generators to interface with the revised market and the potential financial burden caused by eliminating PIRP monthly imbalance netting.

The original Shiloh Wind Project 2 PPA placed the obligation on the seller to serve as scheduling coordinator for the facility (or to hire a third-party SC). The seller submitted schedules to the CAISO consistent with the CAISO's Eligible Intermittent Resources Protocol (EIRP). It appears that EDF RE's interest in amending the PPA [REDACTED]. Under the original PPA, the seller was responsible for imbalance penalties or other CAISO charges associated with imbalance energy; the change in CAISO rules increased the project's exposure to imbalance charges.

Discussions between PG&E's and EDF RE's teams continued intermittently from the spring of 2014 through the summer of 2017; delays in achieving agreement on terms largely related to extended impasses over a very few negotiation points. PG&E and Shiloh Wind Project 2, LLC executed an amended and restated contract on January 9, 2018

B. PRINCIPLES FOR EVALUATING THE FAIRNESS OF NEGOTIATIONS

Arroyo considered some principles to evaluate the degree of fairness with which PG&E handled negotiations to amend the Shiloh Wind Project 2 contract, compared to other sellers.

- Were sellers treated fairly and consistently by PG&E during negotiations? Were all sellers given equitable opportunities to advance proposals towards final PPAs? Were individual sellers given unique opportunities to move their proposals forward or concessions to improve their contracts' commercial value, opportunities not provided to others?
- Was the distribution of risk between seller and buyer in the PPAs distributed equitably across PPAs? Did PG&E's ratepayers take on a materially disproportionate share of risks in some contracts and not others? Were individual sellers given opportunities to shift their commercial risks towards ratepayers, opportunities that were not provided to others?
- Was non-public information provided by PG&E shared fairly with all sellers? Were individual sellers uniquely given information that advantaged them in securing contracts or realizing commercial value from those contracts?
- If any individual seller was given preferential treatment by PG&E in the course of negotiations, is there evidence that other sellers were disadvantaged by that treatment? Were other proposals of comparable value to ratepayers assigned materially worse outcomes?

C. NEGOTIATIONS BETWEEN PG&E AND EDF RE

Some of the issues addressed or not addressed in the negotiations included:

- Contract price. The contract price remains unchanged from the original PPA, which set it to \$86.90/MWh with no adjustment by time-of-delivery factors. [REDACTED]
- Scheduling coordinator role. The parties agreed to contract provisions that will transfer the plant’s scheduling coordinator role from the seller to PG&E. PG&E inserted a new condition precedent for the effectiveness of the amended contract, requiring that the utility become the scheduling coordinator before the term of the amended contract commences.
- Buyer curtailment rights. The original contract with Shiloh Wind Project 2 did not provide PG&E’s merchant function with any rights as buyer to curtail the facility’s output; there was standard language involving curtailments ordered by the CAISO or the transmission owner. [REDACTED]

². The quid pro quo is embedded in the executed amended contract.

[REDACTED]

- Calculation of deemed delivered energy. [REDACTED]

² [REDACTED]

[REDACTED]

[REDACTED]

- Deemed delivered energy price (DDE).

[REDACTED]

[REDACTED]

[REDACTED]

- Parental guarantee. [REDACTED]

[REDACTED]

- Letter of credit maximum issuing amount. In its more recent RPS form agreements, PG&E has implemented a limit on the total amount of any individual letter of credit, capping it at the lesser of 60% of total collateral posted through letters of credit or \$25 million. This helps PG&E avert excess concentration of exposure to any individual bank.

[REDACTED]

- Availability standards. [REDACTED]

- Capacity attributes. [REDACTED]

- Resource adequacy standards. [REDACTED]

- Guaranteed energy production (GEP). The original Shiloh Wind Project 2 contract set the GEP quantity to the equivalent of 70% of contract quantity.

[REDACTED]

[REDACTED]

- Automated Dispatch System (ADS). [REDACTED]

- CAISO and PTO curtailments. [REDACTED]
The original PPA set a cap of 50 hours per contract year on Dispatch Down periods related to system emergencies or over-generation, as ordered by PG&E. [REDACTED]

- Meteorological stations. [REDACTED]

- Excess delivered energy. PG&E's recent RPS form agreements provide that, if delivered energy plus DDE exceed 115% of contract quantity in a contract year, then PG&E pays a price for the excess over 115% that is the lesser of 75% of contract price or day-ahead market price. [REDACTED]

[REDACTED]

- Default for failure to perform. PG&E's current form agreement and the original PPA both provide a thirty-day grace period for a party to remedy its failure to perform any material covenant or obligation before the other party may declare an event of default.

[REDACTED]

- RPS certification. PG&E's form agreement requires a seller to maintain its certification as an eligible renewable resource, but if a change in law causes the project to lose the certification, it is excused from this requirement if the expected cost required to retain RPS eligibility exceeds a threshold of \$1 million for a 100-MW project, or \$10,000 per MW

[REDACTED]

- Change of control. PG&E's recent RPS form agreements require prior written consent of a party to allow the other party to assign its rights to a third party.

[REDACTED]

[REDACTED]

- CPUC filing deadline. [REDACTED]
- Force majeure termination event. [REDACTED]. In the original contract, the trigger for termination was the failure of to deliver at least 60% of contract quantity over a 12-month period. In the recent RPS form agreements, the trigger is failure to deliver at least 40% of contract quantity over a 12-month period, or destruction of the project by a catastrophic natural disaster. [REDACTED]

Overall, PG&E provided Shiloh Wind Project 2 with several fairly minor concessions compared to its current RPS form agreement; these tended to weaken ratepayer protections compared to the utility's modern form PPA but mostly maintained the balance of benefits and risks between buyer and seller that was struck in negotiating the original PPA. The one concession that PG&E provided [REDACTED] appears to be unique and disparate when compared to PG&E's prior treatment of the seller's competitors.

D. DEGREE OF FAIRNESS OF PROJECT-SPECIFIC NEGOTIATIONS

Negotiations to amend the existing contract between PG&E and Shiloh Wind Project 2 featured a quid pro quo: the seller shifted the newly increased risks and costs of its role as scheduling coordinator to the utility, and PG&E in return obtained the right to order buyer curtailments, subject to specific operational constraints. Contract price did not change.

Arroyo views the concessions that PG&E granted to Shiloh Wind Project 2 relative to the current form contract as generally minor and in some cases meritorious. For example:

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

In contrast, PG&E did not agree to various concessions requested by EDF RE that could have weakened other contract requirements relative to the form agreement or transferred risks or costs to ratepayers or weakened system security. Overall, the outcome of the negotiation seemed to tilt towards the seller but not in ways that Arroyo judges to be clearly harmful to ratepayer interests.

Arroyo did not observe PG&E providing the EDF RE team with non-public information that advantaged it against competing sellers. [REDACTED]

[REDACTED] Arroyo does not believe that

Shiloh Wind Project 2's competitors were materially disadvantaged by the terms that the parties negotiated [REDACTED]

Arroyo's opinion is that PG&E's negotiations with Shiloh Wind Project 2 for the amended and restated contract were conducted fairly with respect to competitors with the one exception noted above. A discussion of possible impacts and benefits borne by ratepayers is provided in the next chapter.

3. MERIT FOR CPUC APPROVAL

This chapter provides an independent review of the merits of the amended and restated contract between PG&E and Shiloh Wind Project 2, LLC against criteria identified in the Energy Division’s RPS IE template.

A. CONTRACT SUMMARY

On January 9, 2018, PG&E and Shiloh Wind Project 2, LLC executed an amended and restated contract for continued delivery of RPS-eligible energy from an existing wind generation facility. Contract capacity for this PPA is 150 MW. The contract quantity for the PPA is 509 GWh/year. The term commencement date for the amended PPA will take place when all conditions precedent have been satisfied (e.g. final CPUC approval, PG&E becoming scheduling coordinator) and [REDACTED]

[REDACTED] The project is located in the Montezuma Hills of southeastern Solano County west of the town of Rio Vista.

B. NARRATIVE OF EVALUATION CRITERIA AND RANKING

The RPS template for IEs provided by the Energy Division calls for a narrative of the merits of the proposed project on the criteria of contract price, portfolio fit, and project viability.

CONTRACT PRICE AND MARKET VALUATION

The Energy Division staff of the CPUC reviewed the original Shiloh Wind Project 2 contract in 2008 and concluded that it “believes that the Contract Price is reasonable”.³ The Commission concluded that “Deliveries from this contract are reasonably priced, and the contract price is fully recoverable in rates over the life of the contract”.⁴ The amended and restated contract for which PG&E is currently seeking CPUC approval does not alter that original contract price.

Contract Price. Deliveries from Shiloh Wind Project 2 to PG&E will continue to be priced at \$86.90/MWh with no adjustment for time-of-delivery factors. While this price compared favorably to prices for offers to PG&E’s 2006 and 2007 RPS solicitations, in today’s market it ranks high in price in comparison to alternatives recently available to PG&E. The pre-TOD contract price for the amended agreement would rank it in the highest-priced quartile of Offers received in PG&E’s 2014 RPS RFO. This simply highlights the downward trend in market prices for renewable generation over the last decade.

³ California Public Utilities Commission Resolution E-4161, April 10, 2008, page 14.

⁴ Op. cit., page 1.

Market Valuation. According to its Advice Letter 3143-A, PG&E performed a market valuation of the original Shiloh Wind Project 2 PPA as part of its evaluation, taking into account contract price and transmission adders based on the project's actual interconnection studies. The bilaterally negotiated contract was filed before the CPUC imposed a requirement for such RPS PPAs to be subjected to Independent Evaluator review, so no independent valuation of the PPA was prepared.

Arroyo lacks all the detailed project-specific data required to perform, to the usual degree of accuracy, an independent evaluation of the value of the amended and restated contract. Based on other data provided in the past to PG&E for adjacent wind generation facilities, Arroyo would expect the contract to rank low in net market value (bottom quartile) when compared to Offers PG&E received in its 2014 RPS RFO; as with pricing, the competitive market benchmark for contract value has moved considerably since 2008.

PORTFOLIO FIT

PG&E's 2017 RPS draft procurement plan (which was accepted by the CPUC in Decision 17-12-007 in December 2017) expressed an expectation that the utility has procured sufficient RPS-eligible energy to meet its compliance needs through 2030. As an existing contract within PG&E's supply portfolio, the Shiloh Wind Project 2 PPA is already counted within the baseline assumption that PG&E uses when projecting when its RPS compliance position will be long or short. The amended contract is expected to continue to contribute towards RPS compliance through its delivery term through early 2029, which includes only years when PG&E expects to have excess procurement of RPS-eligible energy. On that basis Arroyo believes that its fit with PG&E's portfolio is low; its production would be expected to contribute to the estimated net long position through 2029. This ranking is not a demerit of the amendment itself but simply represents how PG&E's supply-demand balance in RPS compliance has evolved with changing demand outlooks since the original PPA was signed.

PROJECT VIABILITY

As an existing generation facility that has operated reliably, Arroyo assesses the project viability of the Shiloh Wind Project 2 facility as ranking quite high, despite the fact that the wind farm has consistently underperformed against its contract quantity.

RPS GOALS

In PG&E's 2013 RPS RFO, the utility applied an evaluation criterion of consistency with and contribution to California's goals for the RPS program. Offers were evaluated on three dimensions:

- California-based projects providing benefits to communities afflicted with poverty, high unemployment, or high emission levels;
- Impact of the project on California's water quality and use;
- Contribution to the biomass goal of Executive Order S-06-06.

The Shiloh Wind Project 2 facility is sited in the Montezuma Hills a few miles west of the town of Rio Vista. Based on the U.S. Census Bureau's 2015 American Community Survey, Rio Vista's median household income is roughly the same as that of the state of California as a whole (both \$62 thousand per year), and its percentage of individuals living in poverty is lower than that of the state overall (11.7% vs. 16.3%). However, Rio Vista has an unemployment rate that is well above that of the state as a whole (14.8% vs. 9.9%). Eastern Solano County is a non-attainment area for PM-2.5 particulates and a moderate non-attainment area for ozone, though the Yolo-Sacramento AQMD seeks to be re-designated as an attainment zone for PM-2.5. As a wind generation facility, Shiloh Wind Project 2 likely has minimal impact on water quality and use. It does not contribute to the state's biomass goal. On that basis Arroyo expects that the project would score as moderate on the RPS Goals criterion as defined in PG&E's 2013 RPS RFO.

C. DISCUSSION OF MERIT FOR APPROVAL

In Arroyo's opinion, the amended and restated contract between PG&E and Shiloh Wind Project 2 merits CPUC approval:

- The CPUC found the original PPA to be reasonable, including its pricing, which is unaltered in the amended contract. While Arroyo currently ranks the PPA's contract price as high and net market value as likely low compared to recent competing proposals, the relevant peer group considered by the Commission when approving the original PPA would have included competing proposals submitted to PG&E's 2006 and 2007 RPS solicitations, not perfect foresight of market conditions in 2017.
- The insertion of provisions for PG&E to exercise a buyer curtailment option [REDACTED] provides ratepayers with a material benefit with no change in contract price. This allows PG&E to avoid taking delivery of the project's energy when CAISO market prices turn negative, when ratepayers would otherwise pay the facility for delivering a product that is worth less than zero. The CAISO is already experiencing a modest frequency of such negative-price episodes and could experience more as additional intermittent resources are built and come on line in California.

Arroyo does not have an independent estimate of the value for incorporating the buyer curtailment option into the Shiloh Wind Project 2 PPA. PG&E performed a valuation of the new buyer curtailment option based on net market value (rather than Portfolio-Adjusted Value) as the metric. Using the utility's current model inputs, PG&E's net market value methodology attributes a value [REDACTED] to the option, as the present value of ratepayer benefits through avoiding purchases of energy during periods of negative market pricing. This estimate does not count additional system benefits that the Portfolio-Adjusted Value methodology would ascribe to the curtailment option beyond the net market value of energy.

[REDACTED]

- By taking on the role of scheduling coordinator from the seller, PG&E's ratepayers will be exposed to a greater likelihood of paying CAISO imbalance costs and penalties. It is not yet evident how much costlier to ratepayers the incidence of imbalances for this facility will be under the revised CAISO tariff. Arroyo does not have a basis for estimating the incremental average cost to ratepayers of PG&E taking on the scheduling coordinator role. [REDACTED]

That being said, PG&E's ratepayers already absorb these risks for hundreds of megawatts of projects under contract, and the number will continue to rise as new contracted projects come on line. Most of the PPAs with solar and wind projects that PG&E has entered since the Shiloh Wind Project 2 contract was first signed place the role of scheduling coordinator upon the utility, so the amendment aligns this project's imbalance risks with those of most of PG&E's renewable PPA portfolio; the amended contract is in line with these other contracts in its allocation of risks between buyer and seller. As far as imbalance risks go, ratepayers are no worse off with the amended PPA than they would be with any other wind farm project under PG&E's standard contract terms in use today.

PG&E's skill set for managing the imbalance risks of its overall portfolio has likely evolved to the point where the utility is better able to manage these specific risks than any other entity other than one or two of the other California IOUs. Also, one would expect that PG&E's ability to manage a 150-MW solar project's imbalance risks is enhanced by its control of other projects and by the buyer curtailment options it has secured in other PPAs. One of the elements of PG&E's valuation of buyer curtailment options is the ability to reduce exposure to CAISO imbalance energy charges.

- The existing, operating Shiloh Wind Project 2 facility ranks high in project viability despite its underperformance compared to contract quantity.
- Arroyo regards the PPA as ranking as low in portfolio fit given that it is already counted in PG&E's baseline for estimating net compliance needs and will deliver renewable energy in periods which the utility expects to have a continuing net long position for compliance needs.
- In Arroyo's opinion, the negotiations between EDF RE and PG&E to achieve an amended and restated agreement for the output of the Shiloh Wind Project 2 facility involved a minor concession that was less than fully fair to the project's competitors. However, there is no evidence that any competitor was materially harmed by PG&E's disparate treatment of Shiloh 2 in amending the existing contract.

- Being unable to quantify with any accuracy the net cost to ratepayers of absorbing the risks of imbalance energy when PG&E becomes scheduling coordinator for the project, it is hard to judge whether the features of the amendment are a net positive or negative for ratepayers. Arroyo speculates based on limited evidence that the balance between added risks of imbalance costs and the benefits of the buyer curtailment option might be a net positive for ratepayers and therefore the overall changes to non-price terms are probably fair to ratepayers.

Based on these observation and judgments about the fairness of negotiations and overall impact on ratepayer benefits and costs, Arroyo's opinion is that the amended and restated Shiloh Wind Project 2 contract merits CPUC approval.

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Appendix C

Confidential Summary and Analysis of the Shiloh II Amended and Restated Power Purchase Agreement

(CONFIDENTIAL)

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Appendix D

Shiloh II Amended and Restated Power Purchase Agreement

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Appendix E

Comparison of Amended and Restated PPA to Original PPA

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Appendix F

Comparison of Amended and Restated PPA to PG&E's 2014 RPS Form PPA

(CONFIDENTIAL)

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Appendix G1

Renewable Net Short Calculations

(CONFIDENTIAL)

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Appendix G2

Renewable Net Short Calculations

**PG&E Gas and Electric
Advice Filing List
General Order 96-B, Section IV**

AT&T	Downey & Brand	Pioneer Community Energy
Albion Power Company	Ellison Schneider & Harris LLP	Praxair
Alcantar & Kahl LLP	Energy Management Service	Regulatory & Cogeneration Service, Inc.
Anderson & Poole	Evaluation + Strategy for Social Innovation	SCD Energy Solutions
Atlas ReFuel	GenOn Energy, Inc.	SCE
BART	Goodin, MacBride, Squeri, Schlotz & Ritchie	SDG&E and SoCalGas
Barkovich & Yap, Inc.	Green Charge Networks	SPURR
Braun Blaising Smith Wynne P.C.	Green Power Institute	San Francisco Water Power and Sewer
CalCom Solar	Hanna & Morton	Seattle City Light
California Cotton Ginners & Growers Assn	ICF	Sempra Utilities
California Energy Commission	International Power Technology	Southern California Edison Company
California Public Utilities Commission	Intestate Gas Services, Inc.	Southern California Gas Company
California State Association of Counties	Kelly Group	Spark Energy
Calpine	Ken Bohn Consulting	Sun Light & Power
Casner, Steve	Keyes & Fox LLP	Sunshine Design
Cenergy Power	Leviton Manufacturing Co., Inc.	Tecogen, Inc.
Center for Biological Diversity	Linde	TerraVerde Renewable Partners
City of Palo Alto	Los Angeles County Integrated Waste Management Task Force	Tiger Natural Gas, Inc.
City of San Jose	Los Angeles Dept of Water & Power	TransCanada
Clean Power Research	MRW & Associates	Troutman Sanders LLP
Coast Economic Consulting	Manatt Phelps Phillips	Utility Cost Management
Commercial Energy	Marin Energy Authority	Utility Power Solutions
County of Tehama - Department of Public Works	McKenzie & Associates	Utility Specialists
Crossborder Energy	Modesto Irrigation District	Verizon
Crown Road Energy, LLC	Morgan Stanley	Water and Energy Consulting
Davis Wright Tremaine LLP	NLine Energy, Inc.	Wellhead Electric Company
Day Carter Murphy	NRG Solar	Western Manufactured Housing Communities Association (WMA)
Dept of General Services	Office of Ratepayer Advocates	Yep Energy
Don Pickett & Associates, Inc.	OnGrid Solar	
Douglass & Liddell	Pacific Gas and Electric Company	