

PUBLIC UTILITIES COMMISSION OF THE STATE OF CALIFORNIA

ENERGY DIVISION

RESOLUTION E-4196  
October 16, 2008

PUBLIC

R E S O L U T I O N

Resolution E-4196. Pacific Gas and Electric Company (PG&E) requests approval of a renewable resource procurement contract with Finavera Renewables, Inc. This contract is rejected.

By Advice Letter 3181-E Filed on December 18, 2007.

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SUMMARY

**PG&E's renewable contract, which results from the 2006 Renewables Portfolio Standard (RPS) solicitation, is rejected**

PG&E filed Advice Letter (AL) 3181-E on December 18, 2007, requesting Commission review and approval of a contract executed with Finavera Renewables, Inc. This contract is rejected.

Seller	Type	Term (Years)	Capacity (MW)	Annual Deliveries (GWh)	Online Date	Project Location
Finavera	Wave	15	2 MW	~4 GWh	12/1/2012	Humboldt County, California

PG&E's renewable power purchase agreement (PPA) results from its 2006 RPS solicitation. The contract utilizes a wave energy conversion technology that Finavera proposes to deploy in Humboldt County, CA. This project represents the first wave technology project submitted to the Commission for approval. However, the Commission finds that the project is not viable, Finavera's bid does not compare favorably to other bids in PG&E's 2006 solicitation and the contract price is not reasonable.

**Confidential information about the contract should remain confidential**

This resolution finds that certain material filed under seal pursuant to Public Utilities (Pub. Util.) Code Section 583, General Order (G.O.) 66-C, and D.06-06-066 should be kept confidential to ensure that market sensitive data does not influence the behavior of bidders in future RPS solicitations.

**BACKGROUND**

**The RPS Program requires each utility to increase the amount of renewable energy in its portfolio**

The California Renewables Portfolio Standard (RPS) Program was established by Senate Bill 1078<sup>1</sup> and codified by California Pub. Util. Code Section 399.11, et seq. The statute required that a retail seller of electricity such as PG&E purchase a certain percentage of electricity generated by Eligible Renewable Energy Resources (ERR). Originally, each utility was required to increase its total procurement of ERRs by at least 1 percent of annual retail sales per year until 20 percent is reached, subject to the Commission's rules on flexible compliance, no later than 2017.

The State's Energy Action Plan (EAP) called for acceleration of this RPS goal to reach 20 percent by 2010.<sup>2</sup> This was reiterated again in the Order Instituting Rulemaking (R.04-04-026) issued on April 28, 2004,<sup>3</sup> which encouraged the utilities to procure cost-effective renewable generation in excess of their RPS annual procurement targets (APTs)<sup>4</sup>, in order to make progress towards the goal expressed in the EAP. On September 26, 2006, Governor Schwarzenegger signed

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<sup>1</sup> Chapter 516, statutes of 2002, effective January 1, 2003 (SB 1078)

<sup>2</sup> The Energy Action Plan was jointly adopted by the Commission, the California Energy Resources Conservation and Development Commission (CEC) and the California Power Authority (CPA). The Commission adopted the EAP on May 8, 2003.

<sup>3</sup> [http://www.cpuc.ca.gov/Published/Final\\_decision/36206.htm](http://www.cpuc.ca.gov/Published/Final_decision/36206.htm)

<sup>4</sup> APT - An LSE's APT for a given year is the amount of renewable generation an LSE must procure in order to meet the statutory requirement that it increase its total eligible renewable procurement by at least 1% of retail sales per year.

Senate Bill (SB) 107,<sup>5</sup> which officially accelerates the State's RPS targets to 20 percent by 2010, subject to the Commission's rules on flexible compliance<sup>6</sup>.

### **CPUC has established procurement guidelines for the RPS Program**

In response to SB 1078, the Commission has issued a series of decisions that establish the regulatory and transactional parameters of the utility renewables procurement program.

- On June 19, 2003, the Commission issued its "Order Initiating Implementation of the Senate Bill 1078 Renewable Portfolio Standard Program," D.03-06-071.<sup>7</sup>
- Instructions for utility evaluation (known as 'least-cost, best-fit') of each offer to sell products requested in a RPS solicitation were provided in D.04-07-029.<sup>8</sup>
- The Commission adopted standard terms and conditions for RPS power purchase agreements in D.04-06-014, as required by Public Utilities Code Section 399.14(a)(2)(D). These STCs have been updated and modified most recently in D.08-04-009<sup>9</sup>, and as a result, there are now thirteen STCs of which four are non-modifiable.
- D.06-10-050, as modified by D.07-03-046, compiled the RPS reporting and compliance methodologies.<sup>10</sup> In this decision, the Commission established methodologies to calculate an LSE's initial baseline procurement amount,

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<sup>5</sup> Chapter 464, Statutes of 2006 (SB 107)

<sup>6</sup> Pub. Util. Code Section 399.14(a)(2)(C)

<sup>7</sup> [http://docs.cpuc.ca.gov/word\\_pdf/FINAL\\_DECISION/27360.PDF](http://docs.cpuc.ca.gov/word_pdf/FINAL_DECISION/27360.PDF)

<sup>8</sup> [http://docs.cpuc.ca.gov/WORD\\_PDF/FINAL\\_DECISION/38287.PDF](http://docs.cpuc.ca.gov/WORD_PDF/FINAL_DECISION/38287.PDF)

<sup>9</sup> [http://docs.cpuc.ca.gov/WORD\\_PDF/FINAL\\_DECISION/81269.PDF](http://docs.cpuc.ca.gov/WORD_PDF/FINAL_DECISION/81269.PDF)

<sup>10</sup> D.06-10-050, Attachment A, [http://www.cpuc.ca.gov/WORD\\_PDF/FINAL\\_DECISION/61025.PDF](http://www.cpuc.ca.gov/WORD_PDF/FINAL_DECISION/61025.PDF)) as modified by D.07-03-046 ([http://www.cpuc.ca.gov/WORD\\_PDF/FINAL\\_DECISION/65833.PDF](http://www.cpuc.ca.gov/WORD_PDF/FINAL_DECISION/65833.PDF)).

annual procurement target (APT) and incremental procurement amount (IPT).<sup>11</sup>

- On June 9, 2004, the Commission adopted its market price referent (MPR) methodology<sup>12</sup> for determining the utility's share of the RPS seller's bid price (the contract payments at or below the MPR), as defined in Public Utilities Code Sections 399.14(a)(2)(A) and 399.15(c). On December 15, 2005, the Commission adopted D.05-12-042 which refined the MPR methodology for the 2005 RPS Solicitation.<sup>13</sup> Subsequent resolutions adopted MPR values for the 2005, 2006 and 2007 RPS Solicitations.<sup>14</sup>
- SB 1078 established a fund, to be administered by the CEC, to cover the above-MPR costs of RPS contracts. However, SB 1036<sup>15</sup> eliminated this fund and established a new mechanism for the Commission to approve rate recovery for the above-MPR costs of RPS contracts. The Commission is now working on implementing SB 1036.<sup>16</sup>

### **Pursuant to SB 1036, above-MPR costs can now be recovered in rates**

Pursuant to SB 1078 and SB 107, the California Energy Commission (CEC) was authorized to "allocate and award supplemental energy payments" to cover above-market costs<sup>17</sup> of long-term RPS-eligible contracts executed through a

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<sup>11</sup> The IPT represents the amount of RPS-eligible procurement that the LSE must purchase, in a given year, over and above the total amount the LSE was required to procure in the prior year. An LSE's IPT equals at least 1% of the previous year's total retail electrical sales, including power sold to a utility's customers from its DWR contracts.

<sup>12</sup> D.04-06-015; [http://docs.cpuc.ca.gov/word\\_pdf/FINAL\\_DECISION/37383.pdf](http://docs.cpuc.ca.gov/word_pdf/FINAL_DECISION/37383.pdf)

<sup>13</sup> [http://www.cpuc.ca.gov/word\\_pdf/FINAL\\_DECISION/52178.pdf](http://www.cpuc.ca.gov/word_pdf/FINAL_DECISION/52178.pdf)

<sup>14</sup> Respectively, Resolution E-3980: [http://www.cpuc.ca.gov/WORD\\_PDF/FINAL\\_RESOLUTION/55465.DOC](http://www.cpuc.ca.gov/WORD_PDF/FINAL_RESOLUTION/55465.DOC), Resolution E-4049: [http://www.cpuc.ca.gov/word\\_pdf/FINAL\\_RESOLUTION/63132.doc](http://www.cpuc.ca.gov/word_pdf/FINAL_RESOLUTION/63132.doc), Resolution E-4118: [http://www.cpuc.ca.gov/word\\_pdf/FINAL\\_RESOLUTION/73594.pdf](http://www.cpuc.ca.gov/word_pdf/FINAL_RESOLUTION/73594.pdf)

<sup>15</sup> Statutes of 2007, Chapter 685, Perata

<sup>16</sup> The Commission implemented the rate-changing aspects of SB 1036 in Resolution E-4160. The Energy Division has held a workshop for implementing rules on administering the above-MPR funds (AMFs) on May 29, 2009 and will finalize the rules soon.

<sup>17</sup> "Above-market costs" refers to the portion of the contract price that is greater than the appropriate market price referent (MPR).

competitive solicitation.<sup>18</sup> The statute required that developers seeking above-market costs apply to the CEC for supplemental energy payments (SEPs).

The mechanism for awarding above-market costs to eligible renewable energy contracts negotiated through a competitive solicitation was modified by SB 1036, which became effective on January 1, 2008.<sup>19</sup> SB 1036 authorizes the CPUC to provide above-MPR cost recovery through electric retail rates for contracts that are deemed reasonable. Above-MPR cost recovery has a 'cost limitation' equal to the amount of funds currently accrued in the CEC's New Renewable Resources Account, which had been established to collect SEP funds, plus the portion of funds that would have been collected through January 1, 2012. The Commission calls these funds the "above-MPR funds (AMFs)", and is currently implementing rules for calculating and administering the AMFs.<sup>20</sup>

SB 1036<sup>21</sup> provides that "The above-market costs of a contract selected by an electrical corporation may be counted toward the cost limitation if all of the following conditions are satisfied:

- (A) The contract has been approved by the commission and was selected through a competitive solicitation pursuant to the requirements of subdivision(d) of Section 399.14.
- (B) The contract covers a duration of no less than 10 years.
- (C) The contracted project is a new or repowered facility commencing commercial operations on or after January 1, 2005.
- (D) No purchases of renewable energy credits may be eligible for consideration as an above-market cost.

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<sup>18</sup> Pub. Util. Code 399.15(d)

<sup>19</sup> Statutes of 2007, Chapter 685, Perata

<sup>20</sup> The Commission implemented the rate-changing aspects of SB 1036 in Resolution E-4160. The Energy Division has held a workshop for implementing rules on administering the AMFs on May 29, 2009 and will finalize the rules soon.

<sup>21</sup> Pub. Util. Code § 399.15(d)(2)

(E) The above-market costs of a contract do not include any indirect expenses including imbalance energy charges, sale of excess energy, decreased generation from existing resources, or transmission upgrades.”

Once a utility’s AMFs are insufficient to support the costs of above-MPR RPS contracts, SB 1036 directs the commission to allow the utility to “limit its procurement to the quantity of eligible renewable energy resources that can be procured at or below the MPR”.<sup>22</sup>

### **PG&E requests approval of a renewable energy contract**

On December 18, 2007, PG&E filed Advice Letter (AL) 3181-E requesting Commission approval of a renewable procurement contract between PG&E and Finavera Renewables, Inc. (Finavera). The PPA results from PG&E’s 2006 RPS solicitation which was authorized by D.06-05-039 on May 25, 2006.

### **PG&E requests final “CPUC Approval” of Contract**

PG&E requests the Commission to issue a resolution containing the findings required by the definition of “CPUC Approval” in Appendix A of D.08-04-009. In addition, PG&E requests that the Commission issue a resolution that finds the following:

1. Approves the PPA in its entirety, including payments to be made by PG&E pursuant to the PPA, subject to the Commission’s review of PG&E’s administration of the PPA.
2. Finds that any procurement pursuant to the PPA is procurement from an eligible renewable energy resource 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 Renewables Portfolio Standard (Public Utilities Code Section 399.11 et seq.) (“RPS”), Decision (“D.”) 03-06-071 and D.06-10-050, or other applicable law.
3. Finds that all indirect costs, as provided by Public Utilities Code section 399.15(d), associated with procurement under the PPA shall be recovered in rates.

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<sup>22</sup> 399.15(d)(3)

4. Adopts the following finding of fact and conclusion of law in support of CPUC Approval:
  - a. The PPA is consistent with PG&E's approved 2006 RPS procurement plan.
  - b. The terms of the PPA, including the price of delivered energy, are reasonable.
5. Adopts the following finding of fact and conclusion of law in support of PPA cost recovery:
  - a. The utility's cost of procurement under the PPA shall be recovered through PG&E's Energy Resource Recovery Account.
  - b. Any stranded costs that may arise from the PPA are subject to the provisions of D.04-12-048 that authorize recovery of stranded renewables procurement costs over the life of the contract. The implementation of the D.04-12-048 stranded cost recovery mechanism is being addressed in Rulemaking ("R.") 06-02-013.
6. Adopts the following findings with respect to resource compliance with the Emissions Performance Standard ("EPS") adopted in R.06-04-009:
  - a. The PPA is not a covered procurement subject to the EPS because the generating facility has a forecast annualized capacity factor of less than 60% and therefore is not baseload generation under paragraphs 1(a)(ii) and 3(2)(a) of the Adopted Interim EPS Rules.
7. Finds that the PPA meets the criteria specified by Public Utilities Code section 399.15(d)(2). Accordingly, the above-MPR portion of the cost of procurement under the PPA is eligible to count against the RPS procurement cap defined by Public Utilities Code section 399.15(d)(1).

**PG&E's Procurement Review Group participated in review of the contract**

In D. 02-08-071, the Commission required each utility to establish a "Procurement Review Group" (PRG) whose members, subject to an appropriate

non-disclosure agreement, would have the right to consult with the utilities and review the details of:

1. Overall transitional procurement strategy;
2. Proposed procurement processes including, but not limited to, RFO; and
3. Proposed procurement contracts before any of the contracts are submitted to the Commission for expedited review.

The PRG for PG&E consists of: California Department of Water Resources (DWR), the Commission's Energy Division, Union of Concerned Scientists (UCS), Division of Ratepayer Advocates (DRA), Coalition of California Utility Employees (CUE) and The Utility Reform Network (TURN).

PG&E provided the PRG with reports on this transaction on five occasions: September 25, 2006, October 26, 2006, December 14, 2006, March 30, 2007, and May 30, 2007.

Although Energy Division is a member of the PRG, it reserved its conclusions for review and recommendation on the PPA to the resolution process.

## **NOTICE**

Notice of AL 3181-E was made by publication in the Commission's Daily Calendar. PG&E states that a copy of the Advice Letter was mailed and distributed in accordance with Section III-G of General Order 96-A.

## **PROTESTS**

Advice Letter 3181-E was not protested.

## **DISCUSSION**

### **Description of the project**

The following table summarizes the substantive features of the PPA.



Seller	Type	Term (Years)	Capacity (MW)	Annual Deliveries (GWh)	Online Date	Project Location
Finavera	Wave	15	2 MW	~4 GWh	12/1/2012	Humboldt County, California

The Finavera PPA is for a new 2 megawatt (MW) wave project in Humboldt County, California. Finavera is a publicly traded company in Vancouver, Canada. This is the first wave project submitted to the Commission for approval, and would result in a demonstration project for Finavera’s hydraulic pump buoy system. The project is expected to deliver slightly less than 4 gigawatt hours (GWh) annually with a December 1, 2012 online date.

**Energy Division rejects the proposed Agreement on the following grounds:**

- Assessment of project viability
- Comparison to other 2006 bids
- Reasonableness of the proposed project’s contract price

**The proposed project is not currently viable**

PG&E failed to provide sufficient information in AL 3181-E that the proposed Finavera project is viable. As described in AL 3181-E, the wave energy industry is in a nascent stage. Finavera’s wave technology is pre-commercial, and this proposed contract is for a demonstration project for Finavera’s hydraulic pump buoy system. Finavera deployed a prototype buoy off the Oregon coast in 2007 that was to be tested for 6 weeks. The buoy was supposed to last longer than 3 months, but sank prior to the end of the 6 week period.<sup>23</sup>

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<sup>23</sup> Finavera draft Resolution opening comments

In a separate application, A.07-07-015<sup>24</sup>, PG&E requested \$6 million<sup>25</sup> to fund its proposed WaveConnect projects. According to PG&E, the WaveConnect projects could confirm the feasibility of extracting power from ocean waves in California and states that the “primary objective of the WaveConnect projects is to accelerate the development of wave energy in California as cost effectively as possible”<sup>26</sup>. The Application confirms there is no industry consensus on the most optimal or most commercially viable wave energy technologies.

PG&E’s application provides evidence that wave energy technology is in an early stage of development, and in fact suggests that the ERRP program is the way for California to promote the development of wave energy. One objective of WaveConnect is to gain knowledge of the feasibility of various wave energy conversion technologies, such as Finavera’s hydraulic pump buoy system. PG&E provides no further information on Finavera’s technology in AL 3181-E to provide a sufficient showing that the technology will be able to perform under the proposed contract. PG&E does not indicate that Finavera’s technology is any further along in the development process than the wave technologies it proposes to study through WaveConnect or that approval of the proposed contract is preferable to funding WaveConnect.

Through this PPA, PG&E wants to assist in accelerating the commercialization of this technology. The Commission supports PG&E’s efforts to commercialize new technologies; however, considering that this particular technology is in such an early stage, we find that approving this PPA at this time is not the best way to move this wave technology toward commercialization.

See Confidential Appendix C for more analysis on viability.

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<sup>24</sup> PG&E filed Application (A.) 07-07-015 on July 18, 2007 to establish the Emerging Renewable Resource Program (ERRP). ERRP is intended to help commercialize emerging renewable technologies, such as wave energy conversion devices. One of the projects PG&E proposed in the application was WaveConnect.

<sup>25</sup> A proposed decision approving ERRP has been issued, but the Commission has not yet voted on it. The proposed decision approves part of PG&E’s funding request for WaveConnect.

<sup>26</sup> A.07-07-015, page 79.

**The proposed project does not compare favorably to PG&E's 2006 solicitation bids**

There is significant uncertainty surrounding wave technology viability. The Finavera contract does not compare favorably to PG&E's other 2006 solicitation bids.

See Confidential Appendix A for an overview of the 2006 solicitation. See Confidential Appendix B for Finavera's detailed LCBF ranking and comparison of the contract price to PG&E's other shortlisted projects from the 2006 solicitation.

**The PPA price is above the MPR and is not reasonable**

The Finavera contract price exceeds the 2006 MPR and would require above-MPR funds. Based on PG&E's responses to Energy Division data requests and the project's LCBF ranking, the Commission finds that the contract does not, on balance, provide enough value to justify the contract price. Given that the developer has a number of wave projects planned around the world<sup>27</sup>, and that PG&E is proposing to fund the development of wave technologies through WaveConnect, the Commission is assured that rejecting this contract will not hinder further wave development.

See Confidential Appendix B for more details about the contract price.

**Confidential information about the contracts should remain confidential**

Certain contract details were filed by PG&E under confidential seal. Energy Division recommends that certain material filed under seal pursuant to Public Utilities (Pub. Util.) Code Section 583 and General Order (G.O.) 66-C, and considered for possible disclosure, should be kept confidential to ensure that market sensitive data does not influence the behavior of bidders in future RPS solicitations.

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<sup>27</sup> The developer's website <http://www.finavera.com> lists projects in the state of Washington, Canada, and South Africa.

## **COMMENTS**

Public Utilities Code section 311(g)(1) provides that this resolution must be served on all parties and subject to at least 30 days public review and comment prior to a vote of the Commission. Section 311(g)(2) provides that this 30-day period may be reduced or waived upon the stipulation of all parties in the proceeding.

The 30-day comment period for the draft of this resolution was neither waived nor reduced. Accordingly, this draft resolution was mailed to parties for comments.

Comments were due on October 2, 2008. PG&E and Finavera filed timely comments. Reply comments were timely filed on October 8, 2008 by the Community Environmental Council.

We carefully considered comments that focused on factual, legal, or technical errors and made appropriate changes to the draft Resolution.

### **PG&E, Finavera and Community Environmental Council seek reversal of the draft Resolution rejecting Finavera PPA**

All three commenting parties assert that despite the high price, the Finavera PPA should be approved. PG&E argues that the contract price is reasonable because the project size is small and the technology is in a development stage. Finavera's comments similarly argue that although the contract price is high, it is fair. The Community Environmental Council argues that the Finavera PPA should be approved despite the relatively high cost because the project is small, and it may have a large impact on the North American wave power industry.

PG&E also argues that rejecting the PPA could negatively affect wave development in California, that ratepayers will not be harmed if the project is not viable, and that funding wave technology development through ERRP should not exclude private investment.

The Commission rejects these comments seeking reversal of the draft Resolution. As described in this Resolution, the Commission finds that PG&E has not provided a strong showing that the contract price is reasonable or that this project is viable. As a result, the Commission finds that the contract does not, on balance, provide enough value to justify the contract price. The Commission

does not make a judgment here on the value of other wave or emerging technologies. Further, the Commission's decision to reject the PPA is not predicated on the possibility that it could receive support through WaveConnect.

Finavera made certain factual corrections about the deployment of the AquaBuOY 2.0 wave energy prototype. The Commission appreciates Finavera's corrections and has incorporated them in the Resolution.

## **FINDINGS**

1. The RPS Program requires each utility, including PG&E, to increase the amount of renewable energy in its portfolio to 20 percent by 2010, increasing by a minimum of one percent per year.
2. D.04-06-014 and D.07-11-025 set forth standard terms and conditions to be incorporated into each RPS PPA. Those terms were compiled and published by D.08-04-009.
3. PG&E filed Advice Letter 3181-E on December 18, 2007, requesting Commission review and approval of a new renewable energy contract with Finavera Renewables, Inc.
4. D.06-05-039 directed the utilities to issue their 2006 renewable RFOs, consistent with their renewable procurement plans.
5. The Commission required each utility to establish a Procurement Review Group (PRG) to review the utilities' interim procurement needs and strategy, proposed procurement process, and selected contracts.
6. PG&E briefed its Procurement Review Group regarding this contract on September 25, 2006, October 26, 2006, December 14, 2006, March 30, 2007, and May 30, 2007.
7. Finavera's proposed all-in contract price is above the 2006 MPR released in Resolution E-4049.
8. Wave energy conversion technologies are pre-commercial.
9. AL 3181-E failed to provide strong showing that Finavera's technology would be able perform as required by the PPA.
10. The PPA price is not reasonable.

11. Certain material filed under seal pursuant to Public Utilities (Pub. Util.) Code Section 583 and General Order (G.O.) 66-C, and considered for possible disclosure, should not be disclosed. Accordingly, the confidential appendices, marked "[REDACTED]" in the redacted copy, should not be made public upon Commission approval of this resolution.
12. AL 3181-E should be rejected.

**THEREFORE IT IS ORDERED THAT:**

1. AL 3181-E is rejected.

This Resolution is effective today.

I certify that the foregoing resolution was duly introduced, passed and adopted at a conference of the Public Utilities Commission of the State of California held on October 16, 2008; the following Commissioners voting favorably thereon:

/s/ PAUL CLANON  
PAUL CLANON  
Executive Director

MICHAEL R. PEEVEY  
PRESIDENT  
DIAN M. GRUENEICH  
JOHN A. BOHN  
RACHELLE B. CHONG  
TIMOTHY ALAN SIMON  
Commissioners

## **Confidential Appendix A**

### **2006 RPS Solicitation Overview [REDACTED]**

## **Confidential Appendix B**

### **Contract Analysis [REDACTED]**



## **Confidential Appendix C**

### **Project Viability Matrix [REDACTED]**