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May 21, 2013

Via Electronic and First Class Mail

Public Utility Commission of Oregon
Attn: Filing Center
P.O. Box 2148
Salem, OR 97308-2148
puc.filingcenter@state.or.us

Re: OPUC Docket No. UM 1610

Attention Filing Center:

Enclosed for filing in the above-captioned docket are an original and five copies of *OneEnergy, Inc.'s Cross-Examination Exhibits*.

An extra copy of this letter is enclosed. Please date stamp the extra copy and return it to me in the envelope provided.

Thank you in advance for your assistance.

Sincerely,



Ken Kaufmann
Attorney for OneEnergy, Inc.

cc: UM 1610 Service List

Enclosures

BEFORE THE PUBLIC UTILITY COMMISSION OF OREGON

UM 1610

In the Matter of

PUBLIC UTILITY COMMISSION OF
OREGON,

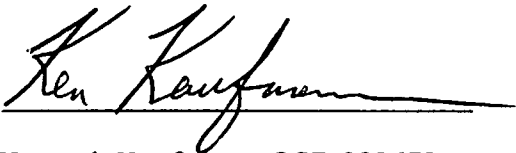
Investigation Into Qualifying Facility
Contracting and Pricing.

ONEENERGY, INC.'S
CROSS EXAMINATION EXHIBITS

Pursuant to scheduling order issued May 13, 2013 by Administrative Law Judges Kirkpatrick and Pines, OneEnergy, Inc. submits its cross-examination exhibits in the above-referenced docket. OneEnergy reserves the right to file supplemental exhibits based on PacifiCorp's pending responses to OneEnergy's data requests, which are due Wednesday, May 22, 2013.

Exhibit Number	Exhibit Name
OneEnergy/300	<i>PacifiCorp's Application for Approval of Avoided Cost Schedule in Compliance with Order No. 11-505, Docket No. UM 1396 (February 13, 2012)</i>
OneEnergy/301	<i>Portland General Electric's Testimony and Exhibits of Robert Macfarlane (PGE / 100), Docket No. UM 1396 (March 16, 2012)</i>

Dated this 21st of May 2013.

By 

Kenneth Kaufmann, OSB 982672
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CERTIFICATE OF SERVICE

I HEREBY CERTIFY that, on the 21st day of May 2013, I served a true and correct copy of the foregoing *OneEnergy, Inc. 's Cross-Examination Exhibits* in OPUC Docket No. UM 1610 on the following named persons/entities by electronic mail.

DATED this 21st day of May 2013.

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BEFORE THE PUBLIC UTILITY COMMISSION
OF OREGON

ONEENERGY, INC.

Cross-Examination Exhibit

*PacifiCorp's Application for Approval of Avoided Cost Schedule in Compliance
with Order No. 11-505, Docket No. UM 1396 (February 13, 2012)*



825 NE Multnomah, Suite 2000
Portland, Oregon 97232

February 13, 2012

**VIA ELECTRONIC FILING
AND OVERNIGHT DELIVERY**

Oregon Public Utility Commission
550 Capitol Street NE, Ste 215
Salem, OR 97301-2551

Attn: Filing Center

RE: PacifiCorp's Application for Approval of Avoided Costs Schedules in Compliance with Order No. 11-505

PacifiCorp d/b/a Pacific Power ("PacifiCorp or the Company") encloses for filing its Application for Approval of Avoided Cost Schedules in Compliance with Order No. 11-505. Accompanying the Application is the direct testimony and exhibits of Kelcey Brown and Bruce W. Griswold. A CD containing the workpapers is also provided.

The Company requests that all data requests on this matter be sent to the following:

By email (preferred): datarequest@pacificorp.com

By regular mail: Data Request Response Center
PacifiCorp
825 NE Multnomah, Suite 2000
Portland, Oregon 97232

Please contact Joelle Steward, Regulatory Manager, at (503) 813-5542 for questions on this matter.

Sincerely,


Andrea L. Kelly
Vice President, Regulation

Enclosure

Cc: Service List – UM 1396

**BEFORE THE PUBLIC UTILITY COMMISSION
OF OREGON**

UM _____

In the Matter of the Application of
PACIFICORP for an Order Approving
Avoided Cost Rates and Tariffs

**PACIFICORP'S APPLICATION FOR
APPROVAL OF AVOIDED COST
SCHEDULES IN COMPLIANCE WITH
ORDER NO. 11-505**

I. INTRODUCTION

1
2 Pursuant to Order No. 11-505 issued by the Public Utility Commission of Oregon
3 (Commission) on December 13, 2011 in Docket UM 1396 (UM 1396 Phase II Order),
4 PacifiCorp (the Company) submits this Application for Approval of Avoided Cost
5 Schedules in Compliance with Order No. 11-505 (Application). This filing was directed
6 in the ordering paragraph of the UM 1396 Phase II Order, which stated that within 60
7 days, PacifiCorp shall file an application with supporting testimony "setting forth
8 proposed rates and tariffs to effectuate the legal and policy decisions made in this order."

9 This Application is supported by the testimony and accompanying exhibits of
10 Company witnesses Ms. Kelcey Brown and Mr. Bruce W. Griswold. The Company
11 requests that the Commission find that the Company's analysis and procedures set forth
12 in the testimony, the proposed revisions to Schedules 37¹ and 38 attached to Mr.
13 Griswold's testimony as Exhibits PAC/201-PAC/204, and associated changes to the
14 Company's standard power purchase agreements (PPAs), all comply with the
15 Commission's UM 1396 Phase II Order.

II. BACKGROUND

16
17 The Commission opened Docket UM 1396 to establish a methodology for
18 determining resource sufficiency for purposes of calculating avoided cost payments to

¹ The Company has a separate request pending before the Commission to revise Schedule 37 in Docket UE 235. Resolution of that docket may result in further updates or changes to Schedule 37.

1 qualifying facilities (QFs) consistent with Commission policy and the Public Utility
2 Regulatory Policies Act (PURPA).² In Phase I of that proceeding, on December 22,
3 2010, the Commission issued Order No. 10-488 resolving some issues addressed in
4 comments in Phase I of the docket. In that order, the Commission found that:

- 5 • The Integrated Resource Planning (IRP) process is the appropriate venue
6 for addressing resource sufficiency;
- 7 • Where the utility's acknowledged IRP shows a range of on-line years for a
8 major resource, the earliest date in the range will set the date for resource
9 deficiency;
- 10 • Where the IRP and IRP action plan are partially acknowledged, the
11 resource sufficiency/deficiency demarcation will be made on a case-by-
12 case basis;
- 13 • The 100MW standard for major resources remains unchanged; and
- 14 • The current practice of updating avoided costs will remain unchanged,
15 with utilities filing their avoided costs every two years and 30 days after
16 an IRP order is issued, or for a "significant change."³

17 The Commission deferred to Phase II of that proceeding resolution of issues
18 related to avoided costs for renewable resources.⁴ The Commission received additional
19 opening and reply comments in Phase II of the docket. On December 13, 2011, the
20 Commission issued its UM 1396 Phase II Order, in which it made the following
21 findings:

² See *Re Public Utility Commission of Oregon Staff's Investigation Relating to Electric Utility Purchases from Qualifying Facilities*, Docket UM 1129, Order No. 06-538 at 54 (Sept. 20, 2006).

³ Order No. 10-488 at 8.

⁴ Order No. 10-488 at 9.

- 1 • Separate renewable avoided cost rates should be adopted for Portland
2 General Electric Company (PGE) and PacifiCorp;⁵
- 3 • During periods of renewable resource sufficiency, the avoided cost rate
4 will be based on market prices. During periods of renewable resource
5 deficiency, the rate will be based on the renewable avoided cost of the
6 next utility scale renewable resource acquisition in that utility's IRP. The
7 renewable resource QF will keep all associated Renewable Energy
8 Certificates (RECs) during periods of renewable resource sufficiency, but
9 will transfer those RECs to the purchasing utility during periods of
10 renewable resource deficiency;
- 11 • The IRP Action Plan should be used to identify when a renewable
12 resource acquisition could be avoided. Out-of-state renewable portfolio
13 standards should not be used to determine when a renewable resource can
14 be avoided;
- 15 • A renewable QF should have the option of choosing among the renewable
16 avoided cost stream and the standard avoided cost stream;
- 17 • A project is avoidable until a utility makes an irreversible commitment to
18 acquire it. An irreversible commitment occurs after the completion of the
19 RFP process and the execution of contracts or awarding of the project to
20 the utility to build for itself; and
- 21 • PGE and Pacific Power's renewable resource avoided cost rate compliance
22 filings will be the subject to evidentiary hearings, where parties will have
23 the opportunity to review the material, conduct discovery, and propose
24 changes.⁶

⁵ The Commission found that because Idaho Power Company (Idaho Power) is not fully subject to the Oregon renewable portfolio standard (RPS), no renewable resources avoided cost rate should be adopted for Idaho Power at this time.

⁶ Order No. 11-505 at 1-2.

1 This Application and supporting testimony and exhibits demonstrates how
2 PacifiCorp will effectuate these legal and policy decisions.

3 III. DISCUSSION

4 A. PacifiCorp's Proposed Revisions to Schedules 37 and 38, as Set Forth in the 5 Company's Testimony, Comply with the UM 1396 Phase II Order.

6 The testimony of Kelcey Brown explains the analysis and calculations
7 underlying the Company's proposed revisions to its avoided cost schedules, Schedules
8 37 and 38. In summary, based on the Company's 2011 IRP,⁷ the Company proposes a
9 renewable avoided cost rate with a sufficiency period through 2017, and a deficiency
10 period starting in 2018. The demarcation of the deficiency period is based on the next
11 utility scale renewable resource acquisition in the 2011 IRP Action Plan, which is a 300
12 MW Wyoming wind resource.

13 The Company also proposes to include integration costs in its standard and
14 renewable avoided cost rates for intermittent resources. The Company's wind
15 integration cost component was determined in the 2010 Wind Integration Study ("Wind
16 Study"), included in the 2011 IRP. The inclusion of an integration avoided cost
17 component is consistent with the Commission's adoption of a renewable avoided cost
18 rate and its express recognition of the usefulness of distinctions between base load and
19 intermittent QF resources in avoided cost rate options.⁸

20 In addition, Ms. Brown's testimony explains how this Application relates to the
21 Company's bi-annual filing to update its standard avoided costs, a filing which the
22 Company plans to make no later than March 4, 2012, pursuant to OAR 860-029-0080.
23 Ms. Brown also sets forth the Company's plan to later update the Schedule 37 standard

⁷ *Re. PacifiCorp 2011 Integrated Resource Plan*, Docket LC 52, PacifiCorp's 2011 Integrated Resource Plan (Mar. 31, 2011). The Company expects an acknowledgement order of its 2011 IRP prior to implementation of the revisions to Schedules 37 and 38 sponsored in this filing. Therefore, PacifiCorp has used the 2011 IRP as the basis for this filing even though the 2011 IRP is still pending before the Commission.

⁸ See Order No. 11-505 at 5.

1 avoided cost rate, along with the renewable avoided cost rate, in order to reflect any
2 changes in the Company's update to its load and resource balance in the 2011 All-
3 Source RFP proceeding (Docket UM 1540). This plan is consistent with the
4 Commission's finding that issues of avoidability "address the timing of a utility's
5 resource sufficiency."⁹

6 Mr. Griswold's testimony sponsors the revisions to the Company's avoided
7 costs schedules and standard PPAs necessary to implement the policies articulated in
8 the UM 1396 Phase II Order. The key change to Schedule 37 is the addition of the
9 Renewable Fixed Avoided Cost pricing option, available to all renewable QFs that
10 qualify under the Oregon Renewable Portfolio Standard.¹⁰ A second important change
11 is the addition of an integration charge for intermittent renewable QFs to the standard
12 and renewable avoided cost pricing options.

13 Communications regarding this filing should be addressed to:

14
15 Oregon Dockets
16 PacifiCorp
17 825 NE Multnomah, Suite 2000
18 Portland, OR 97232
19 Email: oregondockets@pacificorp.com

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20
21
22
23
24 In addition, PacifiCorp requests that all data requests be sent to the following:

25
26 By email (preferred): datarequest@pacificorp.com

27
28 By regular mail: Data Request Response Center
29 PacifiCorp
30 825 NE Multnomah, Suite 2000
31 Portland, Oregon 97232

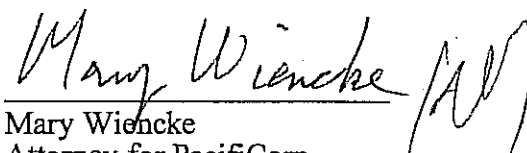
⁹ See Order No. 11-505 at 10.

¹⁰ ORS 469A.010, 469A.020, and 469A.025.

1
2 **IV. CONCLUSION**

3 PacifiCorp respectfully requests that the Commission issue an order approving
4 the Company's proposed revisions to Schedules 37 and 38 and the associated changes
5 to the Company's standard PPAs. PacifiCorp also requests that the Commission allow
6 the Company to coordinate its standard avoided cost update with this filing as outlined
7 in Ms. Brown's testimony, including the proposal to update Schedules 37 and 38 in the
8 future to reflect changes in the Company's load and resource balance identified in the
Company's 2011 All-Source RFP proceeding (Docket UM 1540).

DATED: February 13, 2012


Mary Wiencke
Attorney for PacifiCorp

PACIFICORP

Mary Wiencke
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CERTIFICATE OF SERVICE

I hereby certify that on this 13th of February, 2012, I caused to be served, via E-Mail and US Mail (to those parties who have not waived paper service), a true and correct copy of the foregoing document on the following named person(s) at his or her last-known address(es) indicated below.

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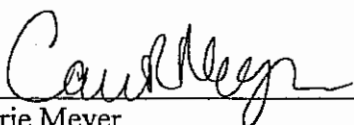
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Carrie Meyer
Coordinator, Regulatory Operations

Docket No. UM-
Exhibit PAC/100
Witness: Kelcey Brown

**BEFORE THE PUBLIC UTILITY COMMISSION
OF THE STATE OF OREGON**

PACIFICORP

Direct Testimony of Kelcey Brown

February 2012

1 **Q. Please state your name, business address and present position with**
2 **PacifiCorp, dba Pacific Power (“the Company”).**

3 A. My name is Kelcey Brown and my business address is 825 NE Multnomah Street,
4 Suite 600, Portland, Oregon 97232. My present title is Lead/Senior Regulatory
5 Consultant.

6 **Qualifications**

7 **Q. Briefly describe your education and business experience.**

8 A. I have been employed by PacifiCorp since May 2011. Since that time I have
9 worked on net power costs, avoided cost proceedings, and the preparation of the
10 Company’s Federal Energy Regulatory Commission (“FERC”) transmission rate
11 case filing. Prior to joining PacifiCorp, I worked at the Public Utility
12 Commission of Oregon (“Commission”) from November 2007 through May
13 2011. During my time at the Commission I sponsored testimony in several
14 dockets involving net power costs, integrated resource planning, and various
15 revenue and policy issues. From 2003 through 2007 I worked as the Economic
16 Analyst for a telecommunications company, Blackfoot Telephone, where I was
17 responsible for revenue forecasts, resource acquisition analysis, pricing, and
18 regulatory support. I have a B.S. in Business Economics from the University of
19 Wyoming, which I received in 2001, and completed all course work towards a
20 Master’s degree in Economics from the University of Wyoming, which focused
21 primarily on regulatory economics.

1 **Overview of Testimony**

2 **Q. What is the purpose of your testimony?**

3 A. The purpose of my testimony is to provide information on how the Company
4 calculated its renewable avoided cost rate in compliance with Order No. 11-505
5 in Phase II of Docket UM 1396 (“UM 1396 Phase II Order”). In addition, I will
6 discuss the Company’s inclusion of integration costs associated with intermittent
7 resources in the renewable and standard avoided cost rates, and the Company’s
8 intention to later update the Schedule 37 standard avoided cost rate, along with
9 the renewable avoided cost rate, if the Company does not acquire or defers its
10 currently planned 2016 Combined Cycle Combustion Turbine (“CCCT”).

11 **Q. Is the Company presenting any additional witnesses in this proceeding?**

12 A. Yes. Mr. Bruce W. Griswold, Director of Short-Term Origination and
13 Qualifying Facility (“QF”) Contracts, presents the Company’s proposed revisions
14 to its avoided cost schedules (Schedules 37 and 38) and standard contracts.

15 **Background**

16 **Q. Please provide a brief background of Docket UM 1396 and the development
17 of the renewable avoided cost rate.**

18 A. The Commission originally opened Docket UM 1396 to establish a methodology
19 for determining resource sufficiency for purposes of calculating avoided cost
20 payments to qualifying facilities (“QFs”) under the Public Utility Regulatory
21 Policy Act of 1978 (“PURPA”). In Order No. 10-488 issued on December 22,
22 2010, the Commission found that the integrated resource plan (“IRP”) was the
23 appropriate venue for addressing resource sufficiency and deficiency, and made

1 additional findings related to the definition of a major resource, the demarcation
2 point of sufficiency and deficiency, and maintaining the current schedule of
3 updating avoided cost rates. In addition, the Commission outlined issues to be
4 addressed in Phase II of UM 1396 related to the calculation of avoided costs for
5 renewable resources.

6 **Q. What did the Commission decide in Phase II of UM 1396 with respect to the**
7 **calculation of avoided costs for renewable resources?**

8 **A.** In the UM 1396 Phase II Order, the Commission determined that:

- 9 • The Commission will adopt separate renewable avoided cost rates for
10 Portland General Electric (“PGE”) and PacifiCorp;
- 11 • During periods of renewable resource sufficiency, the rate will be based
12 on market prices. During periods of renewable resource deficiency, the
13 rate will be based on the renewable avoided cost of the next utility scale
14 renewable resource acquisition in that utility’s IRP. The renewable
15 resource QF will keep all associated Renewable Energy Certificates
16 (“RECs”) during periods of renewable resource sufficiency, but will
17 transfer those RECs to the purchasing utility during periods of renewable
18 resource deficiency;
- 19 • The Commission will use a company’s IRP Action Plan to identify when a
20 renewable resource acquisition could be avoided;
- 21 • A renewable QF will have the option of choosing among the renewable
22 avoided cost stream and the standard avoided cost stream;
- 23 • A project is avoidable until a utility makes an irreversible commitment to

1 acquire it. An irreversible commitment occurs after the completion of the
2 Request For Proposal (“RFP”) process and the execution of contracts or
3 awarding of the project to the utility to build for itself; and

- 4 • PGE and PacifiCorp will make renewable resource avoided cost rate
5 compliance filings, subject to evidentiary hearings, where parties will have
6 the opportunity to review the material, conduct discovery, and propose
7 changes.

8 **Q. Please summarize how the Company plans to revise its avoided cost**
9 **calculations to comply with the UM 1396 Phase II Order.**

10 A. Based on the Company’s 2011 IRP,¹ the Company proposes a renewable avoided
11 cost rate with a sufficiency period through 2017, and a deficiency period starting
12 in 2018. The demarcation of the deficiency period is based on the next utility
13 scale renewable resource acquisition in the 2011 IRP Action Plan, which is a 300
14 MW Wyoming wind resource. The Company has calculated a 20-year levelized
15 renewable avoided cost rate of \$52.51/megawatt-hour (“MWh”). This rate is
16 reflected in the proposed revisions to Schedule 37 included as exhibits to Mr.
17 Griswold’s testimony.

18 The Company also proposes to include integration costs in its standard and
19 renewable avoided cost rates for intermittent resources. The avoided cost
20 schedules included with this filing show an integration cost component of
21 \$9.70/MWh. The Company’s wind integration cost component was determined in

¹ *Re. PacifiCorp 2011 Integrated Resource Plan*, Docket LC 52, PacifiCorp’s 2011 Integrated Resource Plan (Mar. 31, 2011). The Company expects an acknowledgement order of its 2011 IRP prior to implementation of the revisions to Schedules 37 and 38 sponsored in this filing. Therefore, PacifiCorp has used the 2011 IRP as the basis for this filing even though the 2011 IRP is still pending before the Commission.

1 the 2010 Wind Integration Study (“Wind Study”), included in the 2011 IRP. The
2 inclusion of an integration avoided cost component is consistent with the
3 Commission’s adoption of a renewable avoided cost rate and its express
4 recognition of the usefulness of distinctions between base load and intermittent
5 QF resources in avoided cost rate options.²

6 **Q. Has the Company filed to update its standard avoided cost rate as a part of**
7 **this filing?**

8 A. No. Pursuant to OAR 860-029-0080, the Company plans to file an updated
9 standard avoided cost rate immediately after receiving an acknowledgement order
10 on the 2011 IRP from the Commission in Docket LC 52, or no later than March 4,
11 2012, which is two years from the date of the Company’s last Schedule 37
12 avoided cost update filing. Additionally, in order to reflect any changes
13 consistent with the Company’s update to its load and resource balance in the 2011
14 All-Source RFP proceeding (Docket UM 1540), the Company proposes to file
15 updated avoided costs reflecting changes to the demarcation point for the next
16 major avoidable resource, if necessary, at the conclusion, cancellation, or closure
17 of the 2011 All-Source RFP.

18 **Renewable Resource Avoided Cost Rate**

19 **Q. Has the Company developed a separate renewable resource avoided cost**
20 **rate?**

21 A. Yes. Consistent with the UM 1396 Phase II Order, the Company developed a
22 separate renewable resource avoided cost rate available to QFs that generate
23 qualifying electricity under Oregon’s renewable portfolio standard. The 20-year

² See Order No. 11-505 at p. 5.

1 levelized renewable Schedule 37 avoided cost rate included with this filing is
2 \$52.51/MWh. With the inclusion of integration costs, the price would be reduced
3 by \$9.70/MWh during the period of renewable sufficiency for a 20-year levelized
4 intermittent renewable Schedule 37 avoided cost price of \$48.11. I discuss the
5 inclusion of integration costs in detail below.

6 **Q. What sufficiency period is reflected in the Company's calculation?**

7 A. The renewable resource avoided cost rate reflects a sufficiency period through
8 2017 and a renewable resource deficiency period based on a utility scale
9 renewable resource acquisition identified in the Company's 2011 IRP Preferred
10 Portfolio.

11 **Q. Please describe the avoidable utility scale renewable resource used in your
12 calculation.**

13 A. The avoidable utility scale renewable resource used in the avoided cost
14 calculation was identified in the Company's 2011 IRP Preferred Portfolio as a 300
15 MW wind facility located in Wyoming.

16 **Q. Please describe how the Company calculated the renewable avoided cost rate
17 during the period of resource deficiency.**

18 A. For the period of resource deficiency, the Company used the capital costs
19 assumed in the 2011 IRP.³ For example, the total capital cost of the Wyoming
20 wind facility assumes a \$/kilowatt ("kW") of \$2,239.⁴ This capital cost amount,
21 plus fixed operation and maintenance costs are then used to calculate a

³ See PacifiCorp's 2011 IRP, at Page 117, Table 6.3.

⁴ *Id.* All figures from the 2011 IRP are reflected in 2010 real dollars. For the applicable start date of the deficiency period (2018) the Company escalated the 2011 IRP capital cost estimates using the official inflation forecast dated December 2011.

1 \$/megawatt-hour (“MWh”) based on the expected annual capacity factor (35
2 percent) of the Wyoming wind resource. Lastly, the Company utilized a Mid-C
3 market price weighting to develop an on-and-off peak deficiency period price.

4 **Q. Why does the Company reflect an on-and-off peak price during the period of**
5 **renewable deficiency?**

6 A. It is consistent with the standard avoided cost rates to reflect on-and-off peak
7 avoided cost prices during the period of deficiency.

8 **Q. During the period of renewable sufficiency did the Company calculate the**
9 **renewable avoided cost rate based on market prices?**

10 A. Yes. In the UM 1396 Phase II Order, the Commission found that during periods
11 of resource sufficiency, the rate should be based on market prices⁵ and under
12 Order No. 05-584⁶ in Docket UM 1129, when the Company is in a resource
13 sufficient position, avoided costs are to be valued based on monthly on- and -off
14 peak forward market prices as of the avoided cost filing.

15 **Q. How did the Company calculate market prices in the proposed renewable**
16 **avoided cost rate?**

17 A. The Company used its December 30, 2011 Official Forward Price Curve at the
18 Mid-Columbia (“Mid-C”) market hub to calculate market prices. The use of only
19 the Mid-C market hub is a refinement to the market price calculation done in past
20 avoided cost filings. Previously, the Company used a weighted average of the
21 Mid-C, Mona, California Oregon Border (“COB”), and Four Corners market
22 hubs, which was calculated using the Generation and Regulation Initiatives

⁵ Order No. 11-505 at p. 4.

⁶ Order No. 05-584 at pp. 27-28.

1 Decision ("GRID") model based on modeled front office transactions at the four
2 hubs. The Company has simplified the approach to produce a more
3 straightforward and transparent calculation of the avoided market prices of an
4 Oregon QF. By making this refinement, Schedule 37 avoided cost prices no
5 longer require information from the GRID model.

6 **Integration Costs Associated with Intermittent Renewable QF Resources**

7 **Q. Does the renewable avoided cost price at the beginning of the renewable**
8 **deficiency period in 2018 reflect integration costs?**

9 A. No. Because the Company's avoidable resource is a wind facility, the costs
10 associated with owning and operating a wind facility include the expectation that
11 the Company would incur wind integration costs during the deficiency period.
12 Therefore, an intermittent renewable QF that displaces the IRP wind facility does
13 not impose incremental integration charges during the deficiency period.

14 **Q. Does the Company include integration costs during the sufficiency period of**
15 **the renewable avoided cost rates for intermittent resources?**

16 A. Yes. During the period of renewable sufficiency, an intermittent renewable QF
17 does impose incremental integration costs because the Company does not plan to
18 build an intermittent facility until 2018. This approach is consistent with
19 excluding integration charges for an intermittent renewable QF during the
20 deficiency period.

21 **Q. Has the Company also added an integration charge for intermittent**
22 **renewable QF resources to its standard avoided cost rates?**

23 A. Yes. Regardless of whether the intermittent renewable QF chooses the standard

1 Schedule 37 rate or the renewable Schedule 37 rate, the Company is incurring the
2 costs of integration. Under the standard rate, the integration charge applies to the
3 entire price stream because the proxy resource is a natural gas CCCT and
4 integration charges are incremental in both the sufficiency and deficiency
5 periods.⁷

6 **Q. Was the inclusion of integration costs for intermittent renewable QFs**
7 **explicitly discussed in the UM 1396 Phase II Order?**

8 A. No. However, the Commission did distinguish between an intermittent and base
9 load renewable QF and further stated that this distinction should be recognized in
10 avoided cost rate options for renewable QFs.⁸ The Commission went on to state
11 that “a wind resource is intermittent and may not fairly represent the resource
12 value of a base load renewable resource.”⁹ The Company believes that these
13 findings, along with PURPA’s requirement that QF rates not exceed a utility’s
14 avoided costs, support inclusion of integration costs for intermittent renewable
15 QFs in the Company’s renewable and standard avoided cost rates.

16 **Q. If the renewable QF is a base load resource, will the Company reflect the**
17 **integration costs in the renewable or standard avoided cost rates?**

18 A. No.

19 **Q. Please describe the renewable technology types that would be considered an**
20 **intermittent renewable QF.**

21 A. The intermittent renewable QF technology types are wind and solar facilities. All

⁷ If an off-system intermittent renewable QF purchases integration services from a third-party transmission provider, such as the Bonneville Power Administration, the Company will not impose an integration cost component in either the renewable or standard Schedule 37 avoided cost rates.

⁸ Order No. 11-505, at Page p. 5.

⁹ *Id.*

PAC/100
Brown/10

1 other renewable QF technology types would be considered base load facilities.

2 **Q. Have you calculated illustrative prices for the various technology types under**
3 **the proposed standard and renewable avoided cost rates.**

4 A. Yes. Table 1 below illustrates the 20 year levelized prices under the currently
5 proposed standard and renewable avoided cost rates for four different technology
6 types: thermal, wind, solar, and hydro.

Table 1

Illustrative Schedule 37 Avoided Costs: 20 Yr Nominal Levelized (\$/MWH)

Resource Type	Capacity Factor	Standard		Renewable	
		Base-load	Intermittent	Base-load	Intermittent
Thermal	92%	\$60.77	n/a	\$55.63	n/a
Wind	34%	\$59.53	\$49.83	\$55.04	\$51.26
Solar	23%	\$68.04	\$58.34	\$59.05	\$55.27
Hydro	34%	\$60.76	n/a	\$55.62	n/a

7 **Standard Schedule 37 Update**

8 **Q. As previously mentioned, the Company plans to file to update its Schedule 37**
9 **standard avoided cost rates by March 4, 2012, consistent with OAR 860-029-**
10 **0080(3) and (8). Please explain why the Company is making a separate filing**
11 **to update its standard avoided cost rates.**

12 A. In the UM 1396 Phase II Order, the Commission indicated that it would consider
13 the renewable avoided cost filings in utility-specific evidentiary processes. This
14 process is not applicable to the Company's normal update to its standard avoided
15 costs. Instead, consistent with past practice, the Company plans to file this update

1 and seek a prompt effective date for the new standard avoided costs.¹⁰ The
2 Company will further update its standard avoided cost rates as necessary to
3 conform to the outcome of this proceeding.

4 **Q. For illustrative purposes, has the Company reflected its updated standard**
5 **avoided cost rates in this filing?**

6 A. Yes. This filing reflects the Company's new standard avoided cost rates based on
7 the load and resource balance and input assumptions in the Company's 2011 IRP
8 and the December 30, 2011 Official Forward Price Curve.

9 **Q. Does the Company also plan to update Schedule 37 at the conclusion of the**
10 **Company's 2011 All-Source RFP?**

11 A. Yes. The Company's 2011 IRP Revised Action Plan includes a provision that the
12 Company will update its load and resource balance in the 2011 All-Source RFP
13 proceeding (Docket UM 1540) before acquiring a new base load resource for
14 2016 through the RFP. With the Revised Action Plan language, and the
15 Company's commitment to look for all cost effective opportunities to defer the
16 2016 resource, it is consistent with Order No. 10-488¹¹ in Phase I of UM 1396 to
17 propose a demarcation point of 2016 for the deficiency period until and unless the
18 demarcation point changes. Therefore, the Company proposes that it be allowed
19 to file updated standard avoided costs reflecting changes to the demarcation point
20 for the next major avoidable resource, if necessary, at the conclusion,
21 cancellation, or closure of the 2011 All-Source RFP.

¹⁰ The Company's most recent update to its standard avoided costs, Advice No. 10-005, was filed on March 4, 2010, with an effective date of April 5, 2010.

¹¹ Order No. 10-488 found that for partially acknowledged plans or an acknowledged plan with a range of on-line years for the next major resource acquisition, the Commission directed that the utility offer its own proposal for the demarcation of resource sufficiency and deficiency.

PAC/100
Brown/12

1 Q. Is the Company's proposal to update avoided costs at the conclusion of the
2 2011 All-Source RFP also consistent with the UM 1396 Phase II Order?

3 A. Yes. The Commission determined that a project is avoidable until a utility makes
4 an irreversible commitment to acquire it. An irreversible commitment occurs
5 after the completion of the RFP process and the execution of contracts or
6 awarding of the project to the utility to build for itself.

7 Q. If the Company updates Schedule 37 for its standard avoided cost rates at
8 the conclusion of the 2011 All-Source RFP, would the Company also update
9 renewable avoided cost rates at that time?

10 A. Yes. The Company recommends that any future avoided cost filings reflect
11 consistent assumptions, methodologies and timing of updates in both the
12 renewable and standard avoided cost rates. It is important to reflect consistent
13 market price assumptions in both the standard and renewable Schedule 37 rates so
14 that the eligible renewable QF is making a choice between resource types and not
15 updated market price differences or other unrelated changes.

16 Q. Does this conclude your direct testimony?

17 A. Yes.

Docket No. UM-
Exhibit PAC/200
Witness: Bruce W. Griswold

**BEFORE THE PUBLIC UTILITY COMMISSION
OF THE STATE OF OREGON**

PACIFICORP

Direct Testimony of Bruce W. Griswold

February 2012

1 **Q. Please state your name, business address and present position with**
2 **PacifiCorp, dba Pacific Power (“the Company”).**

3 A. My name is Bruce W. Griswold. My business address is 825 NE Multnomah
4 Street, Suite 600, Portland, Oregon 97232. I am employed by PacifiCorp as
5 Director of Short-Term Origination and Qualifying Facility (“QF”) Contracts for
6 PacifiCorp Energy.

7 **Qualifications**

8 **Q. Briefly describe your education and business experience.**

9 A. I have a B.S. and M.S. degree in Agricultural Engineering from Montana State
10 University and Oregon State University, respectively. I have been employed by
11 PacifiCorp for over 25 years in various positions of responsibility in retail energy
12 services, engineering, marketing and wholesale energy services. I have also
13 worked in private industry and with an environmental firm as a project engineer.

14 My current responsibilities as Director of Short-term Origination and QF
15 Contracts include the negotiation and management of wholesale power supply and
16 resource acquisition through requests for proposals (“RFP”) as well as direct
17 responsibility for all PacifiCorp QF power purchase agreements. I have appeared
18 as a witness on behalf of PacifiCorp in multiple proceedings across its six state
19 jurisdictions.

20 **Purpose and Overview of Testimony**

21 **Q. What is the purpose of your testimony?**

22 A. The purpose of my testimony is to sponsor the major changes to Schedule 37,
23 “Avoided Cost Purchases from Qualifying Facilities of 10,000 kW or Less,” and

PAC/200
Griswold/2

1 Schedule 38, "Avoided Cost Purchases from Qualifying Facilities Of Greater than
2 10,000 kW," necessary to implement Order No.11-505 in Phase II of Docket UM
3 1396 ("UM 1396 Phase II Order"). The revised Schedules 37 and 38, marked and
4 unmarked for changes, are provided as Exhibits PAC/201- PAC/204. I also
5 sponsor the associated changes required to the Company's standard QF power
6 purchase agreements ("PPAs"). A summary of the revised pages to these PPAs is
7 provided as Exhibit PAC/205 and a sample PPA is provided as Exhibit PAC/206.
8 Lastly, I explain minor updates to Schedule 37 with respect to the applicable
9 market index. PacifiCorp's witness Ms. Kelcey Brown addresses the
10 methodology for determining the renewable resource avoided cost rates required
11 by the UM 1396 Phase II Order.

12 **Schedule 37**

13 **Q. Please describe the proposed changes to Schedule 37 required to implement**
14 **the UM 1396 Phase II Order.**

15 A. The UM 1396 Phase II Order provides a renewable resource QF the option to
16 select a renewable resource avoided cost price stream or a standard (non-
17 renewable) avoided cost price stream. The Company is proposing the following
18 changes to Schedule 37 to implement this Order:

- 19 • The Company adds definitions to Schedule 37 to differentiate renewable
20 resource QFs from standard QFs.
- 21 • The Company adds a new pricing option, "Renewable Fixed Avoided Cost
22 Prices," to Schedule 37, so that the schedule now has a total of six different
23 pricing options.

- 1 • The Company adds provisions to pricing options for intermittent QFs
2 incorporating the Company's integration costs for intermittent renewable
3 resources.
- 4 • The Avoided Cost Price table in Schedule 37 is expanded to include the
5 Renewable Fixed Avoided Cost Prices as well as demarcation lines separating
6 the sufficiency and deficiency periods for both the standard and renewable
7 avoided costs.
- 8 • Clarifications are made on the Schedule 37 procedure for information to be
9 provided by the QF when requesting a draft PPA.

10 **Q. Please explain the terms of the Renewable Fixed Avoided Cost pricing**
11 **option.**

12 A. Under Commission Order No. 05-584 at 20 in Docket UM 1129, a QF may
13 receive a fixed price option for only the first 15 years of the contract term, with a
14 market price option available for the remaining term of the contract (up to five
15 years). Consistent with this policy, Renewable Fixed Avoided Cost Prices are
16 available for the first 15 years of a PPA. Prices after the first 15 years (up to 20
17 years) will be based on the Firm Market Indexed Avoided Cost Prices. The
18 Renewable Fixed Avoided Cost pricing option is available only to renewable QFs
19 that qualify under the Oregon Renewable Portfolio Standard.¹

20 **Q. Please explain the approach to integration charges in the changes to Schedule**
21 **37.**

22 A. As explained in the testimony of Ms. Brown, the Company has included

¹ ORS 469A.010, 469A.020, and 469A.025.

1 integration charges for intermittent renewable QF resources in the Renewable
2 Fixed Avoided Cost pricing option. The integration charge calculation for this
3 price option includes an integration charge during the sufficiency period, but
4 excludes the charge during the deficiency period (using a wind resource as the
5 proxy resource, integration charges are incremental in the sufficiency period, but
6 not in the deficiency period).

7 The Company has also included an integration charge in the standard
8 pricing options for intermittent renewable QF resources. The calculation for these
9 pricing options includes an integration charge for the entire price stream (using a
10 natural gas plant as the proxy resource, integration charges are incremental
11 irrespective of resource sufficiency). Prices for a base load renewable QF
12 resource do not reflect integration charges under either the renewable or standard
13 pricing streams.

14 **Q. How has renewable energy certificate (“REC”) ownership changed under**
15 **Schedule 37?**

16 A. Consistent with the UM 1396 Phase II Order, under the renewable QF resource
17 pricing options, the QF will retain the ownership of the RECs during the
18 sufficiency period and will transfer RECs to PacifiCorp on January 1st of the first
19 year of the deficiency period through the remaining term of the PPA. A QF that
20 requests the standard pricing options will continue to retain the RECs for the
21 entire term of the PPA; consistent with current Commission policy.

1 Q. Has PacifiCorp changed the process that a proposed QF would follow under
2 Schedule 37?

3 A. No. All QFs will still follow the process and steps outlined in Schedule 37 as
4 described in the tariff. The only change is that the QF will have additional pricing
5 options to consider in their decision to request a PPA.

6 Q. Are there other changes you are proposing in Schedule 37?

7 A. Yes. The Company is updating Schedule 37 to incorporate a change to the
8 applicable market index. This change is necessary because the applicable market
9 index has not changed since the Company's July 2007 avoided cost filing and
10 therefore is in need of an update.

11 The first update is a change in the index used for the Market Index pricing
12 options. Under current Schedule 37, the Dow Jones Market Index is identified for
13 the Firm Market Index Avoided Cost Price and Non-firm Market Index Avoided
14 Cost Price. The Company proposes to switch to the Intercontinental Exchange
15 ("ICE") Market Index which is the Company's power market index for its trading
16 business, as well as the industry standard for power market trading across the
17 United States. The ICE index is free to the public and prices may be viewed at no
18 charge at: www.theice.com. PacifiCorp is no longer using the Dow Jones index
19 for its trading business as of December 31, 2009. As such, the Company has not
20 renewed its business license for the Dow Jones index and no longer can access the
21 index. The Company has already notified all its existing firm and non-firm QF
22 PPAs in Oregon of the change in indices and all are now using the ICE Market
23 Index.

1 In addition, while the ICE Market Index is widely used throughout the
2 industry for firm market prices, ICE does not publish a non-firm market index
3 price at the current time. To accommodate non-firm avoided cost price requests,
4 the Company proposes to use 93 percent of the firm day-ahead ICE market index
5 price. The seven percent discount in the firm market price accounts for the cost of
6 PacifiCorp supplying reserves to firm the power purchased from QFs at non-firm
7 prices.

8 **Schedule 38**

9 **Q. Please describe Schedule 38 and the Company's proposed changes.**

10 A. Schedule 38 outlines the steps, timelines and milestones for a large QF (greater
11 than 10,000 kW) to request pricing specific to their PURPA project and
12 subsequently request and negotiate a PPA. Schedule 38 uses the Schedule 37
13 renewable and standard avoided pricing options as the starting point for
14 calculating the avoided cost price stream for a larger QF. As such, all the choices
15 afforded to the QF under Schedule 37 regarding selection of the renewable or
16 standard avoided price options are also available to the Schedule 38 QF. Minimal
17 changes to the schedule are necessary but the Company has added references to
18 the UM 1368 Phase II Order and a requirement for the energy profile of the
19 proposed project to be provided along with the other general project information.
20 The energy profile is used to show how the project differs from the proxy in order
21 to calculate the indicative pricing. This information is already typically provided
22 with the project information.

1 **Q. Has the ownership of RECs changed under Schedule 38?**

2 A. Yes, depending upon the pricing option selected by the renewable QF. Consistent
3 with the UM 1396 Phase II Order, under the Renewable Resource Fixed Avoided
4 Cost pricing option, the renewable QF will retain the ownership of the RECs
5 during the sufficiency period and will transfer RECs to PacifiCorp on January 1st
6 of the first year of the deficiency period through the remaining term of the PPA.
7 A renewable QF that requests the standard pricing option will retain the RECs for
8 the term of the PPA consistent with current Commission policy.

9 **Q. Does the process that a proposed QF would follow under Schedule 38 change**
10 **under the revisions to the schedule sponsored in your testimony?**

11 A. No. All QFs will still follow the process and steps outlined in Schedule 38. The
12 only change is that a QF will have additional pricing options to consider in their
13 decision to request a PPA.

14 **Power Purchase Agreements**

15 **Q. Is the Company proposing a new PPA for a renewable QF resource under**
16 **Schedule 37?**

17 A. Yes. The Company proposes to prepare one additional PPA to address the
18 intermittent renewable QFs that are not directly interconnected to PacifiCorp's
19 electrical system delivering power to PacifiCorp through a third party
20 transmission provider. This new PPA will be in addition to the Company's
21 current five Schedule 37 PPA templates that have been approved by the
22 Commission and posted on the Company website. To accommodate the
23 renewable and standard pricing options proposed for Schedule 37, the Company

1 proposes minimal modification to the current PPA templates in order to comply
2 with the UM 1396 Phase II Order.

3 **Q. What is the proposed allowable PPA term for the renewable and the non-**
4 **renewable QF resources?**

5 A. PacifiCorp does not propose to make any changes to the allowed contract term of
6 the power purchase agreement under Schedule 37 or Schedule 38. As noted
7 above, under Commission Order No. 05-584 at 20, a QF may receive a fixed
8 price option for only the first 15 years of the contract term, with a market price
9 option available for the remaining term of the contract (up to five years).

10 **Q. Please describe how the current PPAs under Schedule 37 are applicable to**
11 **renewable resource QFs.**

12 A. The Company's five PPAs posted on the website to be used in conjunction with
13 Schedule 37 are:

- 14 1. Power Purchase Agreement for New QFs less than 10,000 kW – This PPA
15 is to be used with non-renewable QFs as well as base load renewable QFs.
- 16 2. Power Purchase Agreement for Existing QFs less than 10,000 kW – This
17 PPA is used with existing non-renewable and base load renewable QFs
18 that are seeking a new PPA because their current PPA will expire.
- 19 3. Power Purchase Agreement for Off-System QFs less than 10,000 kW –
20 This PPA is used for all non-renewable and base load renewable QFs not
21 directly interconnected to PacifiCorp's electrical system delivering power
22 to PacifiCorp through a third party transmission provider.

1 4. Power Purchase Agreement for Intermittent Renewable QF Resources (i.e.
2 Wind) less than 10,000 KW – This PPA is used for all intermittent
3 renewable QF resources.

4 5. Non-firm Power Purchase Agreement for QFs less than 10,000 KW – This
5 PPA is used for the non-renewable and renewable QF that is delivering
6 power on a non-firm basis, generally applicable to those projects that may
7 be self-supplying site load first and selling excess to PacifiCorp.

8 Each of the PPAs has been modified to incorporate the Pricing Options, REC
9 ownership and other changes in the revised Schedule 37 as outlined in my
10 testimony above. Exhibit PAC/205 is a table that summarizes the changes to be
11 made to each of the PPA templates. Exhibit PAC/206 is a marked version of the
12 Power Purchase Agreement for New QFs less than 10,000 kW to show the full
13 PPA with changes as an example.

14 **Q. How will PPAs change under Schedule 38 to comply with the UM 1396 Phase**
15 **II Order?**

16 A. There will be only minor changes to Schedule 38 PPAs. PacifiCorp's Schedule
17 38 PPA is a negotiated PPA with a QF greater than 10,000 kW. The PPA
18 complies with previous Commission orders but has flexibility to address
19 individual QF operational issues. The REC ownership under the renewable
20 resource pricing options will use the same terms and conditions as the Schedule
21 37 PPAs described above.

22 **Q. Does this conclude your direct testimony?**

23 A. Yes.

Docket No. UM-
Exhibit PAC/201
Witness: Bruce W. Griswold

**BEFORE THE PUBLIC UTILITY COMMISSION
OF THE STATE OF OREGON**

PACIFICORP

Exhibit Accompanying Direct Testimony of Bruce W. Griswold

Proposed Changes to Schedule 37 - Redline

February 2012

**AVOIDED COST PURCHASES FROM
QUALIFYING FACILITIES OF 10,000 KW OR LESS**

Available

To owners of Qualifying Facilities making sales of electricity to the Company in the State of Oregon.

Applicable

For power purchased from Qualifying Facilities with a nameplate capacity of 10,000 kW or less or that, together with any other electric generating facility using the same motive force, owned or controlled by the same person(s) or affiliated person(s), and located at the same site, has a nameplate capacity of 10,000 kW or less. Owners of these Qualifying Facilities will be required to enter into a written power sales contract with the Company.

Definitions

Cogeneration Facility

A facility which produces electric energy together with steam or other form of useful energy (such as heat) which are used for industrial, commercial, heating or cooling purposes through the sequential use of energy.

Qualifying Facilities

Qualifying cogeneration facilities or qualifying small power production facilities within the meaning of section 201 and 210 of the Public Utility Regulatory Policies Act of 1978 (PURPA), 16 U.S.C. 796 and 824a-3.

Qualifying Electricity

Electricity that meets the requirements of "qualifying electricity" set forth in the Oregon Renewable Portfolio Standards: ORS 469A.010, 469A.020, and 469A.025.

Renewable Qualifying Facility

A Qualifying Facility that generates Qualifying Electricity

Intermittent Renewable Qualifying Facility

A Renewable Qualifying Facility that generates Qualifying Electricity using wind energy, solar photovoltaic energy, or solar thermal energy.

Baseload Renewable Qualifying Facility

A Renewable Qualifying Facility that generates Qualifying Electricity as defined in ORS 469A.010 using geothermal energy, the biomass energy byproduct sources identified in ORS 469A.025(2); or the hydro sources identified in ORS 469A.025(4) and (5).

Small Power Production Facility

A facility which produces electric energy using as a primary energy source biomass, waste, renewable resources or any combination thereof and has a power production capacity which, together with other facilities located at the same site, is not greater than 80 megawatts.

On-Peak Hours or Peak Hours

On-peak hours are defined as 6:00 a.m. to 10:00 p.m. Pacific Prevailing Time Monday through Saturday, excluding NERC holidays.

Due to the expansions of Daylight Saving Time (DST) as adopted under Section 110 of the U.S. Energy Policy Act of 2005, the time periods shown above will begin and end one hour later for

(continued)

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~~the period between the second Sunday in March and the first Sunday in April and for the period between the last Sunday in October and the first Sunday in November.~~

~~Off-Peak Hours~~

~~All hours other than On-Peak.~~

~~West Side Gas Market Index~~

~~The monthly indexed gas price shall be the average of the price indexes published by Platts in "Inside FERC's Gas Market Report" monthly price report for Northwest Pipeline Corp. Reek Mountains, Northwest Pipeline Corp. Canadian Border, and Rockies/Northwest Starfield, OR.~~

~~Excess Output~~

~~Excess output shall mean any increment of Net Output delivered at a rate, on an hourly basis, exceeding the Facility Nameplate Capacity. PacifiCorp shall pay Seller the Off-peak Price as described and calculated under pricing option 5 for all Excess Output.~~

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P.U.C. OR No. 36

Issued February 17, 2011

Andrea L. Kelly, Vice President, Regulation

First Revision of Sheet No. 37-1

Canceling Original Sheet No. 37-1

Effective for service on and after March 22, 2011

Advice No. 11-002

Definitions (continued)

On-Peak Hours or Peak Hours (continued)

the period between the second Sunday in March and the first Sunday in April and for the period between the last Sunday in October and the first Sunday in November.

Off-Peak Hours

All hours other than On-Peak.

West Side Gas Market Index

The monthly indexed gas price shall be the average of the price indexes published by Platts in "Inside FERC's Gas Market Report" monthly price report for Northwest Pipeline Corp. Rock Mountains, Northwest Pipeline Corp. Canadian Border, and Rockies/Northwest Stanfield, OR.

Excess Output

Excess output shall mean any increment of Net Output delivered at a rate, on an hourly basis, exceeding the Facility Nameplate Capacity. PacifiCorp shall pay Seller the Off-peak Price as described and calculated under pricing option 5 for all Excess Output.

Same Site

Generating facilities are considered to be located at the same site as the QF for which qualification for the standard rates and standard contract is sought if they are located within a five-mile radius of any generating facilities or equipment providing fuel or motive force associated with the QF for which qualification for the standard rates and standard contract is sought.

Person(s) or Affiliated Person(s)

A natural person or persons or any legal entity or entities sharing common ownership, management or acting jointly or in concert with or exercising influence over the policies or actions of another person or entity. Two facilities will not be held to be owned or controlled by the same person(s) or affiliated person(s) solely because they are developed by a single entity. Two facilities will not be held to be owned or controlled by the same person(s) or affiliated person(s) if such common person or persons is a "passive investor" whose ownership interest in the QF is primarily related to utilizing production tax credits, green tag values and MACRS depreciation as the primary ownership benefit. A unit of Oregon local government may also be a "passive investor" if the local governmental unit demonstrates that it will not have an equity ownership interest in or exercise any control over the management of the QF and that its only interest is a share of the cash flow from the QF, which share will not exceed 20%. The 20% cash flow share limit may only be exceeded for good cause shown and only with the prior approval of the Commission.

Shared Interconnection and Infrastructure

QFs otherwise meeting the separate ownership test and thereby qualified for entitlement to the standard rates and standard contract will not be disqualified by utilizing an interconnection or other infrastructure not providing motive force or fuel that is shared with other QFs qualifying for the standard rates and standard contract so long as the use of the shared interconnection complies with the interconnecting utility's safety and reliability standards, interconnection contract requirements and Prudent Electrical Practices as that term is defined in the interconnecting utility's approved standard contract.

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~~Dispute Resolution~~

~~Upon request, the QF will provide the purchasing utility with documentation verifying the ownership, management and financial structure of the QF in reasonably sufficient detail to allow the utility to make an initial determination of whether or not the QF meets the above-described criteria for entitlement to the standard rates and standard contract. Any dispute concerning a QF's entitlement to the standard rates and standard contract shall be presented to the Commission for resolution.~~

Self-Supply Option

~~Owner shall elect to sell all Net Output to PacifiCorp and purchase its full electric requirements from PacifiCorp or sell Net Output surplus to its needs at the Facility site to PacifiCorp and purchase partial electric requirements service from PacifiCorp, in accordance with the terms and conditions of the power purchase agreement and the appropriate retail service.~~

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**AVOIDED COST PURCHASES FROM
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Dispute Resolution

Upon request, the QF will provide the purchasing utility with documentation verifying the ownership, management and financial structure of the QF in reasonably sufficient detail to allow the utility to make an initial determination of whether or not the QF meets the above-described criteria for entitlement to the standard rates and standard contract. Any dispute concerning a QF's entitlement to the standard rates and standard contract shall be presented to the Commission for resolution.

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Self Supply Option

Owner shall elect to sell all Net Output to PacifiCorp and purchase its full electric requirements from PacifiCorp or sell Net Output surplus to its needs at the Facility site to PacifiCorp and purchase partial electric requirements service from PacifiCorp, in accordance with the terms and conditions of the power purchase agreement and the appropriate retail service.

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Pricing Options

1. Standard Fixed Avoided Cost Prices

Prices are fixed at the time that the contract is signed by both the Qualifying Facility and the Company and will not change during the term of the contract. Standard Fixed Avoided Cost Prices are available for a contract term of up to 15 years and prices under a longer term contract (up to 20 years) will thereafter be under either the Firm Market Indexed, the Banded Gas Market Indexed or the Gas Market Indexed Avoided Cost pricing option. The Standard Fixed Avoided Cost pricing option is available to all Qualifying Facilities. The Standard Fixed Avoided Cost Price for Intermittent Renewable Qualifying Facilities will reflect integration costs for the sufficiency period, as set forth on page 5.

2. Renewable Fixed Avoided Cost Prices

Prices are fixed at the time that the contract is signed by both the Renewable Qualifying Facility and the Company and will not change during the term of the contract. Renewable Fixed Avoided Cost Prices are available for a contract term of up to 15 years and prices under a longer term contract (up to 20 years) will thereafter be the Firm Market Indexed Avoided Cost pricing. The Renewable Fixed Avoided Cost pricing option is available only to Renewable Qualifying Facilities. A Renewable Qualifying Facility choosing the Renewable Fixed Avoided Cost pricing option must cede all Renewable Energy Certificates generated by the facility to the Company during the deficiency period, as set forth on page 5.

3. Gas Market Indexed Avoided Cost Prices

Fixed prices apply during the resource sufficiency period (2012 through 2015), thereafter a portion of avoided cost prices are indexed to actual monthly West Side Gas Market Index prices. The remaining portion of avoided cost prices will be fixed at the time that the contract is signed by both the Qualifying Facility and the Company and will not change during the term of the contract. Prices are available for a term of up to 20 years. The Gas Market Indexed Avoided Cost pricing option is not available to Intermittent Renewable Qualifying Facilities under the Option 2 for years beyond fixed price period.

4. Banded Gas Market Indexed Avoided Cost Prices

Fixed prices apply during the resource sufficiency period (2010 through 2013), thereafter a portion of avoided cost prices are indexed to actual monthly West Side Gas Market Index prices. The remaining portion of avoided cost prices will be fixed at the time that the contract is signed by both the Qualifying Facility and the Company and will not change during the term of the

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~~contract. The gas indexed portion of the avoided cost prices are banded to limit the amount that prices can vary with changes in gas prices. Prices are available for a term of up to 20 years.~~

~~4. Firm Market Indexed Avoided Cost Prices~~

~~Firm market index avoided cost prices are available to Qualifying Facilities that contract to deliver firm power. Monthly on-peak / off-peak prices paid are a blending of Dow Jones Index Firm day ahead Mid-Columbia, California Oregon Border (COB), Four Corners and Palo Verde on-peak and off-peak prices. The monthly blending matrix is available upon request.~~

~~5. Non firm Market Index Avoided Cost Prices~~

~~Non-Firm market index avoided cost prices are available to Qualifying Facilities that do not elect to provide firm power. Qualifying Facilities taking this option will have contracts that do not include minimum delivery requirements, default damages for construction delay, for under delivery or early termination, or default security for these purposes. Monthly On-Peak / Off-Peak prices paid are a blending of Dow Jones Index Non-firm day ahead Mid-Columbia, California Oregon Border (COB), Four Corners and Palo Verde on-peak and off-peak prices. The monthly blending matrix is available upon request.~~

(continued)

**AVOIDED COST PURCHASES FROM
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Pricing Options (continued)

4. Banded Gas Market Indexed Avoided Cost Prices (continued)

contract. The gas indexed portion of the avoided cost prices are banded to limit the amount that prices can vary with changes in gas prices. Prices are available for a term of up to 20 years. The Banded Gas Market Indexed Avoided Cost pricing option is not available to Intermittent Renewable Qualifying Facilities for Option 2 for years beyond fixed price period.

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5. Firm Market Indexed Avoided Cost Prices

Firm market index avoided cost prices are available to Qualifying Facilities that contract to deliver firm power. Monthly on-peak / off-peak prices paid are the market index price for day-ahead firm energy at Mid-Columbia, as published in Intercontinental Exchange (ICE) Day Ahead Power Price Report, for the On-Peak and Off-Peak periods. The Firm Market Indexed Avoided Cost pricing option is available to all Qualifying Facilities. The Firm Market Indexed Avoided Cost Price for Intermittent Renewable Qualifying Facilities will reflect integration costs for the sufficiency period, as set forth on page 5.

6. Non-firm Market Index Avoided Cost Prices

Non-Firm market index avoided cost prices are available to Qualifying Facilities that do not elect to provide firm power. Qualifying Facilities taking this option will have contracts that do not include minimum delivery requirements, default damages for construction delay, for under delivery or early termination, or default security for these purposes. Monthly on-peak / off-peak non-firm prices paid are 93 percent of the market index price for day-ahead firm energy at Mid-Columbia, as published in Intercontinental Exchange (ICE) Day Ahead Power Price Report, for the On-Peak and Off-Peak periods. The Non-firm Market Indexed Avoided Cost pricing option is available to all Qualifying Facilities. The Non-firm Market Indexed Avoided Cost Price for Intermittent Renewable Qualifying Facilities will reflect integration costs for the sufficiency period, as set forth on page 5.

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Monthly Payments

A Qualifying Facility shall select the option of payment at the time of signing the contract under ~~one of three~~ the Pricing Options as specified above. Once an option is selected the option will remain in effect for the duration of the Facility's contract.

Renewable or Standard Fixed Avoided Cost Prices

In accordance with the terms of a contract with a Qualifying Facility, the Company shall pay for all separately metered kilowatt-hours of On-Peak and Off-Peak generation at the renewable or standard fixed prices as provided in this tariff. The definition of On-Peak and Off-Peak is as defined in the definitions section of this tariff.

Gas Market Indexed Avoided Cost Prices

In accordance with the terms of a contract with a Qualifying Facility, the Company shall pay for all separately metered kilowatt-hours of On-Peak and Off-Peak generation at On-Peak and Off-Peak prices calculated each month.

To calculate the Off-Peak price, multiply the West Side Gas Market Index price in \$/MMBtu by 0.696745 to get actual gas price in cents/kWh. The Off-Peak Energy Adder is added to the actual gas price to get the Off-Peak Price.

The On-Peak price is the Off-Peak price plus the On-Peak Capacity Adder.

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~~Banded Gas Indexed Avoided Cost Prices~~

~~In accordance with the terms of a contract with a Qualifying Facility, the Company shall pay for all separately metered kilowatt hours of On-Peak and Off-Peak generation at On-Peak and Off-Peak prices calculated each month.~~

~~To calculate the Off-Peak price, multiply the West Side Gas Market Index price in \$/MMBtu by 0.715 to get actual gas price in cents/kWh. This price is banded such that the actual gas price shall be no lower than the Gas Market Index Floor nor greater than the Gas Market Index Ceiling as listed in the price section of this tariff. The Off-Peak Energy Adder is added to the actual gas price to get the Off-Peak Price.~~

~~The On-Peak price is the Off-Peak price plus the On-Peak Capacity Adder.~~

~~Firm Market Indexed and Non-firm Market Index Avoided Cost Prices~~

~~In accordance with the terms of a contract with a Qualifying Facility, the Company shall pay for all separately metered kilowatt hours of On-Peak and Off-Peak generation at the market prices calculated at the time of delivery. The definition of On-Peak and Off-Peak is as defined in the definitions section of this tariff.~~

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**AVOIDED COST PURCHASES FROM
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Monthly Payments (continued)
Banded Gas Indexed Avoided Cost Prices

In accordance with the terms of a contract with a Qualifying Facility, the Company shall pay for all separately metered kilowatt-hours of On-Peak and Off-Peak generation at On-Peak and Off-Peak prices calculated each month.

To calculate the Off-Peak price, multiply the West Side Gas Market Index price in \$/MMBtu by 0.696 to get actual gas price in cents/kWh. This price is banded such that the actual gas price shall be no lower than the Gas Market Index Floor nor greater than the Gas Market Index Ceiling as listed in the price section of this tariff. The Off-Peak Energy Adder is added to the actual gas price to get the Off-Peak Price.

The On-Peak price is the Off-Peak price plus the On-Peak Capacity Adder.

Firm Market Indexed and Non-firm Market Index Avoided Cost Prices

In accordance with the terms of a contract with a Qualifying Facility, the Company shall pay for all separately metered kilowatt-hours of On-Peak and Off-Peak generation at the market prices calculated at the time of delivery. The definition of On-Peak and Off-Peak is as defined in the definitions section of this tariff.

Avoided Cost Prices
Pricing Option 1 – Fixed Avoided cost Prices ¢/kWh (1)

Deliveries During Calendar Year	On-Peak Energy Price	Off-Peak Energy Price
	(a)	(b)
20122010	2.945-12	3.952-26
20132011	3.615-51	2.674-21
20142012	3.935-87	2.974-36
20152013	4.266-14	3.144-50
20162014	6.707-96	3.936-10
20172015	6.999-16	4.176-27
20182016	7.348-39	4.476-46
20192017	7.688-60	4.766-65
20202018	7.658-87	4.686-87
20212019	7.948-76	4.926-74
20222020	8.408-85	5.326-70
20232021	8.669-33	5.527-23
20242022	8.649-84	5.457-70
20252023	8.879-33	5.617-15
20262024	9.179-03	5.866-81
20272025	9.469-47	6.087-22
20282026	9.699-65	6.257-36
20292027	9.909-68	6.407-35
20302028	10.0510-04	6.477-67

(1) The avoided cost price for intermittent resources will be reduced in each year by an integration fee of \$9.70/MWh (0.97 ¢/kWh).

Note: Solid line indicates the demarcation point between the sufficiency period and the deficiency period for purposes of calculating avoided cost prices.

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Avoided Cost Prices

Pricing Option 2 - Renewable Avoided Cost Prices ¢/kWh

<u>Deliveries</u> <u>During</u> <u>Calendar</u> <u>Year</u>	<u>Base Load Resource</u>		<u>Intermittent Resource (1)</u>	
	<u>On-Peak</u>	<u>Off-Peak</u>	<u>On-Peak</u>	<u>Off-Peak</u>
	<u>Energy</u> <u>Price</u>	<u>Energy</u> <u>Price</u>	<u>Energy</u> <u>Price</u>	<u>Energy</u> <u>Price</u>
<u>2012</u>	<u>2.94</u>	<u>2.26</u>	<u>1.97</u>	<u>1.29</u>
<u>2013</u>	<u>3.61</u>	<u>2.67</u>	<u>2.64</u>	<u>1.70</u>
<u>2014</u>	<u>3.93</u>	<u>2.97</u>	<u>2.96</u>	<u>2.00</u>
<u>2015</u>	<u>4.26</u>	<u>3.14</u>	<u>3.29</u>	<u>2.17</u>
<u>2016</u>	<u>4.61</u>	<u>3.33</u>	<u>3.64</u>	<u>2.36</u>
<u>2017</u>	<u>4.96</u>	<u>3.51</u>	<u>3.99</u>	<u>2.54</u>
<u>2018</u>	<u>6.83</u>	<u>5.09</u>	<u>6.83</u>	<u>5.09</u>
<u>2019</u>	<u>6.85</u>	<u>5.31</u>	<u>6.85</u>	<u>5.31</u>
<u>2020</u>	<u>6.95</u>	<u>5.41</u>	<u>6.95</u>	<u>5.41</u>
<u>2021</u>	<u>6.90</u>	<u>5.74</u>	<u>6.90</u>	<u>5.74</u>
<u>2022</u>	<u>7.02</u>	<u>5.85</u>	<u>7.02</u>	<u>5.85</u>
<u>2023</u>	<u>7.14</u>	<u>5.97</u>	<u>7.14</u>	<u>5.97</u>
<u>2024</u>	<u>7.25</u>	<u>6.10</u>	<u>7.25</u>	<u>6.10</u>
<u>2025</u>	<u>7.37</u>	<u>6.22</u>	<u>7.37</u>	<u>6.22</u>
<u>2026</u>	<u>7.49</u>	<u>6.34</u>	<u>7.49</u>	<u>6.34</u>
<u>2027</u>	<u>7.61</u>	<u>6.49</u>	<u>7.61</u>	<u>6.49</u>
<u>2028</u>	<u>7.76</u>	<u>6.61</u>	<u>7.76</u>	<u>6.61</u>
<u>2029</u>	<u>7.88</u>	<u>6.77</u>	<u>7.88</u>	<u>6.77</u>
<u>2030</u>	<u>8.02</u>	<u>6.91</u>	<u>8.02</u>	<u>6.91</u>

(1) During the renewable sufficiency period of 2012-2017, the avoided cost price for intermittent resources is reduced in each year by an integration fee of \$9.70/MWh (0.97 ¢/kWh).

Note: Solid line indicates the demarcation point between the sufficiency period and the deficiency period for purposes of calculating avoided cost prices and for determining Renewable Energy Credit ownership under the Renewable Fixed Avoided Cost pricing option.

Note: Renewable Qualifying Facilities choosing the Renewable Fixed Avoided Cost pricing option must cede Renewable Energy Certificates to the Company during the deficiency period.

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Avoided Cost Prices (Continued)

Pricing Option 32 – Gas Market Indexed Avoided Cost Prices c/kWh (4)

Deliveries During Calendar Year	Fixed Prices		Gas Market Index		Forecast West Side Gas Market Index Price (2) \$/MMBtu	Estimated Prices (3)	
	On-Peak Energy Price	Off-Peak Energy Price	On-Peak Capacity Adder (1)	Off-Peak Energy Adder		On-Peak Energy Price	Off-Peak Energy Price
	(a)	(b)	(c)	(d)	(e)	(f)	(g)
			Avoided Firm Capacity Costs / (0.876 * 88.660.4% * 57%)	Total Avoided Energy Costs - ((e) * 0.6960.715)		(g) + (c)	((e) * 0.6960.715) + (d)
2012 2010	5.122.94	3.952.26					
2013 2011	5.543.61	4.212.67					
2014 2012	5.873.93	4.362.97					
2015 2013	6.144.26	4.503.14					
2016 2014			4.862.77	0.691.38	\$4.666.64	6.707.96	3.936.10
2017 2015			4.892.82	0.721.49	\$4.956.84	6.998.16	4.176.27
2018 2016			2.871.92	0.721.41	\$5.387.07	7.348.39	4.476.46
2019 2017			2.931.96	0.731.41	\$5.797.32	7.688.60	4.766.65
2020 2018			2.981.99	0.741.44	\$5.667.60	7.658.87	4.686.97
2021 2019			3.032.03	0.751.45	\$5.987.40	7.948.76	4.926.74
2022 2020			3.082.06	0.771.47	\$6.537.44	8.408.85	5.326.70
2023 2021			3.142.10	0.801.53	\$6.787.97	8.669.33	5.527.23
2024 2022			2.143.20	0.811.59	\$6.668.55	8.649.84	5.457.70
2025 2023			3.252.18	0.831.51	\$6.877.89	8.879.33	5.617.15
2026 2024			3.312.24	0.841.45	\$7.217.50	9.179.03	5.866.81
2027 2025			3.372.25	0.871.51	\$7.497.98	9.469.17	6.087.22
2028 2026			3.442.29	0.901.52	\$7.698.17	9.699.65	6.257.36
2029 2027			3.502.33	0.941.57	\$7.858.08	9.909.68	6.407.35
2030 2028			3.572.37	0.961.64	\$7.928.43	10.0510.04	6.477.67
2031 2029			3.642.42	0.961.71	\$8.068.83	10.2110.43	6.578.02
2032 2030			3.712.46	0.981.78	\$8.219.15	10.4110.78	6.708.32
2033 2031			3.782.50	0.991.81	\$8.379.32	10.6010.98	6.828.48
2034 2032			3.862.55	1.021.84	\$8.539.49	10.8211.17	6.968.62

(1) Avoided Firm Capacity Costs are equal to the fixed costs of a SCCT as identified in the Company's 2011~~13~~ IRP.

(2) A heat rate of 0.6960.715 is used to adjust gas prices from \$/MMBtu to c/kWh

(3) Estimated avoided cost prices based upon forecast West Side Gas Market Index prices.
Actual prices will be calculated each month using actual index gas prices.

(4) The avoided cost price for intermittent resources will be reduced in each year by an integration fee of \$9.70/MWh.

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Avoided Cost Prices (Continued)

Pricing Option 43 – Banded Gas Market Indexed Avoided Cost Prices c/kWh (4)

Deliveries During Calendar Year	Fixed Prices		Banded Gas Market Index				Forecast West Side Gas Market Index Price (2) \$/MMBtu	Estimated Prices (3)	
	On-Peak Energy Price	Off-Peak Energy Price	On-Peak Capacity Adder (1)	Off-Peak Energy Adder	Gas Market Index			On-Peak Energy Price	Off-Peak Energy Price
					Floor	Ceiling			
					90%	110%			
(a)	(b)	(c)	(d)	(e)	(f)	(g)	(h)	(i)	
			Avoided Firm Capacity Costs / (0.876 * 90.466.6% * 57%)	Total Avoided Energy Costs - ((e) * 0.7150.696)	(g) * 0.715 0.896 * 90%	(g) * 0.7150.696 * 110%		(i) + (c)	MIN(MAX((g) * 0.7150.696 5), (e)), (f) + (d)
2012	2.945.4	2.263.9							
0	2	5							
2013	3.615.5	2.674.2							
1	4	4							
2014	3.935.8	2.974.3							
2	7	6							
2015	4.266.4	3.144.5							
3	4	0							
2016									
4			2.774.86	0.694.38	2.924.25	3.575.20	\$4.666.64	6.707.9	3.936.4
2017									
5			2.824.89	0.724.40	3.104.38	3.795.36	\$4.956.84	6.998.1	4.176.2
2018									
6			2.874.92	0.724.44	3.374.55	4.125.56	\$5.387.07	7.348.3	4.476.4
2019									
7			2.934.96	0.734.44	3.634.71	4.435.76	\$5.797.32	7.688.6	4.766.6
2020									
8			2.984.99	4.440.74	3.554.89	4.335.98	\$5.667.60	7.658.8	4.686.8
2021									
9			3.032.03	0.754.45	3.754.76	4.585.82	\$5.987.40	7.948.7	4.926.7
2022									
0			3.082.96	0.774.47	4.094.79	5.005.85	\$6.537.44	8.408.8	5.326.7
2023									
1			3.142.10	0.804.53	4.256.13	5.196.27	\$6.787.97	8.669.3	5.527.2
2024									
2			3.202.14	0.814.59	4.176.50	5.106.72	\$6.668.55	8.649.8	5.457.7
2025									
3			3.252.18	0.834.54	4.305.08	5.266.24	\$6.877.89	8.879.3	5.617.4
2026									
4			3.312.24	0.844.45	4.524.83	5.525.99	\$7.217.59	9.179.0	5.866.8
2027									
5			3.372.25	0.874.54	4.695.44	5.736.28	\$7.497.99	9.469.4	6.087.2
2028									
2			3.442.29	0.904.52	4.825.26	5.896.43	\$7.698.17	9.699.6	6.257.3

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						5	6
2020	202					9.689.9	7.956.4
7		2.333.50	0.941.57	4.925.20	6.016.36	\$7.858.08	0
2030	202					10.041	6.477.6
9		3.572.37	0.964.64	4.965.42	6.066.63	\$7.928.43	0.05
2031	202					10.211	6.579.0
9		3.642.42	0.964.74	5.055.68	6.176.94	\$8.068.83	9.43
2032	203					10.411	6.708.3
0		3.712.46	0.981.78	5.145.80	6.297.20	\$8.219.15	0.78
2033	203					10.601	6.828.4
1		3.782.50	0.991.81	5.246.00	6.417.33	\$8.379.32	0.98
2034	203					10.821	6.968.6
2		3.862.55	1.021.84	5.346.11	6.537.46	\$8.539.49	1.17

- (1) AVOIDED Firm Capacity Costs are equal to the fixed costs of a SCCT as identified in the Company's 2011 IRP.
- (2) A heat rate of 0.695746 is used to adjust gas prices from \$/MMBtu to ¢/kWh
- (3) Estimated avoided cost prices based upon forecast West Side Gas Market Index prices.
Actual prices will be calculated each month using actual index gas prices.
- (4) The avoided cost price for intermittent resources will be reduced in each year by an integration fee of \$9.70/MWh.

(continued)

**AVOIDED COST PURCHASES FROM
QUALIFYING FACILITIES OF 10,000 KW OR LESS**

Example of Gas Pricing Options available to the Qualifying Facility

An example of the two gas pricing options using different assumed gas prices is provided at the end of this tariff.

Qualifying Facilities Contracting Procedure

Interconnection and power purchase agreements are handled by different functions within the Company. Interconnection agreements (both transmission and distribution level voltages) are handled by the Company's transmission function (PacifiCorp Transmission Services) while power purchase agreements are handled by the Company's merchant function (PacifiCorp Commercial and Trading).

It is recommended that the owner initiate its request for interconnection 18 months ahead of the anticipated in-service date to allow time for studies, negotiation of agreements, engineering, procurement, and construction of the required interconnection facilities. Early application for interconnection will help ensure that necessary interconnection arrangements proceed in a timely manner on a parallel track with negotiation of the power purchase agreement.

1. Qualifying Facilities up to 10,000 kW

APPLICATION: To owners of existing or proposed QFs with a design capacity less than or equal to 10,000 kW who desire to make sales to the Company in the state of Oregon. Such owners will be required to enter into a written power purchase agreement with the Company pursuant to the procedures set forth below.

I. Process for Completing a Power Purchase Agreement

A. Communications

Unless otherwise directed by the Company, all communications to the Company regarding QF power purchase agreements should be directed in writing as follows:

PacifiCorp
Manager-QF Contracts
825 NE Multnomah St, Suite 600
Portland, Oregon 97232

The Company will respond to all such communications in a timely manner. If the Company is unable to respond on the basis of incomplete or missing information from the QF owner, the Company shall indicate what additional information is required. Thereafter, the Company will respond in a timely manner following receipt of all required information.

(continued)

**AVOIDED COST PURCHASES FROM
QUALIFYING FACILITIES OF 10,000 KW OR LESS**

B. Procedures

1. The Company's approved generic or standard form power purchase agreements may be obtained from the Company's website at www.pacificorp.com, or if the owner is unable to obtain it from the website, the Company will send a copy within seven days of a written request.
2. In order to obtain a project specific draft power purchase agreement the owner must provide in writing to the Company, general project information required for the completion of a power purchase agreement, including, but not limited to:
 - (a) demonstration of ability to obtain QF status;
 - (b) design capacity (MW), station service requirements, and net amount of power to be delivered to the Company's electric system;
 - (c) generation technology and other related technology applicable to the site;
 - (d) proposed site location;
 - (e) schedule of monthly power deliveries;
 - (f) calculation or determination of minimum and maximum annual deliveries;
 - (g) motive force or fuel plan;
 - (h) proposed commercial operation on-line date, interconnection completion date, and other significant dates required to complete the milestones;
 - (i) proposed contract term and pricing provisions as defined in this tariff (i.e., standard fixed price, renewable fixed price, gas, deadband, gas indexed);
 - (j) status of interconnection or transmission arrangements;
 - (k) point of delivery or interconnection;
3. The Company shall provide a draft power purchase agreement when all information described in Paragraph 2 above has been received in writing from the QF owner and verified by Company personnel. Within 15 business days following receipt of all information required in Paragraph 2, the Company will provide the owner with a draft power purchase agreement including current standard avoided cost prices and/or other optional pricing mechanisms as approved by the Oregon Public Utilities Commission in this Schedule 37.
4. If the owner desires to proceed with the power purchase agreement after reviewing the Company's draft power purchase agreement, it may request in writing that the Company prepare a final draft power purchase agreement. In connection with such request, the owner must provide the Company with any additional or clarified project information that the Company reasonably determines to be necessary for the preparation of a final draft power purchase agreement. Within 15 business days following receipt of all information requested by the Company in this paragraph 4, the Company will provide the owner with a final draft power purchase agreement.

(continued)

**AVOIDED COST PURCHASES FROM
QUALIFYING FACILITIES OF 10,000 KW OR LESS**

B. Procedures (continued)

- 5 After reviewing the final draft power purchase agreement, the owner may either prepare another set of written comments and proposals or approve the final draft power purchase agreement. If the owner prepares written comments and proposals the Company will respond in 15 business days to those comments and proposals.

6. When both parties are in full agreement as to all terms and conditions of the draft power purchase agreement, the Company will prepare and forward to the owner within 15 business days, a final executable version of the agreement. Following the Company's execution a completely executed copy will be returned to the owner. Prices and other terms and conditions in the power purchase agreement will not be final and binding until the power purchase agreement has been executed by both parties.

II. Process for Negotiating Interconnection Agreements

[NOTE: Section II applies only to QFs connecting directly to PacifiCorp's electrical system. An off-system QF should contact its local utility or transmission provider to determine the interconnection requirements and wheeling arrangement necessary to move the power to PacifiCorp's system.]

In addition to negotiating a power purchase agreement, QFs intending to make sales to the Company are also required to enter into an interconnection agreement that governs the physical interconnection of the project to the Company's transmission or distribution system. The Company's obligation to make purchases from a QF is conditioned upon the QF completing all necessary interconnection arrangements. It is recommended that the owner initiate its request for interconnection 18 months ahead of the anticipated in-service date to help ensure that necessary interconnection arrangements proceed in a timely manner on a parallel track with negotiation of the power purchase agreement.

Because of functional separation requirements mandated by the Federal Energy Regulatory Commission, interconnection and power purchase agreements are handled by different functions within the Company. Interconnection agreements (both transmission and distribution level voltages) are handled by the Company's transmission function (including but not limited to PacifiCorp Transmission Services) while power purchase agreements are handled by the Company's merchant function (including but not limited to PacifiCorp's Commercial and Trading Group).

(continued)

**AVOIDED COST PURCHASES FROM
QUALIFYING FACILITIES OF 10,000 KW OR LESS**

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II. Process for Negotiating Interconnection Agreements (continued)

A. Communications

Initial communications regarding interconnection agreements should be directed to the Company in writing as follows:

PacifiCorp
Director – Transmission Services
825 NE Multnomah St, Suite 1600
Portland, Oregon 97232

Based on the project size and other characteristics, the Company will direct the QF owner to the appropriate individual within the Company's transmission function who will be responsible for negotiating the interconnection agreement with the QF owner. Thereafter, the QF owner should direct all communications regarding interconnection agreements to the designated individual, with a copy of any written communications to the address set forth above.

B. Procedures

Generally, the interconnection process involves (1) initiating a request for interconnection, (2) undertaking studies to determine the system impacts associated with the interconnection and the design, cost, and schedules for constructing any necessary interconnection facilities, and (3) executing an interconnection agreement to address facility construction, testing, acceptance, ownership, operation and maintenance issues. Consistent with PURPA and Oregon Public Utility Commission regulations, the owner is responsible for all interconnection costs assessed by the Company on a nondiscriminatory basis. For interconnections impacting the Company's Transmission and Distribution System, the Company will process the interconnection application through PacifiCorp Transmission Services.

(continued)

**AVOIDED COST PURCHASES FROM
QUALIFYING FACILITIES OF 10,000 KW OR LESS**

Banded Gas Market Index

Year	Prices Listed in the Tariff				Example using assumed Gas Prices						Compared to Fixed Prices	
	On-Peak Capacity Adder	Off-Peak Energy Adder	Gas Market Index		Assumed Gas Price \$/MMBtu	Actual Energy Price	Fuel Index		Price Paid to QF		Off-Peak Price	On-Peak Price
			Floor 90%	Ceiling 110%			Floor / Ceiling Component	Type of Price	Off-Peak Price	On-Peak Price		
(a)	(b)	(c)	(d)	(e)	(f)	(g)	(h)	(i)	(j)	(k)	(l)	
					(e) x 0.696				(b) + (g)	(a) + (j)		
2016	2.77	0.69	2.92	3.57	\$2.00	1.39	2.92	Floor	3.61	6.38	3.93	6.70
					\$4.00	2.78	2.92	Floor	3.61	6.38		
					\$5.00	3.48	3.48	Actual	4.17	6.94		
					\$7.00	4.87	3.57	Ceiling	4.26	7.03		
					\$10.00	6.96	3.57	Ceiling	4.26	7.03		

Gas Market Method

Year	Prices Listed in the Tariff				Example using assumed Gas Prices						Compared to Fixed Prices	
	On-Peak Capacity Adder	Off-Peak Energy Adder	Fuel Index		Assumed Gas Price \$/MMBtu	Actual Energy Price	Fuel Index		Price Paid to QF		Off-Peak Price	On-Peak Price
			Floor 90%	Ceiling 110%			Floor / Ceiling Component	Type of Price	Off-Peak Price	On-Peak Price		
(a)	(b)	(c)	(d)	(e)	(f)	(g)	(h)	(i)	(j)	(k)	(l)	
					(e) x 0.696				(b) + (f)	(a) + (j)		
2016	2.77	0.69	Not Relevant		\$2.00	1.39			2.08	4.85	3.93	6.70
					\$4.00	2.78			3.47	6.24		
					\$5.00	3.48	Not Relevant		4.17	6.94		
					\$7.00	4.87			5.56	8.33		
					\$10.00	6.96			7.65	10.42		

**AVOIDED COST PURCHASES FROM
 QUALIFYING FACILITIES OF 10,000 KW OR LESS**
Example of Gas Pricing Options given Assumed Gas Prices ¢/kWh

Banded Gas Market Index												
Year	Prices Listed in the Tariff				Example using assumed Gas Prices						Compared to Fixed Prices	
	On-Peak Capacity Adder	Off-Peak Energy Adder	Gas Market Index		Assumed Gas Price \$/MMBtu	Actual Energy Price	Fuel Index		Price Paid to QF		Off-Peak Price	On-Peak Price
			Floor 90%	Ceiling 110%			Floor / Ceiling Component	Type of Price	Off-Peak Price	On-Peak Price		
(a)	(b)	(c)	(d)	(e)	(f)	(g)	(h)	(i)	(j)	(k)	(l)	
					(e) x 0.715			(i) + (j)	(k) + (l)			
2014	1.86	1.38	4.25	5.20	\$3.00	2.15	4.25	Floor	5.63	7.49	6.10	7.96
					\$5.00	3.58	4.25	Floor	5.63	7.49		
					\$7.00	5.01	5.01	Actual	6.39	8.25		
					\$9.00	6.44	5.20	Ceiling	6.58	8.44		
					\$12.00	8.58	5.20	Ceiling	6.58	8.44		

Gas Market Method												
Year	Prices Listed in the Tariff				Example using assumed Gas Prices						Compared to Fixed Prices	
	On-Peak Capacity Adder	Off-Peak Energy Adder	Fuel Index		Assumed Gas Price \$/MMBtu	Actual Energy Price	Fuel Index		Price Paid to QF		Off-Peak Price	On-Peak Price
			Floor 90%	Ceiling 110%			Floor / Ceiling Component	Type of Price	Off-Peak Price	On-Peak Price		
(a)	(b)	(c)	(d)	(e)	(f)	(g)	(h)	(i)	(j)	(k)	(l)	
					(e) x 0.715			(i) + (j)	(k) + (l)			
2014	1.86	1.38	Not Relevant		\$3.00	2.15			3.53	5.39	6.10	7.96
					\$5.00	3.58			4.96	6.82		
					\$7.00	5.01	Not Relevant		6.39	8.25		
					\$9.00	6.44			7.82	9.68		
					\$12.00	8.58			9.96	11.82		

Docket No. UM-
Exhibit PAC/202
Witness: Bruce W. Griswold

**BEFORE THE PUBLIC UTILITY COMMISSION
OF THE STATE OF OREGON**

PACIFICORP

Exhibit Accompanying Direct Testimony of Bruce W. Griswold

Proposed Changes to Schedule 37 - Clean

February 2012

**AVOIDED COST PURCHASES FROM
QUALIFYING FACILITIES OF 10,000 KW OR LESS**

Available

To owners of Qualifying Facilities making sales of electricity to the Company in the State of Oregon.

Applicable

For power purchased from Qualifying Facilities with a nameplate capacity of 10,000 kW or less or that, together with any other electric generating facility using the same motive force, owned or controlled by the same person(s) or affiliated person(s), and located at the same site, has a nameplate capacity of 10,000 kW or less. Owners of these Qualifying Facilities will be required to enter into a written power sales contract with the Company.

Definitions

Cogeneration Facility

A facility which produces electric energy together with steam or other form of useful energy (such as heat) which are used for industrial, commercial, heating or cooling purposes through the sequential use of energy.

Qualifying Facilities

Qualifying cogeneration facilities or qualifying small power production facilities within the meaning of section 201 and 210 of the Public Utility Regulatory Policies Act of 1978 (PURPA), 16 U.S.C. 796 and 824a-3.

Qualifying Electricity

Electricity that meets the requirements of "qualifying electricity" set forth in the Oregon Renewable Portfolio Standards: ORS 469A.010, 469A.020, and 469A.025.

Renewable Qualifying Facility

A Qualifying Facility that generates Qualifying Electricity

Intermittent Renewable Qualifying Facility

A Renewable Qualifying Facility that generates Qualifying Electricity using wind energy, solar photovoltaic energy, or solar thermal energy.

Baseload Renewable Qualifying Facility

A Renewable Qualifying Facility that generates Qualifying Electricity as defined in ORS.469A.010 using geothermal energy, the biomass energy byproduct sources identified in ORS 469A.025(2); or the hydro sources identified in ORS 469A.025(4) and (5).

Small Power Production Facility

A facility which produces electric energy using as a primary energy source biomass, waste, renewable resources or any combination thereof and has a power production capacity which, together with other facilities located at the same site, is not greater than 80 megawatts.

On-Peak Hours or Peak Hours

On-peak hours are defined as 6:00 a.m. to 10:00 p.m. Pacific Prevailing Time Monday through Saturday, excluding NERC holidays.

Due to the expansions of Daylight Saving Time (DST) as adopted under Section 110 of the U.S. Energy Policy Act of 2005, the time periods shown above will begin and end one hour later for

(continued)

Definitions (continued)

On-Peak Hours or Peak Hours (continued)

the period between the second Sunday in March and the first Sunday in April and for the period between the last Sunday in October and the first Sunday in November.

Off-Peak Hours

All hours other than On-Peak.

West Side Gas Market Index

The monthly indexed gas price shall be the average of the price indexes published by Platts in "Inside FERC's Gas Market Report" monthly price report for Northwest Pipeline Corp. Rock Mountains, Northwest Pipeline Corp. Canadian Border, and Rockies/Northwest Stanfield, OR.

Excess Output

Excess output shall mean any increment of Net Output delivered at a rate, on an hourly basis, exceeding the Facility Nameplate Capacity. PacifiCorp shall pay Seller the Off-peak Price as described and calculated under pricing option 5 for all Excess Output.

Same Site

Generating facilities are considered to be located at the same site as the QF for which qualification for the standard rates and standard contract is sought if they are located within a five-mile radius of any generating facilities or equipment providing fuel or motive force associated with the QF for which qualification for the standard rates and standard contract is sought.

Person(s) or Affiliated Person(s)

A natural person or persons or any legal entity or entities sharing common ownership, management or acting jointly or in concert with or exercising influence over the policies or actions of another person or entity. Two facilities will not be held to be owned or controlled by the same person(s) or affiliated person(s) solely because they are developed by a single entity. Two facilities will not be held to be owned or controlled by the same person(s) or affiliated person(s) if such common person or persons is a "passive investor" whose ownership interest in the QF is primarily related to utilizing production tax credits, green tag values and MACRS depreciation as the primary ownership benefit. A unit of Oregon local government may also be a "passive investor" if the local governmental unit demonstrates that it will not have an equity ownership interest in or exercise any control over the management of the QF and that its only interest is a share of the cash flow from the QF, which share will not exceed 20%. The 20% cash flow share limit may only be exceeded for good cause shown and only with the prior approval of the Commission.

Shared Interconnection and Infrastructure

QFs otherwise meeting the separate ownership test and thereby qualified for entitlement to the standard rates and standard contract will not be disqualified by utilizing an interconnection or other infrastructure not providing motive force or fuel that is shared with other QFs qualifying for the standard rates and standard contract so long as the use of the shared interconnection complies with the interconnecting utility's safety and reliability standards, interconnection contract requirements and Prudent Electrical Practices as that term is defined in the interconnecting utility's approved standard contract.

(continued)

**AVOIDED COST PURCHASES FROM
QUALIFYING FACILITIES OF 10,000 KW OR LESS**

Dispute Resolution

Upon request, the QF will provide the purchasing utility with documentation verifying the ownership, management and financial structure of the QF in reasonably sufficient detail to allow the utility to make an initial determination of whether or not the QF meets the above-described criteria for entitlement to the standard rates and standard contract. Any dispute concerning a QF's entitlement to the standard rates and standard contract shall be presented to the Commission for resolution.

Self Supply Option

Owner shall elect to sell all Net Output to PacifiCorp and purchase its full electric requirements from PacifiCorp or sell Net Output surplus to its needs at the Facility site to PacifiCorp and purchase partial electric requirements service from PacifiCorp, in accordance with the terms and conditions of the power purchase agreement and the appropriate retail service.

Pricing Options

1. Standard Fixed Avoided Cost Prices

Prices are fixed at the time that the contract is signed by both the Qualifying Facility and the Company and will not change during the term of the contract. Standard Fixed Avoided Cost Prices are available for a contract term of up to 15 years and prices under a longer term contract (up to 20 years) will thereafter be under either the Firm Market Indexed, the Banded Gas Market Indexed or the Gas Market Indexed Avoided Cost pricing option. The Standard Fixed Avoided Cost pricing option is available to all Qualifying Facilities. The Standard Fixed Avoided Cost Price for Intermittent Renewable Qualifying Facilities will reflect integration costs for the sufficiency period, as set forth on page 5.

2. Renewable Fixed Avoided Cost Prices

Prices are fixed at the time that the contract is signed by both the Renewable Qualifying Facility and the Company and will not change during the term of the contract. Renewable Fixed Avoided Cost Prices are available for a contract term of up to 15 years and prices under a longer term contract (up to 20 years) will thereafter be by the Firm Market Indexed Avoided Cost pricing. The Renewable Fixed Avoided Cost pricing option is available only to Renewable Qualifying Facilities. A Renewable Qualifying Facility choosing the Renewable Fixed Avoided Cost pricing option must cede all Renewable Energy Certificates generated by the facility to the Company during the deficiency period, as set forth on page 5.

3. Gas Market Indexed Avoided Cost Prices

Fixed prices apply during the resource sufficiency period (2012 through 2015), thereafter a portion of avoided cost prices are indexed to actual monthly West Side Gas Market Index prices. The remaining portion of avoided cost prices will be fixed at the time that the contract is signed by both the Qualifying Facility and the Company and will not change during the term of the contract. Prices are available for a term of up to 20 years. The Gas Market Indexed Avoided Cost pricing option is not available to Intermittent Renewable Qualifying Facilities under the Option 2 for years beyond fixed price period.

4. Banded Gas Market Indexed Avoided Cost Prices

Fixed prices apply during the resource sufficiency period (2010 through 2013), thereafter a portion of avoided cost prices are indexed to actual monthly West Side Gas Market Index prices. The remaining portion of avoided cost prices will be fixed at the time that the contract is signed by both the Qualifying Facility and the Company and will not change during the term of the

(continued)

**AVOIDED COST PURCHASES FROM
QUALIFYING FACILITIES OF 10,000 KW OR LESS**

Page 4

Pricing Options (continued)

4. Banded Gas Market Indexed Avoided Cost Prices (continued)

contract. The gas indexed portion of the avoided cost prices are banded to limit the amount that prices can vary with changes in gas prices. Prices are available for a term of up to 20 years. The Banded Gas Market Indexed Avoided Cost pricing option is not available to Intermittent Renewable Qualifying Facilities for Option 2 for years beyond fixed price period.

5. Firm Market Indexed Avoided Cost Prices

Firm market index avoided cost prices are available to Qualifying Facilities that contract to deliver firm power. Monthly on-peak / off-peak prices paid are the market index price for day-ahead firm energy at Mid-Columbia, as published in Intercontinental Exchange (ICE) Day Ahead Power Price Report, for the On-Peak and Off-Peak periods. The Firm Market Indexed Avoided Cost pricing option is available to all Qualifying Facilities. The Firm Market Indexed Avoided Cost Price for Intermittent Renewable Qualifying Facilities will reflect integration costs for the sufficiency period, as set forth on page 5.

6. Non-firm Market Index Avoided Cost Prices

Non- Firm market index avoided cost prices are available to Qualifying Facilities that do not elect to provide firm power. Qualifying Facilities taking this option will have contracts that do not include minimum delivery requirements, default damages for construction delay, for under delivery or early termination, or default security for these purposes. Monthly on-peak / off-peak non-firm prices paid are 93 percent of the market index price for day-ahead firm energy at Mid-Columbia, as published in Intercontinental Exchange (ICE) Day Ahead Power Price Report, for the On-Peak and Off-Peak periods. The Non-firm Market Indexed Avoided Cost pricing option is available to all Qualifying Facilities. The Non-firm Market Indexed Avoided Cost Price for Intermittent Renewable Qualifying Facilities will reflect integration costs for the sufficiency period, as set forth on page 5.

Monthly Payments

A Qualifying Facility shall select the option of payment at the time of signing the contract under the Pricing Options as specified above. Once an option is selected the option will remain in effect for the duration of the Facility's contract.

Renewable or Standard Fixed Avoided Cost Prices

In accordance with the terms of a contract with a Qualifying Facility, the Company shall pay for all separately metered kilowatt-hours of On-Peak and Off-Peak generation at the renewable or standard fixed prices as provided in this tariff. The definition of On-Peak and Off-Peak is as defined in the definitions section of this tariff.

Gas Market Indexed Avoided Cost Prices

In accordance with the terms of a contract with a Qualifying Facility, the Company shall pay for all separately metered kilowatt-hours of On-Peak and Off-Peak generation at On-Peak and Off-Peak prices calculated each month.

To calculate the Off-Peak price, multiply the West Side Gas Market Index price in \$/MMBtu by 0.696 to get actual gas price in cents/kWh. The Off-Peak Energy Adder is added to the actual gas price to get the Off-Peak Price.

The On-Peak price is the Off-Peak price plus the On-Peak Capacity Adder.

(continued)

**AVOIDED COST PURCHASES FROM
 QUALIFYING FACILITIES OF 10,000 KW OR LESS**
Monthly Payments (continued)
Banded Gas Indexed Avoided Cost Prices

In accordance with the terms of a contract with a Qualifying Facility, the Company shall pay for all separately metered kilowatt-hours of On-Peak and Off-Peak generation at On-Peak and Off-Peak prices calculated each month.

To calculate the Off-Peak price, multiply the West Side Gas Market Index price in \$/MMBtu by 0.696 to get actual gas price in cents/kWh. This price is banded such that the actual gas price shall be no lower than the Gas Market Index Floor nor greater than the Gas Market Index Ceiling as listed in the price section of this tariff. The Off-Peak Energy Adder is added to the actual gas price to get the Off-Peak Price.

The On-Peak price is the Off-Peak price plus the On-Peak Capacity Adder.

Firm Market Indexed and Non-firm Market Index Avoided Cost Prices

In accordance with the terms of a contract with a Qualifying Facility, the Company shall pay for all separately metered kilowatt-hours of On-Peak and Off-Peak generation at the market prices calculated at the time of delivery. The definition of On-Peak and Off-Peak is as defined in the definitions section of this tariff.

Avoided Cost Prices
Pricing Option 1 – Fixed Avoided cost Prices ¢/kWh (1)

Deliveries During Calendar Year	On-Peak Energy Price	Off-Peak Energy Price
	(a)	(b)
2012	2.94	2.26
2013	3.61	2.67
2014	3.93	2.97
2015	4.26	3.14
2016	6.70	3.93
2017	6.99	4.17
2018	7.34	4.47
2019	7.68	4.76
2020	7.65	4.68
2021	7.94	4.92
2022	8.40	5.32
2023	8.66	5.52
2024	8.64	5.45
2025	8.87	5.61
2026	9.17	5.86
2027	9.46	6.08
2028	9.69	6.25
2029	9.90	6.40
2030	10.05	6.47

(1) The avoided cost price for intermittent resources will be reduced in each year by an integration fee of \$9.70/MWh (0.97 ¢/kWh).

Note: Solid line indicates the demarcation point between the sufficiency period and the deficiency period for purposes of calculating avoided cost prices.

(continued)

**AVOIDED COST PURCHASES FROM
 QUALIFYING FACILITIES OF 10,000 KW OR LESS**
**Avoided Cost Prices
 Pricing Option 2 – Renewable Avoided Cost Prices ¢/kWh**

Deliveries During Calendar Year	Base Load Resource		Intermittent Resource (1)	
	On-Peak Energy Price	Off-Peak Energy Price	On-Peak Energy Price	Off-Peak Energy Price
2012	2.94	2.26	1.97	1.29
2013	3.61	2.67	2.64	1.70
2014	3.93	2.97	2.96	2.00
2015	4.26	3.14	3.29	2.17
2016	4.61	3.33	3.64	2.36
2017	4.96	3.51	3.99	2.54
2018	6.83	5.09	6.83	5.09
2019	6.85	5.31	6.85	5.31
2020	6.95	5.41	6.95	5.41
2021	6.90	5.74	6.90	5.74
2022	7.02	5.85	7.02	5.85
2023	7.14	5.97	7.14	5.97
2024	7.25	6.10	7.25	6.10
2025	7.37	6.22	7.37	6.22
2026	7.49	6.34	7.49	6.34
2027	7.61	6.49	7.61	6.49
2028	7.76	6.61	7.76	6.61
2029	7.88	6.77	7.88	6.77
2030	8.02	6.91	8.02	6.91

(1) During the renewable sufficiency period of 2012-2017, the avoided cost price for intermittent resources is reduced in each year by an integration fee of \$9.70/MWh (0.97 ¢/kWh).

Note: Solid line indicates the demarcation point between the sufficiency period and the deficiency period for purposes of calculating avoided cost prices and for determining Renewable Energy Credit ownership under the Renewable Fixed Avoided Cost pricing option.

Note: Renewable Qualifying Facilities choosing the Renewable Fixed Avoided Cost pricing option must cede Renewable Energy Certificates to the Company during the deficiency period.

(continued)

**AVOIDED COST PURCHASES FROM
 QUALIFYING FACILITIES OF 10,000 KW OR LESS**
Avoided Cost Prices (Continued)
Pricing Option 3 – Gas Market Indexed Avoided Cost Prices ¢/kWh (4)

Deliveries	Fixed Prices		Gas Market Index		Forecast	Estimated Prices (3)	
	On-Peak	Off-Peak	On-Peak	Off-Peak		West Side Gas	On-Peak
During	Energy	Energy	Capacity	Energy	Market Index	Energy	Energy
Calendar	Price	Price	Adder (1)	Adder	Price (2)	Price	Price
Year	(a)	(b)	(c)	(d)	(e)	(f)	(g)
			Avoided Firm Capacity Costs / (0.876 * 88.6% * 57%)	Total Avoided Energy Costs - ((e) *0.696)		(g) + (c)	((e) *0.696) + (d)
2012	2.94	2.26					
2013	3.61	2.67					
2014	3.93	2.97					
2015	4.26	3.14					
2016			2.77	0.69	\$4.66	6.70	3.93
2017			2.82	0.72	\$4.95	6.99	4.17
2018			2.87	0.72	\$5.38	7.34	4.47
2019			2.93	0.73	\$5.79	7.68	4.76
2020			2.98	0.74	\$5.66	7.65	4.68
2021			3.03	0.75	\$5.98	7.94	4.92
2022			3.08	0.77	\$6.53	8.40	5.32
2023			3.14	0.80	\$6.78	8.66	5.52
2024			3.20	0.81	\$6.66	8.64	5.45
2025			3.25	0.83	\$6.87	8.87	5.61
2026			3.31	0.84	\$7.21	9.17	5.86
2027			3.37	0.87	\$7.49	9.46	6.08
2028			3.44	0.90	\$7.69	9.69	6.25
2029			3.50	0.94	\$7.85	9.90	6.40
2030			3.57	0.96	\$7.92	10.05	6.47
2031			3.64	0.96	\$8.06	10.21	6.57
2032			3.71	0.98	\$8.21	10.41	6.70
2033			3.78	0.99	\$8.37	10.60	6.82
2034			3.86	1.02	\$8.53	10.82	6.96

- (1) Avoided Firm Capacity Costs are equal to the fixed costs of a SCCT as identified in the Company's 2011 IRP.
- (2) A heat rate of 0.696 is used to adjust gas prices from \$/MMBtu to ¢/kWh
- (3) Estimated avoided cost prices based upon forecast West Side Gas Market Index prices.
Actual prices will be calculated each month using actual index gas prices.
- (4) The avoided cost price for intermittent resources will be reduced in each year by an integration fee of \$9.70/MWh.

(continued)

**AVOIDED COST PURCHASES FROM
 QUALIFYING FACILITIES OF 10,000 KW OR LESS**
Avoided Cost Prices (Continued)
Pricing Option 4 – Banded Gas Market Indexed Avoided Cost Prices c/kWh (4)

Deliveries During Calendar Year	Fixed Prices		Banded Gas Market Index				Forecast West Side Gas Market Index Price (2) \$/MMBtu	Estimated Prices (3)	
	On-Peak Energy Price	Off-Peak Energy Price	On-Peak Capacity Adder (1)	Off-Peak Energy Adder	Gas Market Index			On-Peak Energy Price	Off-Peak Energy Price
					Floor	Ceiling			
					90%	110%			
(a)	(b)	(c)	(d)	(e)	(f)	(g)	(h)	(i)	
			Avoided Firm Capacity Costs / (0.876 * 88.6% * 57%)	Total Avoided Energy Costs - ((e) * 0.696)	(g) * 0.696 * 90%	(g) * 0.696 * 110%		(i) + (c)	MIN(MAX((g) * 0.696), (e)), (f) + (d)
2012	2.94	2.26							
2013	3.61	2.67							
2014	3.93	2.97							
2015	4.26	3.14							
					Market Based Prices 2012 through 2015				
2016			2.77	0.69	2.92	3.57	\$4.66	6.70	3.93
2017			2.82	0.72	3.10	3.79	\$4.95	6.99	4.17
2018			2.87	0.72	3.37	4.12	\$5.38	7.34	4.47
2019			2.93	0.73	3.63	4.43	\$5.79	7.68	4.76
2020			2.98	0.74	3.55	4.33	\$5.66	7.65	4.68
2021			3.03	0.75	3.75	4.58	\$5.98	7.94	4.92
2022			3.08	0.77	4.09	5.00	\$6.53	8.40	5.32
2023			3.14	0.80	4.25	5.19	\$6.78	8.66	5.52
2024			3.20	0.81	4.17	5.10	\$6.66	8.64	5.45
2025			3.25	0.83	4.30	5.26	\$6.87	8.87	5.61
2026			3.31	0.84	4.52	5.52	\$7.21	9.17	5.86
2027			3.37	0.87	4.69	5.73	\$7.49	9.46	6.08
2028			3.44	0.90	4.82	5.89	\$7.69	9.69	6.25
2029			3.50	0.94	4.92	6.01	\$7.85	9.90	6.40
2030			3.57	0.96	4.96	6.06	\$7.92	10.05	6.47
2031			3.64	0.96	5.05	6.17	\$8.06	10.21	6.57
2032			3.71	0.98	5.14	6.29	\$8.21	10.41	6.70
2033			3.78	0.99	5.24	6.41	\$8.37	10.60	6.82
2034			3.86	1.02	5.34	6.53	\$8.53	10.82	6.96

- (1) Avoided Firm Capacity Costs are equal to the fixed costs of a SCCT as identified in the Company's 2011 IRP.
- (2) A heat rate of 0.696 is used to adjust gas prices from \$/MMBtu to c/kWh
- (3) Estimated avoided cost prices based upon forecast West Side Gas Market Index prices.
Actual prices will be calculated each month using actual index gas prices.
- (4) The avoided cost price for intermittent resources will be reduced in each year by an integration fee of \$9.70/MWh.

(continued)



**OREGON
SCHEDULE 37**

**AVOIDED COST PURCHASES FROM
QUALIFYING FACILITIES OF 10,000 KW OR LESS**

Example of Gas Pricing Options available to the Qualifying Facility

An example of the two gas pricing options using different assumed gas prices is provided at the end of this tariff.

Qualifying Facilities Contracting Procedure

Interconnection and power purchase agreements are handled by different functions within the Company. Interconnection agreements (both transmission and distribution level voltages) are handled by the Company's transmission function (PacifiCorp Transmission Services) while power purchase agreements are handled by the Company's merchant function (PacifiCorp Commercial and Trading).

It is recommended that the owner initiate its request for interconnection 18 months ahead of the anticipated in-service date to allow time for studies, negotiation of agreements, engineering, procurement, and construction of the required interconnection facilities. Early application for interconnection will help ensure that necessary interconnection arrangements proceed in a timely manner on a parallel track with negotiation of the power purchase agreement.

1. Qualifying Facilities up to 10,000 kW

APPLICATION: To owners of existing or proposed QFs with a design capacity less than or equal to 10,000 kW who desire to make sales to the Company in the state of Oregon. Such owners will be required to enter into a written power purchase agreement with the Company pursuant to the procedures set forth below.

I. Process for Completing a Power Purchase Agreement

A. Communications

Unless otherwise directed by the Company, all communications to the Company regarding QF power purchase agreements should be directed in writing as follows:

PacifiCorp
Manager-QF Contracts
825 NE Multnomah St, Suite 600
Portland, Oregon 97232

The Company will respond to all such communications in a timely manner. If the Company is unable to respond on the basis of incomplete or missing information from the QF owner, the Company shall indicate what additional information is required. Thereafter, the Company will respond in a timely manner following receipt of all required information.

(continued)

**AVOIDED COST PURCHASES FROM
QUALIFYING FACILITIES OF 10,000 KW OR LESS**

B. Procedures

1. The Company's approved generic or standard form power purchase agreements may be obtained from the Company's website at www.pacificorp.com, or if the owner is unable to obtain it from the website, the Company will send a copy within seven days of a written request.
2. In order to obtain a project specific draft power purchase agreement the owner must provide in writing to the Company, general project information required for the completion of a power purchase agreement, including, but not limited to:
 - (a) demonstration of ability to obtain QF status;
 - (b) design capacity (MW), station service requirements, and net amount of power to be delivered to the Company's electric system;
 - (c) generation technology and other related technology applicable to the site;
 - (d) proposed site location;
 - (e) schedule of monthly power deliveries;
 - (f) calculation or determination of minimum and maximum annual deliveries;
 - (g) motive force or fuel plan;
 - (h) proposed commercial operation date, interconnection completion date, and other significant dates required to complete the milestones;
 - (i) proposed contract term and pricing provisions as defined in this tariff (i.e., standard fixed price, renewable fixed price, gas deadband, gas indexed);
 - (j) status of interconnection or transmission arrangements;
 - (k) point of delivery or interconnection;
3. The Company shall provide a draft power purchase agreement when all information described in Paragraph 2 above has been received in writing from the QF owner and verified by Company personnel. Within 15 business days following receipt of all information required in Paragraph 2, the Company will provide the owner with a draft power purchase agreement including current standard avoided cost prices and/or other optional pricing mechanisms as approved by the Oregon Public Utilities Commission in this Schedule 37.
4. If the owner desires to proceed with the power purchase agreement after reviewing the Company's draft power purchase agreement, it may request in writing that the Company prepare a final draft power purchase agreement. In connection with such request, the owner must provide the Company with any additional or clarified project information that the Company reasonably determines to be necessary for the preparation of a final draft power purchase agreement. Within 15 business days following receipt of all information requested by the Company in this paragraph 4, the Company will provide the owner with a final draft power purchase agreement.

(continued)

**AVOIDED COST PURCHASES FROM
QUALIFYING FACILITIES OF 10,000 KW OR LESS**

B. Procedures (continued)

- 5 After reviewing the final draft power purchase agreement, the owner may either prepare another set of written comments and proposals or approve the final draft power purchase agreement. If the owner prepares written comments and proposals the Company will respond in 15 business days to those comments and proposals.

6. When both parties are in full agreement as to all terms and conditions of the draft power purchase agreement, the Company will prepare and forward to the owner within 15 business days, a final executable version of the agreement. Following the Company's execution a completely executed copy will be returned to the owner. Prices and other terms and conditions in the power purchase agreement will not be final and binding until the power purchase agreement has been executed by both parties.

II. Process for Negotiating Interconnection Agreements

[NOTE: Section II applies only to QFs connecting directly to PacifiCorp's electrical system. An off-system QF should contact its local utility or transmission provider to determine the interconnection requirements and wheeling arrangement necessary to move the power to PacifiCorp's system.]

In addition to negotiating a power purchase agreement, QFs intending to make sales to the Company are also required to enter into an interconnection agreement that governs the physical interconnection of the project to the Company's transmission or distribution system. The Company's obligation to make purchases from a QF is conditioned upon the QF completing all necessary interconnection arrangements. It is recommended that the owner initiate its request for interconnection 18 months ahead of the anticipated in-service date to help ensure that necessary interconnection arrangements proceed in a timely manner on a parallel track with negotiation of the power purchase agreement.

Because of functional separation requirements mandated by the Federal Energy Regulatory Commission, interconnection and power purchase agreements are handled by different functions within the Company. Interconnection agreements (both transmission and distribution level voltages) are handled by the Company's transmission function (including but not limited to PacifiCorp Transmission Services) while power purchase agreements are handled by the Company's merchant function (including but not limited to PacifiCorp's Commercial and Trading Group).

(continued)

**AVOIDED COST PURCHASES FROM
QUALIFYING FACILITIES OF 10,000 KW OR LESS**

II. Process for Negotiating Interconnection Agreements (continued)

A. Communications

Initial communications regarding interconnection agreements should be directed to the Company in writing as follows:

PacifiCorp
Director – Transmission Services
825 NE Multnomah St, Suite 1600
Portland, Oregon 97232

Based on the project size and other characteristics, the Company will direct the QF owner to the appropriate individual within the Company's transmission function who will be responsible for negotiating the interconnection agreement with the QF owner. Thereafter, the QF owner should direct all communications regarding interconnection agreements to the designated individual, with a copy of any written communications to the address set forth above.

B. Procedures

Generally, the interconnection process involves (1) initiating a request for interconnection, (2) undertaking studies to determine the system impacts associated with the interconnection and the design, cost, and schedules for constructing any necessary interconnection facilities, and (3) executing an interconnection agreement to address facility construction, testing, acceptance, ownership, operation and maintenance issues. Consistent with PURPA and Oregon Public Utility Commission regulations, the owner is responsible for all interconnection costs assessed by the Company on a nondiscriminatory basis. For interconnections impacting the Company's Transmission and Distribution System, the Company will process the interconnection application through PacifiCorp Transmission Services.

(continued)



**OREGON
SCHEDULE 37**

**AVOIDED COST PURCHASES FROM
QUALIFYING FACILITIES OF 10,000 KW OR LESS**

Banded Gas Market Index

Year	Prices Listed in the Tariff				Example using assumed Gas Prices						Compared to Fixed Prices	
	On-Peak Capacity Adder	Off-Peak Energy Adder	Gas Market Index		Assumed Gas Price \$/MMBtu	Actual Energy Price	Fuel Index		Price Paid to QF		Off-Peak Price	On-Peak Price
			Floor 90%	Ceiling 110%			Floor / Ceiling Component	Type of Price	Off-Peak Price	On-Peak Price		
(a)	(b)	(c)	(d)	(e)	(f)	(g)	(h)	(i)	(j)	(k)	(l)	
2016	2.77	0.69	2.92	3.57	\$2.00	1.39	2.92	Floor	3.61	6.38	3.93	6.70
					\$4.00	2.78	2.92	Floor	3.61	6.38		
					\$5.00	3.48	3.48	Actual	4.17	6.94		
					\$7.00	4.87	3.57	Ceiling	4.26	7.03		
					\$10.00	6.96	3.57	Ceiling	4.26	7.03		

Gas Market Method

Year	Prices Listed in the Tariff				Example using assumed Gas Prices						Compared to Fixed Prices	
	On-Peak Capacity Adder	Off-Peak Energy Adder	Fuel Index		Assumed Gas Price \$/MMBtu	Actual Energy Price	Fuel Index		Price Paid to QF		Off-Peak Price	On-Peak Price
			Floor 90%	Ceiling 110%			Floor / Ceiling Component	Type of Price	Off-Peak Price	On-Peak Price		
(a)	(b)	(c)	(d)	(e)	(f)	(g)	(h)	(i)	(j)	(k)	(l)	
2016	2.77	0.69	Not Relevant		\$2.00	1.39	Not Relevant		2.08	4.85	3.93	6.70
					\$4.00	2.78			3.47	6.24		
					\$5.00	3.48			4.17	6.94		
					\$7.00	4.87			5.56	8.33		
					\$10.00	6.96			7.65	10.42		

Docket No. UM-
Exhibit PAC/203
Witness: Bruce W. Griswold

**BEFORE THE PUBLIC UTILITY COMMISSION
OF THE STATE OF OREGON**

PACIFICORP

Exhibit Accompanying Direct Testimony of Bruce W. Griswold

Proposed Changes to Schedule 38 - Redline

February 2012

**AVOIDED COST PURCHASES FROM
QUALIFYING FACILITIES OF GREATER THAN 10,000 KW**

Available

To owners of Qualifying Facilities ("QF") making sales of electricity to the Company in the State of Oregon.

Applicable

For power purchased from Qualifying Facilities with a nameplate capacity greater than 10,000 kW. Owners of these Qualifying Facilities will be required to enter into a negotiated written power purchase agreement with the Company. Pursuant to Order No. 05-584, ~~and 07-360, and 11-505~~ the pricing options specified in Schedule 37 should serve as a starting point for prices under a negotiated power purchase agreement.

Definitions

Cogeneration Facility

A facility which produces electric energy together with steam or other form of useful energy (such as heat) which are used for industrial, commercial, heating or cooling purposes through the sequential use of energy.

Qualifying Facilities

Qualifying cogeneration facilities or qualifying small power production facilities within the meaning of section 201 and 210 of the Public Utility Regulatory Policies Act of 1978 (PURPA), 16 U.S.C. 796 and 824a-3.

Small Power Production Facility

A facility which produces electric energy using as a primary energy source of biomass, waste, renewable resources or any combination thereof and has a power production capacity which, together with other facilities located at the same site, is not greater than 80 megawatts.

On-Peak Hours or Peak Hours

On-peak hours are defined as 6:00 a.m. to 10:00 p.m. Pacific Prevailing Time Monday through Saturday, excluding NERC holidays.

Due to the expansions of Daylight Saving Time (DST) as adopted under Section 110 of the U.S. Energy Policy Act of 2005, the time periods shown above will begin and end one hour later for the period between the second Sunday in March and the first Sunday in April and for the period between the last Sunday in October and the first Sunday in November.

Off-Peak Hours

All hours other than On-Peak.

Excess Output

Excess output shall mean any increment of Net Output delivered at a rate, on an hourly basis, exceeding either the Facility Capacity Rating or the amount committed to in the contract. PacifiCorp shall pay the Qualifying Facility the Schedule 37 Non-Firm Market Index Avoided Cost Price for all Excess Output.

(continued)

**AVOIDED COST PURCHASES FROM
QUALIFYING FACILITIES OF GREATER THAN 10,000 KW**

Self Supply Option

Owner shall elect to sell all Net Output to PacifiCorp and purchase its full electric requirements from PacifiCorp or sell Net Output surplus to its needs at the Facility site to PacifiCorp and purchase partial electric requirements service from PacifiCorp, in accordance with the terms and conditions of the power purchase agreement and the appropriate retail service.

Qualifying Facilities Contracting Procedure

A. Communications

Unless otherwise directed by the Company, all communications to the Company regarding QF power purchase agreements should be directed in writing as follows:

PacifiCorp
Manager-QF Contracts
825 NE Multnomah St, Suite 600
Portland, Oregon 97232

The Company will respond to all such communications in a timely manner. If the Company is unable to respond on the basis of incomplete or missing information from the QF owner, the Company shall indicate what additional information is required. Thereafter, the Company will respond in a timely manner following receipt of all required information.

B. Procedures

1. To obtain an indicative pricing proposal with respect to a proposed project, the owner must provide in writing to the Company, general project information reasonably required for the development of indicative pricing, including, but not limited to:
 - a) generation technology and other related technology applicable to the site
 - b) design capacity (MW), station service requirements, and net amount of power to be delivered to the Company's electric system
 - c) quantity, firmness, and timing of daily and monthly power deliveries (including project ability to respond to dispatch orders from the Company and maintenance schedule)
 - d) proposed site location and electrical interconnection point
 - e) proposed on-line date and outstanding permitting requirements
 - f) demonstration of ability to obtain QF status
 - g) fuel type (s) and source (s)
 - h) plans for fuel and transportation agreements
 - ~~h)~~ Motive force plan including 12 month x 24 hour matrix of expected energy production
 - ~~i)~~ proposed contract term and pricing provisions (i.e., fixed, deadband, electric or gas market indexed)
 - ~~j)~~ status of interconnection arrangements

(continued)

**AVOIDED COST PURCHASES FROM
QUALIFYING FACILITIES OF GREATER THAN 10,000 KW**

B. Procedures (Continued)

2. The Company shall not be obligated to provide an indicative pricing proposal until all information described in Paragraph 1 has been received in writing from the Qualifying Facility owner. Within 30 days following receipt of all information required in Paragraph 1, the Company will provide the owner with an indicative pricing proposal, which may include other indicative contract terms and conditions as allowed under federal law, state law, ~~and per Order No. 07-360 and Order No. 11-505~~, tailored to the individual characteristics of the proposed project. Such proposal may be used by the owner to make determinations regarding project planning, financing and feasibility. However, such prices are merely indicative and are not final and binding. Prices and other terms and conditions are only final and binding to the extent contained in a power purchase agreement executed by both parties. The Company will provide with the indicative prices a description of the allowed price adjustments and the methodology used to develop the prices. Prices specified in Schedule 37 will provide a starting point for negotiated prices, and will be modified to address specific factors or adjustments as allowed under federal law, ~~and per Order No. 07-360 and order No. 11-505~~. Any adjustments other than those approved in Order No. 07-360 must first be approved by the Commission.

The following factors or adjustments, to the extent practicable will be included in the price delivered in the indicative pricing proposal.

- a. Dispatchability – Adjustment will reflect the ability of PacifiCorp to schedule and dispatch the Qualifying Facility as compared to the proxy resource on a forward, probabilistic basis. This adjustment will also account for the Company backing down more economic generating resources in lieu of wheeling the Qualifying Facility's power outside a load-constrained area.
- b. Reliability – Adjustment to be made based on the Qualifying Facility's demonstrated reliability (including the ability of the Qualifying Facility to supply reserves with its delivered energy) and availability of its capacity and energy as compared to its contracted level of reliability and availability during the Company's daily and seasonal peak periods. The value of the adjustment will reflect the Company's avoided resource in the Company's sufficiency and deficiency periods, as appropriate, and provide the Qualifying Facility an incentive for contracted performance and a disincentive for non-performance.
- c. Fossil Fuel Risk – Applicable only during the Company's resource deficiency period and if the Company's avoided resource is a fossil fuel plant. Adjustment will be based on the benefit of reduced fuel cost volatility of the Qualifying Facility compared to the avoided resource.

(continued)

**AVOIDED COST PURCHASES FROM
QUALIFYING FACILITIES OF GREATER THAN 10,000 KW**

B. Procedures (Continued)

- d. Line Losses – Adjustment will be the costs or savings resulting from variations in line losses using a proximity-based approach to compare Qualifying Facility's location and the Company's proxy plant location relative the closest load area served by the Qualifying Facility. Qualifying Facilities serving on-site loads, or other loads closer to the Qualifying Facility than the utility proxy resource, allow the utility to avoid transmission losses except in those cases where the utility must wheel the Qualifying Facility's power in excess of the on-site or local loads to other loads.
 - e. Transmission and Distribution System – Adjustment will be based on the potential savings that can be achieved for avoided transmission and distribution system costs, including upgrade deferrals or avoidance resulting from the Qualifying Facility's location relative to the Company's avoided resource. This adjustment does not include any costs associated with upgrades as part of the interconnection of the Qualifying Facility to PacifiCorp's system.
3. If the owner desires to proceed forward with the project after reviewing the Company's indicative pricing proposal, it may request in writing that the Company prepare a draft power purchase agreement to serve as the basis for negotiations between the parties. In connection with such request, the owner must provide the Company with any additional project information that the Company reasonably determines to be necessary for the preparation of a draft power purchase agreement, which may include, but shall not be limited to:
- a) updated information of the categories described in Paragraph B.1,
 - b) evidence of adequate control of proposed site
 - c) identification of, and timelines for obtaining any necessary governmental permits, approvals or authorizations
 - d) assurance of fuel supply or motive force
 - e) anticipated timelines for completion of key project milestones
 - f) evidence that any necessary interconnection studies have been completed and assurance that the necessary interconnection arrangements are being made in accordance with Part II.
4. The Company shall not be obligated to provide the owner with a draft power purchase agreement until all information required pursuant to Paragraph 3 has been received by the Company in writing. Within 30 days following receipt of all information required pursuant to paragraph 3, the Company shall provide the owner with a draft power purchase agreement containing a comprehensive set of proposed terms and conditions, including specific pricing for purchases from the project. Such draft shall serve as the basis for subsequent negotiations between the parties and, unless clearly indicated, shall not be construed as a binding proposal by the Company.

(continued)

**AVOIDED COST PURCHASES FROM
QUALIFYING FACILITIES OF GREATER THAN 10,000 KW**

B. Procedures (Continued)

5. After reviewing the draft power purchase agreement, the owner may prepare an initial set of written comments and proposals regarding the draft power purchase agreement and forward such comments and proposals to the Company. The Company shall not be obligated to commence negotiations with a Qualifying Facility owner until the Company has received an initial set of written comments and proposals from the Qualifying Facility owner. Following the Company's receipt of such comments and proposals, the owner may contact the Company to schedule contract negotiations at such times and places as are mutually agreeable to the parties. In connection with such negotiations, the Company:
 - a) will not unreasonably delay negotiations and will respond in good faith to any additions, deletions or modifications to the draft power purchase agreement that are proposed by the owner
 - b) may request to visit the site of the proposed project if such a visit has not previously occurred
 - c) will update its pricing proposals at appropriate intervals to accommodate any changes to the Company's avoided-cost calculations, the proposed project or proposed terms of the draft power purchase agreement
 - d) may request any additional information from the owner necessary to finalize the terms of the power purchase agreement and satisfy the Company's due diligence with respect to the project.

6. When both parties are in full agreement as to all terms and conditions of the power purchase agreement, the Company will prepare and forward to the owner a final, executable version of the agreement within 15 business days. Prices and other terms and conditions in the power purchase agreement will not be final and binding until the power purchase agreement has been executed by both parties.

7. At any time after 60 days from the date that Qualifying Facility has provided its written notification pursuant to Paragraph 5, the Qualifying Facility may file a complaint with the Commission asking the Commission to adjudicate any unresolved contract terms or conditions.

Docket No. UM-
Exhibit PAC/204
Witness: Bruce W. Griswold

**BEFORE THE PUBLIC UTILITY COMMISSION
OF THE STATE OF OREGON**

PACIFICORP

Exhibit Accompanying Direct Testimony of Bruce W. Griswold

Proposed Changes to Schedule 38 - Clean

February 2012

**AVOIDED COST PURCHASES FROM
QUALIFYING FACILITIES OF GREATER THAN 10,000 KW**

Available

To owners of Qualifying Facilities ("QF") making sales of electricity to the Company in the State of Oregon.

Applicable

For power purchased from Qualifying Facilities with a nameplate capacity greater than 10,000 kW. Owners of these Qualifying Facilities will be required to enter into a negotiated written power purchase agreement with the Company. Pursuant to Order No. 05-584, 07-360, and 11-505 the pricing options specified in Schedule 37 should serve as a starting point for prices under a negotiated power purchase agreement.

Definitions

Cogeneration Facility

A facility which produces electric energy together with steam or other form of useful energy (such as heat) which are used for industrial, commercial, heating or cooling purposes through the sequential use of energy.

Qualifying Facilities

Qualifying cogeneration facilities or qualifying small power production facilities within the meaning of section 201 and 210 of the Public Utility Regulatory Policies Act of 1978 (PURPA), 16 U.S.C. 796 and 824a-3.

Small Power Production Facility

A facility which produces electric energy using as a primary energy source of biomass, waste, renewable resources or any combination thereof and has a power production capacity which, together with other facilities located at the same site, is not greater than 80 megawatts.

On-Peak Hours or Peak Hours

On-peak hours are defined as 6:00 a.m. to 10:00 p.m. Pacific Prevailing Time Monday through Saturday, excluding NERC holidays.

Due to the expansions of Daylight Saving Time (DST) as adopted under Section 110 of the U.S. Energy Policy Act of 2005, the time periods shown above will begin and end one hour later for the period between the second Sunday in March and the first Sunday in April and for the period between the last Sunday in October and the first Sunday in November.

Off-Peak Hours

All hours other than On-Peak.

Excess Output

Excess output shall mean any increment of Net Output delivered at a rate, on an hourly basis, exceeding either the Facility Capacity Rating or the amount committed to in the contract. PacifiCorp shall pay the Qualifying Facility the Schedule 37 Non-Firm Market Index Avoided Cost Price for all Excess Output.

(continued)

**AVOIDED COST PURCHASES FROM
QUALIFYING FACILITIES OF GREATER THAN 10,000 KW**

Self Supply Option

Owner shall elect to sell all Net Output to PacifiCorp and purchase its full electric requirements from PacifiCorp or sell Net Output surplus to its needs at the Facility site to PacifiCorp and purchase partial electric requirements service from PacifiCorp, in accordance with the terms and conditions of the power purchase agreement and the appropriate retail service.

Qualifying Facilities Contracting Procedure

A. Communications

Unless otherwise directed by the Company, all communications to the Company regarding QF power purchase agreements should be directed in writing as follows:

PacifiCorp
Manager-QF Contracts
825 NE Multnomah St, Suite 600
Portland, Oregon 97232

The Company will respond to all such communications in a timely manner. If the Company is unable to respond on the basis of incomplete or missing information from the QF owner, the Company shall indicate what additional information is required. Thereafter, the Company will respond in a timely manner following receipt of all required information.

B. Procedures

1. To obtain an indicative pricing proposal with respect to a proposed project, the owner must provide in writing to the Company, general project information reasonably required for the development of indicative pricing, including, but not limited to:
 - a) generation technology and other related technology applicable to the site
 - b) design capacity (MW), station service requirements, and net amount of power to be delivered to the Company's electric system
 - c) quantity, firmness, and timing of daily and monthly power deliveries (including project ability to respond to dispatch orders from the Company and maintenance schedule)
 - d) proposed site location and electrical interconnection point
 - e) proposed on-line date and outstanding permitting requirements
 - f) demonstration of ability to obtain QF status
 - g) fuel type (s) and source (s)
 - h) plans for fuel and transportation agreements
 - i) Motive force plan including 12 month x 24 hour matrix of expected energy production
 - j) proposed contract term and pricing provisions (i.e., fixed, deadband, electric or gas market indexed)
 - k) status of interconnection arrangements

(continued)

**AVOIDED COST PURCHASES FROM
QUALIFYING FACILITIES OF GREATER THAN 10,000 KW**

B. Procedures (Continued)

2. The Company shall not be obligated to provide an indicative pricing proposal until all information described in Paragraph 1 has been received in writing from the Qualifying Facility owner. Within 30 days following receipt of all information required in Paragraph 1, the Company will provide the owner with an indicative pricing proposal, which may include other indicative contract terms and conditions as allowed under federal law, state law, Order No. 07-360 and Order No. 11-505, tailored to the individual characteristics of the proposed project. Such proposal may be used by the owner to make determinations regarding project planning, financing and feasibility. However, such prices are merely indicative and are not final and binding. Prices and other terms and conditions are only final and binding to the extent contained in a power purchase agreement executed by both parties. The Company will provide with the indicative prices a description of the allowed price adjustments and the methodology used to develop the prices. Prices specified in Schedule 37 will provide a starting point for negotiated prices, and will be modified to address specific factors or adjustments as allowed under federal law, Order No. 07-360 and order No. 11-505. Any adjustments other than those approved in Order No. 07-360 must first be approved by the Commission.

The following factors or adjustments, to the extent practicable will be included in the price delivered in the indicative pricing proposal.

- a. Dispatchability – Adjustment will reflect the ability of PacifiCorp to schedule and dispatch the Qualifying Facility as compared to the proxy resource on a forward, probabilistic basis. This adjustment will also account for the Company backing down more economic generating resources in lieu of wheeling the Qualifying Facility's power outside a load-constrained area.
- b. Reliability – Adjustment to be made based on the Qualifying Facility's demonstrated reliability (including the ability of the Qualifying Facility to supply reserves with its delivered energy) and availability of its capacity and energy as compared to its contracted level of reliability and availability during the Company's daily and seasonal peak periods. The value of the adjustment will reflect the Company's avoided resource in the Company's sufficiency and deficiency periods, as appropriate, and provide the Qualifying Facility an incentive for contracted performance and a disincentive for non-performance.
- c. Fossil Fuel Risk – Applicable only during the Company's resource deficiency period and if the Company's avoided resource is a fossil fuel plant. Adjustment will be based on the benefit of reduced fuel cost volatility of the Qualifying Facility compared to the avoided resource.

(continued)

**AVOIDED COST PURCHASES FROM
QUALIFYING FACILITIES OF GREATER THAN 10,000 KW**

Page 4

B. Procedures (Continued)

- d. Line Losses – Adjustment will be the costs or savings resulting from variations in line losses using a proximity-based approach to compare Qualifying Facility's location and the Company's proxy plant location relative the closest load area served by the Qualifying Facility. Qualifying Facilities serving on-site loads, or other loads closer to the Qualifying Facility than the utility proxy resource, allow the utility to avoid transmission losses except in those cases where the utility must wheel the Qualifying Facility's power in excess of the on-site or local loads to other loads.
 - e. Transmission and Distribution System – Adjustment will be based on the potential savings that can be achieved for avoided transmission and distribution system costs, including upgrade deferrals or avoidance resulting from the Qualifying Facility's location relative to the Company's avoided resource. This adjustment does not include any costs associated with upgrades as part of the interconnection of the Qualifying Facility to PacifiCorp's system.
3. If the owner desires to proceed forward with the project after reviewing the Company's indicative pricing proposal, it may request in writing that the Company prepare a draft power purchase agreement to serve as the basis for negotiations between the parties. In connection with such request, the owner must provide the Company with any additional project information that the Company reasonably determines to be necessary for the preparation of a draft power purchase agreement, which may include, but shall not be limited to:
- a) updated information of the categories described in Paragraph B.1,
 - b) evidence of adequate control of proposed site
 - c) identification of, and timelines for obtaining any necessary governmental permits, approvals or authorizations
 - d) assurance of fuel supply or motive force
 - e) anticipated timelines for completion of key project milestones
 - f) evidence that any necessary interconnection studies have been completed and assurance that the necessary interconnection arrangements are being made in accordance with Part II.
4. The Company shall not be obligated to provide the owner with a draft power purchase agreement until all information required pursuant to Paragraph 3 has been received by the Company in writing. Within 30 days following receipt of all information required pursuant to paragraph 3, the Company shall provide the owner with a draft power purchase agreement containing a comprehensive set of proposed terms and conditions, including specific pricing for purchases from the project. Such draft shall serve as the basis for subsequent negotiations between the parties and, unless clearly indicated, shall not be construed as a binding proposal by the Company.

(continued)

**AVOIDED COST PURCHASES FROM
QUALIFYING FACILITIES OF GREATER THAN 10,000 KW**

B. Procedures (Continued)

5. After reviewing the draft power purchase agreement, the owner may prepare an initial set of written comments and proposals regarding the draft power purchase agreement and forward such comments and proposals to the Company. The Company shall not be obligated to commence negotiations with a Qualifying Facility owner until the Company has received an initial set of written comments and proposals from the Qualifying Facility owner. Following the Company's receipt of such comments and proposals, the owner may contact the Company to schedule contract negotiations at such times and places as are mutually agreeable to the parties. In connection with such negotiations, the Company:
 - a) will not unreasonably delay negotiations and will respond in good faith to any additions, deletions or modifications to the draft power purchase agreement that are proposed by the owner
 - b) may request to visit the site of the proposed project if such a visit has not previously occurred
 - c) will update its pricing proposals at appropriate intervals to accommodate any changes to the Company's avoided-cost calculations, the proposed project or proposed terms of the draft power purchase agreement
 - d) may request any additional information from the owner necessary to finalize the terms of the power purchase agreement and satisfy the Company's due diligence with respect to the project.
6. When both parties are in full agreement as to all terms and conditions of the power purchase agreement, the Company will prepare and forward to the owner a final, executable version of the agreement within 15 business days. Prices and other terms and conditions in the power purchase agreement will not be final and binding until the power purchase agreement has been executed by both parties.
7. At any time after 60 days from the date that Qualifying Facility has provided its written notification pursuant to Paragraph 5, the Qualifying Facility may file a complaint with the Commission asking the Commission to adjudicate any unresolved contract terms or conditions.

Docket No. UM-
Exhibit PAC/205
Witness: Bruce W. Griswold

**BEFORE THE PUBLIC UTILITY COMMISSION
OF THE STATE OF OREGON**

PACIFICORP

**Exhibit Accompanying Direct Testimony of Bruce W. Griswold
Summary of Changes in Power Purchase Agreement Templates**

February 2012

PPA Change	Power Purchase Agreement for New QFs less than 10,000 kW	Power Purchase Agreement for Existing QFs less than 10,000 kW	Power Purchase Agreement for Off-System QFs less than 10,000 kW	Power Purchase Agreement for Intermittent Renewable QF Resources (i.e. Wind) less than 10,000 KW	Non-firm Power Purchase Agreement for QFs less than 10,000 KW
	Section	Section	Section	Section	Section
Insert new definition "CAMD"	1.4	1.4	1.4	1.5	1.4
Insert new definition "Environmental Attributes"	1.13	1.13	1.13	1.15	1.11
Insert new definition "Green Tags"	1.19	1.18	1.19	1.22	1.16
Insert new definition "Green tag Reporting Rights"	1.20	1.19	1.20	1.23	1.17
Insert new definition "Renewable Resource Deficiency Period"	1.36	1.35	1.39	1.39	1.25
Insert new definition "WREGIS"	1.44	1.40	1.49	1.48	1.32
Insert new definition "WREGIS Certificate"	1.45	1.41	1.50	1.49	1.33
Insert new definition "WREGIS Operating Rules"	1.46	1.42	1.51	1.50	1.34
Insert language on Green Tag generation	4.1	4.1	4.1	4.1	4.1
Insert new section <u>Transfer of Title to Green Tags; Documentation of Green Tags Transfers</u>	4.6	4.6	4.6	4.6	4.4
Insert Fixed Price Renewable option selection	5.1	5.1	5.1	5.1	NA
Insert new section (<u>Fixed Price Renewable Seller Only</u>)	5.3	5.3	5.3	5.3	NA
Update section for ICE market index	5.5	5.5	5.5	5.5	5.1

PPA Change	Power Purchase Agreement for New QFs less than 10,000 kW	Power Purchase Agreement for Existing QFs less than 10,000 kW	Power Purchase Agreement for Off-System QFs less than 10,000 kW	Power Purchase Agreement for Intermittent Renewable QF Resources (i.e. Wind) less than 10,000 KW	Non-firm Power Purchase Agreement for QFs less than 10,000 KW
	Section	Section	Section	Section	Section
Revise section to address Green Tag ownership	5.6	5.6	5.6	5.6	5.2
Correct notice section	23.1	23.1	23.1	23.1	21
Insert new exhibit, GREEN TAG ATTESTATION AND BILL OF SALE	Exhibit H	Exhibit G	Exhibit H	Exhibit H	Exhibit H
Insert new exhibit, QUALIFIED REPORTING ENTITY SERVICES AGREEMENT	Exhibit I	Exhibit H	Exhibit I	Exhibit I	Exhibit I

Docket No. UM-
Exhibit PAC/206
Witness: Bruce W. Griswold

**BEFORE THE PUBLIC UTILITY COMMISSION
OF THE STATE OF OREGON**

PACIFICORP

Exhibit Accompanying Direct Testimony of Bruce W. Griswold

Example of Power Purchase Agreement - Redline

February 2012

POWER PURCHASE AGREEMENT

BETWEEN

**[a new Firm Qualifying Facility with 10,000 kW Facility Capacity Rating, or Less and
not an Intermittent Resource]**

AND

PACIFICORP

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POWER PURCHASE AGREEMENT

THIS POWER PURCHASE AGREEMENT, entered into this ____day of _____, 20____, is between _____, "Seller" and PacifiCorp (d/b/a Pacific Power & Light Company), an Oregon corporation acting in its regulated utility capacity, "PacifiCorp." (Seller and PacifiCorp are referred to individually as a "Party" or collectively as the "Parties").

RECITALS

A. Seller intends to construct, own, operate and maintain a _____ [state type of facility] facility for the generation of electric power, including interconnection facilities, located in _____ [City, County, State] with a Facility Capacity Rating of _____ -kilowatts (kW) as further described in **Exhibit A** and **Exhibit B** ("**Facility**"); and

B. Seller intends to commence delivery of Net Output under this Agreement, for the purpose of Start-up Testing, on _____, 20____ ("**Scheduled Initial Delivery Date**"); and

C. Seller intends to operate the Facility as a Qualifying Facility, commencing commercial operations on _____, 20____ ("**Scheduled Commercial Operation Date**"); and

D. Seller estimates that the average annual Net Energy to be delivered by the Facility to PacifiCorp is _____ kilowatt-hours (kWh), which amount of energy PacifiCorp will include in its resource planning; and

E. Seller shall (choose one) sell all Net Output to PacifiCorp and purchase its full electric requirements from PacifiCorp sell Net Output surplus to its needs at the Facility site to PacifiCorp and purchase partial electric requirements service from PacifiCorp, in accordance with the terms and conditions of this Agreement; and

F. This Agreement is a "New QF Contract" under the PacifiCorp Inter-Jurisdictional Cost Allocation Revised Protocol.

AGREEMENT

NOW, THEREFORE, the Parties mutually agree as follows:

SECTION 1: DEFINITIONS

When used in this Agreement, the following terms shall have the following meanings:

1.1 "As-built Supplement" shall be a supplement to **Exhibit A** and **Exhibit B**, provided by Seller following completion of construction of the Facility, describing the Facility as actually built.

1.2 "Average Annual Generation" shall have the meaning set forth in Section 4.2.

1.3 "Billing Period" means, unless otherwise agreed to, the time period between PacifiCorp's consecutive readings of its power purchase billing meter at the Facility in the normal course of PacifiCorp's business. Such periods typically range between twenty-seven (27) and thirty-four (34) days and may not coincide with calendar months.

~~1.3.1.4~~ "CAMD" means the Clean Air Markets Division of the Environmental Protection Agency or successor administrator, or any state or federal entity given jurisdiction over a program involving transferability of Green Tags.

~~1.4.1.5~~ "Commercial Operation Date" means the date that the Facility is deemed by PacifiCorp to be fully operational and reliable, which shall require, among other things, that all of the following events have occurred:

PacifiCorp has received a certificate addressed to PacifiCorp from a Licensed Professional Engineer stating (a) the Facility Capacity Rating of the Facility at the anticipated Commercial Operation Date; and (b) that the Facility is able to generate electric power reliably in amounts required by this Agreement and in accordance with all other terms and conditions of this Agreement;

The Facility has completed Start-Up Testing;

PacifiCorp has received a certificate addressed to PacifiCorp from a Licensed Professional Engineer stating that, (a), in accordance with the Generation Interconnection Agreement, all required interconnection facilities have been constructed, all required interconnection tests have been completed and the Facility is physically interconnected with PacifiCorp's electric system, or (b) if the Facility is interconnected with another electric utility that will wheel Net Output to PacifiCorp, all required interconnection facilities have been completed and tested and are in place to allow for such wheeling;

PacifiCorp has received a certificate addressed to PacifiCorp from an attorney in good standing in the State of Oregon stating that Seller has obtained all Required Facility Documents and if requested by PacifiCorp, in writing, has provided copies of any or all such requested Required Facility Documents. (Facilities over 200 kW only).

Seller has complied with the security requirements of Section 10.

PacifiCorp has received an executed copy of **Exhibit F**—Seller’s Interconnection Request.

~~4.51.6~~ **“Commission”** means the Oregon Public Utilities Commission.

~~4.61.7~~ **“Contract Price”** means the applicable price for capacity or energy, or both capacity and energy, stated in Sections 5.1 and 5.2.

~~4.71.8~~ **“Contract Year”** means a twelve (12) month period commencing at 00:00 hours Pacific Prevailing Time (“PPT”) on January 1 and ending on 24:00 hours PPT on December 31; *provided, however*, that the first Contract Year shall commence on the Commercial Operation Date and end on the next succeeding December 31, and the last Contract Year shall end on the Termination Date.

~~4.81.9~~ **“Credit Requirements”** means a long-term credit rating (corporate or long-term senior unsecured debt) of (1) “Baa3” or greater by Moody’s, or (2) “BBB-” or greater by S&P, or such other indicia of creditworthiness acceptable to PacifiCorp in its reasonable judgment.

~~4.91.10~~ **“Default Security”**, unless otherwise agreed to by the Parties in writing, means the amount of either a Letter of Credit or cash placed in an escrow account sufficient to replace twelve (12) average months of replacement power costs over the term of this Agreement, and shall be calculated by taking the average, over the term of this Agreement, of the positive difference between (a) the monthly forward power prices at [specify POD] (as determined by PacifiCorp in good faith using information from a commercially reasonable independent source), multiplied by 110%, minus (b) the average of the Fixed Avoided Cost Prices specified in Schedule 37, and multiplying such difference by (c) the Minimum Annual Delivery; provided, however, the amount of Default Security shall in no event be less than the amount equal to the payments PacifiCorp would make for three (3) average months based on Seller’s average monthly volume over the term of this Agreement and utilizing the average Fixed Avoided Cost Prices specified in Schedule 37. Such amount shall be fixed at the Effective Date of this Agreement.

~~4.101.11~~ **“Effective Date”** shall have the meaning set forth in Section 2.1.

~~4.11.12~~ **“Energy Delivery Schedule”** shall have the meaning set forth in Section 4.5.

~~4.11.13~~ **“Environmental Attributes”** shall means any and all claims, credits, benefits, emissions reductions, offsets, and allowances, howsoever entitled, resulting from the avoidance of the emission of any gas, chemical, or other substance to the air, soil or water, which are deemed of value by PacifiCorp. Environmental Attributes include but are not limited to: (1) any avoided emissions of pollutants to the air, soil, or water such as (subject to the foregoing) sulfur oxides (SOx), nitrogen oxides (NOx), carbon monoxide (CO), and other pollutants; and (2) any avoided emissions of carbon dioxide (CO2), methane (CH4), and other greenhouse gases (GHGs) that have been determined by the United Nations Intergovernmental Panel on Climate Change to contribute to the actual or potential threat of altering the Earth’s climate by trapping heat in the atmosphere. Environmental Attributes do not include PTCs or certain other tax

incentives existing now or in the future associated with the construction, ownership or operation of the Facility, (ii) matters designated by PacifiCorp as sources of liability, or (iii) adverse wildlife or environmental impacts, have the meaning set forth in Section 5.5.

1-21.14 "Excess Output" shall mean any increment of Net Output delivered at a rate, on an hourly basis, exceeding the Facility Capacity Rating.

1-31.15 "Facility" shall have the meaning set forth in Recital A.

1-41.16 "Facility Capacity Rating" means the sum of the Nameplate Capacity Ratings for all generators comprising the Facility.

1-51.17 "FERC" means the Federal Energy Regulatory Commission, or its successor.

1.18 "Generation Interconnection Agreement" means the generation interconnection agreement to be entered into separately between Seller and PacifiCorp's transmission or distribution department, as applicable, providing for the construction, operation, and maintenance of PacifiCorp's interconnection facilities required to accommodate deliveries of Seller's Net Output if the Facility is to be interconnected directly with PacifiCorp rather than another electric utility.

1.19 "Green Tags" means (1) the Environmental Attributes associated with all Net Output, together with (2) the Green Tag Reporting Rights associated with such energy and Environmental Attributes, however commercially transferred or traded under any or other product names, such as "Renewable Energy Credits," "Green-e Certified", or otherwise. One (1) Green Tag represents the Environmental Attributes made available by the generation of one (1) MWh of energy from the Facility.

1-61.20 "Green Tag Reporting Rights" means the exclusive right of a purchaser of Environmental Attributes to report ownership of Environmental Attributes in compliance with federal or state law, if applicable, and to federal or state agencies or other parties at such purchaser's discretion, and include reporting under Section 1605(b) of the Energy Policy Act of 1992, or under any present or future domestic, international, or foreign emissions trading program or renewable portfolio standard.

1-71.21 "Letter of Credit" means an irrevocable standby letter of credit, from an institution that has a long-term senior unsecured debt rating of "A" or greater from S&P or "A2" or greater from Moody's, in a form reasonably acceptable to PacifiCorp, naming PacifiCorp as the party entitled to demand payment and present draw requests thereunder.

1-81.22 "Licensed Professional Engineer" means a person acceptable to PacifiCorp in its reasonable judgment who is licensed to practice engineering in the state of Oregon, who has no economic relationship, association, or nexus with the Seller, and who is not a representative of a consulting engineer, contractor, designer or other individual involved in the development of the Facility, or of a manufacturer or supplier of any equipment installed in the Facility. Such Licensed Professional Engineer shall be licensed in an appropriate engineering discipline for the required certification being made.

~~4.91.23~~ **"Material Adverse Change"** means the occurrence of any event of default under any material agreement to which Seller is a party and of any other development, financial or otherwise, which would have a material adverse effect on Seller, the Facility or Seller's ability to develop, construct, operate, maintain or own the Facility as provided in this Agreement

~~4.101.24~~ **"Maximum Annual Delivery"** shall have the meaning set forth in Section 4.3.

~~4.111.25~~ **"Minimum Annual Delivery"** shall have the meaning set forth in Section 4.3.

~~4.131.26~~ **"Nameplate Capacity Rating"** means the full-load electrical quantities assigned by the designer to a generator and its prime mover or other piece of electrical equipment, such as transformers and circuit breakers, under standardized conditions, expressed in amperes, kilovoltamperes, kilowatts, volts, or other appropriate units. Usually indicated on a nameplate attached to the individual machine or device.

~~4.131.27~~ **"Net Energy"** means the energy component, in kWh, of Net Output.

~~4.141.28~~ **"Net Output"** means all energy and capacity produced by the Facility, less station use and less transformation and transmission losses and other adjustments (e.g., Seller's load other than station use), if any. For purposes of calculating payment under this Agreement, Net Output of energy shall be the amount of energy flowing through the Point of Delivery.

~~4.151.29~~ **"Net Replacement Power Costs"** shall have the meaning set forth in Section 11.4.1.

~~4.161.30~~ **"Off-Peak Hours"** means all hours of the week that are not On-Peak Hours.

~~4.171.31~~ **"On-Peak Hours"** means the hours between 6 a.m. Pacific Prevailing Time ("PPT") and 10 p.m. PPT, Mondays through Saturdays, excluding all hours occurring on holidays as provided in Schedule 37.

~~4.181.32~~ **"Point of Delivery"** means the high side of the Seller's step-up transformer(s) located at the point of interconnection between the Facility and PacifiCorp's distribution/ transmission system, as specified in the Generation Interconnection Agreement, or, if the Facility is not interconnected directly with PacifiCorp, the point at which another utility will deliver the Net Output to PacifiCorp as specified in **Exhibit B**.

~~4.191.33~~ **"Prime Rate"** means the publicly announced prime rate for commercial loans to large businesses with the highest credit rating in the United States in effect from time to time quoted by Citibank, N.A. If a Citibank, N.A. prime rate is not available, the applicable Prime Rate shall be the announced prime rate for commercial loans in effect from time to time quoted by a bank with \$10 billion or more in assets in New York City, New York, selected by the Party to whom interest based on the Prime Rate is being paid.

1.201.34 "**Prudent Electrical Practices**" means any of the practices, methods and acts engaged in or approved by a significant portion of the electrical utility industry or any of the practices, methods or acts, which, in the exercise of reasonable judgment in the light of the facts known at the time a decision is made, could have been expected to accomplish the desired result at the lowest reasonable cost consistent with reliability, safety and expedition. Prudent Electrical Practices is not intended to be limited to the optimum practice, method or act to the exclusion of all others, but rather to be a spectrum of possible practices, methods or acts.

1.35 "**QF**" means "**Qualifying Facility**," as that term is defined in the FERC regulations (codified at 18 CFR Part 292) in effect on the Effective Date.

1.241.36 "**Renewable Resource Deficiency Period**" means the period from January 1, through the Termination Date.

1.221.37 "**Replacement Price**" means the price at which PacifiCorp, acting in a commercially reasonable manner, purchases for delivery at the Point of Delivery a replacement for any Net Output that Seller is required to deliver under this Agreement plus (i) costs reasonably incurred by PacifiCorp in purchasing such replacement Net Output, and (ii) additional transmission charges, if any, reasonably incurred by PacifiCorp in causing replacement energy to be delivered to the Point of Delivery. If PacifiCorp elects not to make such a purchase, the Replacement Price shall be the market price at the Mid-Columbia trading hub for such energy not delivered, plus any additional cost or expense incurred as a result of Seller's failure to deliver, as determined by PacifiCorp in a commercially reasonable manner (but not including any penalties, ratcheted demand or similar charges).

1.231.38 "**Required Facility Documents**" means all licenses, permits, authorizations, and agreements, including a Generation Interconnection Agreement or equivalent, necessary for construction, operation, and maintenance of the Facility consistent with the terms of this Agreement, including without limitation those set forth in **Exhibit C**.

1.241.39 "**Schedule 37**" means the Schedule 37 of Pacific Power & Light Company's Commission-approved tariffs, providing pricing options for Qualifying Facilities of 10,000 kW or less, which is in effect on the Effective Date of this Agreement. A copy of that Schedule 37 is attached as **Exhibit G**.

1.251.40 "**Scheduled Commercial Operation Date**" shall have the meaning set forth in Recital C.

1.261.41 "**Scheduled Initial Delivery Date**" shall have the meaning set forth in Recital B.

1.271.42 "**Start-Up Testing**" means the completion of required factory and start-up tests as set forth in **Exhibit E** hereto.

1.43 "**Termination Date**" shall have the meaning set forth in Section 2.4.

1.44 "**WREGIS**" means the Western Renewable Energy Generation Information System or successor organization in case WREGIS is ever replaced.

1.45 "WREGIS Certificate" means "Certificate" as defined by WREGIS in the WREGIS Operating Rules.

1.281.46 "WREGIS Operating Rules" means the operating rules and requirements adopted by WREGIS.

SECTION 2: TERM; COMMERCIAL OPERATION DATE

2.1 This Agreement shall become effective after execution by both Parties ("**Effective Date**").

2.2 **Time is of the essence for this Agreement**, and Seller's ability to meet certain requirements prior to the Commercial Operation Date and to deliver Net Output by the Scheduled Commercial Operation Date is critically important. Therefore,

By _____, Seller shall provide PacifiCorp with a copy of an executed Generation Interconnection Agreement, or wheeling agreement, as applicable, which shall be consistent with all material terms and requirements of this Agreement.

Upon completion of construction, Seller, in accordance with Section 6.1, shall provide PacifiCorp with an As-built Supplement acceptable to PacifiCorp;

By the date thirty (30) days after the Effective Date, Seller shall provide Default Security required under Sections 10.1 or 10.2, as applicable.

2.3 Seller shall cause the Facility to achieve Commercial Operation on or before the Scheduled Commercial Operation Date. If Commercial Operation occurs after the Scheduled Commercial Operation Date, Seller shall be in default, and liable for delay damages specified in Section 11.

2.4 Except as otherwise provided herein, this Agreement shall terminate on _____ [enter Date that is no later than 20 years after the Scheduled Initial Delivery Date] ("**Termination Date**").

SECTION 3: REPRESENTATIONS AND WARRANTIES

3.1 PacifiCorp represents, covenants, and warrants to Seller that:

PacifiCorp is duly organized and validly existing under the laws of the State of Oregon.

PacifiCorp has the requisite corporate power and authority to enter into this Agreement and to perform according to the terms of this Agreement.

PacifiCorp has taken all corporate actions required to be taken by it to authorize the execution, delivery and performance of this Agreement and the consummation of the transactions contemplated hereby.

The execution and delivery of this Agreement does not contravene any provision of, or constitute a default under, any indenture, mortgage, or other material agreement binding on PacifiCorp or any valid order of any court, or any regulatory agency or other body having authority to which PacifiCorp is subject.

This Agreement is a valid and legally binding obligation of PacifiCorp, enforceable against PacifiCorp in accordance with its terms (except as the enforceability of this Agreement may be limited by bankruptcy, insolvency, bank moratorium or similar laws affecting creditors' rights generally and laws restricting the availability of equitable remedies and except as the enforceability of this Agreement may be subject to general principles of equity, whether or not such enforceability is considered in a proceeding at equity or in law).

3.2 Seller represents, covenants, and warrants to PacifiCorp that:

Seller is a [corporation, partnership, or limited liability company] duly organized and validly existing under the laws of _____.

Seller has the requisite power and authority to enter into this Agreement and to perform according to the terms hereof, including all required regulatory authority to make wholesale sales from the Facility.

Seller has taken all actions required to authorize the execution, delivery and performance of this Agreement and the consummation of the transactions contemplated hereby.

The execution and delivery of this Agreement does not contravene any provision of, or constitute a default under, any indenture, mortgage, or other material agreement binding on Seller or any valid order of any court, or any regulatory agency or other body having authority to which Seller is subject.

This Agreement is a valid and legally binding obligation of Seller, enforceable against Seller in accordance with its terms (except as the enforceability of this Agreement may be limited by bankruptcy, insolvency, bank moratorium or similar laws affecting creditors' rights generally and laws restricting the availability of equitable remedies and except as the enforceability of this Agreement may be subject to general principles of equity, whether or not such enforceability is considered in a proceeding at equity or in law).

The Facility is and shall for the term of this Agreement continue to be a QF, and Seller will operate the Facility in a manner consistent with its FERC QF certification. Seller has provided to PacifiCorp the appropriate QF certification (which may include a FERC self-certification) prior to PacifiCorp's execution of this Agreement. At any time during the term of this Agreement, PacifiCorp may require Seller to provide PacifiCorp with evidence satisfactory to PacifiCorp in its reasonable discretion that the Facility continues to qualify as a QF under all applicable requirements and, if PacifiCorp is not satisfied that the Facility qualifies for such status, a written legal opinion from an attorney who is (a) in good standing in the state of Oregon, and (b) who has no economic relationship, association or nexus with the Seller or the Facility, stating that the Facility is a QF and providing sufficient proof (including copies of all documents and data as PacifiCorp may request) demonstrating that Seller has maintained and will continue to maintain the Facility as a QF.

Compliance with Partial Stipulation in Commission Proceeding No. UM-1129. Seller will not make any changes in its ownership, control, or management during the term of this Agreement that would cause it to not be in compliance with the definition of a Small Cogeneration Facility or Small Power Production Facility provided in PacifiCorp's Schedule 37 tariff approved by the Commission at the time this Agreement is executed. Seller will provide, upon request by PacifiCorp not more frequently than every 36 months, such documentation and information as reasonably may be required to establish Seller's continued compliance with such Definition. PacifiCorp agrees to take reasonable steps to maintain the confidentiality of any portion of the above-described documentation and information that the Seller identifies as confidential except PacifiCorp will provide all such confidential information the Public Utility Commission of Oregon upon the Commission's request.

Additional Seller Creditworthiness Warranties. Seller need not post security under Section 10 for PacifiCorp's benefit in the event of Seller default, provided that Seller warrants all of the following:

Neither the Seller nor any of its principal equity owners is or has within the past two (2) years been the debtor in any bankruptcy proceeding, is unable to pay its bills in the ordinary course of its business, or is the subject of any legal or regulatory action, the result of which could reasonably be expected to impair Seller's ability to own and operate the Facility in accordance with the terms of this Agreement.

Seller has not at any time defaulted in any of its payment obligations for electricity purchased from PacifiCorp.

Seller is not in default under any of its other agreements and is current on all of its financial obligations, including construction related financial obligations.

Seller owns, and will continue to own for the term of this Agreement, all right, title and interest in and to the Facility, free and clear of all liens and encumbrances other than liens and encumbrances related to third-party financing of the Facility.

[Applicable only to Seller's with a Facility having a Facility Capacity Rating greater than 3,000 kW] Seller meets the Credit Requirements.

Seller hereby declares (Seller initial one only):

_____ Seller affirms and adopts all warranties of this Section 3.2.8, and therefore is not required to post security under Section 10; or

_____ Seller does not affirm and adopt all warranties of this Section 3.2.8, and therefore Seller elects to post the security specified in Section 10.

3.3 Notice. If at any time during this Agreement, any Party obtains actual knowledge of any event or information which would have caused any of the representations and warranties

in this Section 3 to have been materially untrue or misleading when made, such Party shall provide the other Party with written notice of the event or information, the representations and warranties affected, and the action, if any, which such Party intends to take to make the representations and warranties true and correct. The notice required pursuant to this Section shall be given as soon as practicable after the occurrence of each such event.

SECTION 4: DELIVERY OF POWER

4.1 Commencing on the Commercial Operation Date, unless otherwise provided herein, Seller will sell and PacifiCorp will purchase (a) all Net Output from the Facility delivered to the Point of Delivery and (b) all Green Tags associated with ~~Net Output or otherwise~~ resulting from the generation of energy by the Facility (which shall come from the Facility and from no other source), subject to the Green Tags ownership as defined in Section 5.6.:

4.2 Average Annual Generation. Seller estimates that the Facility will generate, on average, _____ kWh per Contract Year (“Average Annual Generation”). Seller may, upon at least six months prior written notice, modify the Average Annual Generation every other Contract Year.

4.3 Minimum and Maximum Delivery. Seller shall make available from the Facility a minimum of _____ kWh of Net Output during each Contract Year, provided that such minimum for the first Contract Year shall be reduced pro rata to reflect the Commercial Operation Date, and further provided that such minimum Net Output shall be reduced on a pro-rata basis for any periods during a Contract Year that the Facility was prevented from generating electricity for reasons of Force Majeure (“Minimum Annual Delivery”). Seller estimates, for informational purposes, that it will make available from the Facility a maximum of _____ kWh of Net Output during each Contract Year (“Maximum Annual Delivery”). Seller’s basis for determining the Minimum and Maximum Annual Delivery amounts is set forth in Exhibit D.

4.4 Deliveries in Deficit of Delivery Obligation. Seller’s failure to deliver the Minimum Annual Delivery in any Contract Year (prorated if necessary) shall be a default, and Seller shall be liable for damages in accordance with Section 11.

4.5 Energy Delivery Schedule. Seller has provided a monthly schedule of Net Energy expected to be delivered by the Facility (“Energy Delivery Schedule”), incorporated into Exhibit D.

Transfer of Title to Green Tags; Documentation of Green Tags Transfers. Title to the Green Tags shall pass from Seller to PacifiCorp immediately upon the generation of the Output at the Facility that gives rise to such Green Tags. The Parties shall execute all additional documents and instruments reasonably requested by PacifiCorp in order to further document the transfer of the Green Tags to PacifiCorp or its designees. Without limiting the generality of the foregoing, Seller shall, on or before the 10th day of each month, deliver to PacifiCorp a Green Tags Attestation and Bill of Sale in the form attached as Exhibit _____H for all Green Tags delivered to PacifiCorp hereunder in the preceding month, along with any attestation that is then-current with the Center for Resource Solution’s Green-e program or successor organization in case the Center for Resource Solutions is replaced by another party over the life of the contract.

Seller, at its own cost and expense, shall register with, pay all fees required by, and comply with, all reporting and other requirements of WREGIS relating to the Facility or Green Tags. Seller shall ensure that the Facility will participate in and comply with, during the Term, all aspects of WREGIS. Seller shall, at its sole expense, use WREGIS as required pursuant to the WREGIS Operating Rules to effectuate the transfer of WREGIS Certificates to PacifiCorp, and transfer such WREGIS Certificates to PacifiCorp, in accordance with WREGIS reporting protocols and WREGIS Operating Rules. Seller may either elect to enter into a Qualified Reporting Entity Services Agreement with PacifiCorp in a form similar to that in Exhibit 4.6(2) or elect to act as its own WREGIS-defined Qualified Reporting Entity. PacifiCorp shall be entitled to a refund of the Green Tag Price Component of Green Tags associated with any Output for which WREGIS Certificates are not delivered, and shall not transfer the affected Green Tags back to Seller. Seller shall promptly give PacifiCorp copies of all documentation it submits to WREGIS. Further, in the event of the promulgation of a scheme involving Green Tags administered by CAMD, upon notification by CAMD that any transfers contemplated by this Agreement will not be recorded, the Parties shall promptly cooperate in taking all reasonable actions necessary so that such transfers can be recorded. Seller shall not report under Section 1605(b) of the Energy Policy Act of 1992 or under any applicable program that any of the Green Tags purchased by PacifiCorp hereunder belong to any person other than PacifiCorp. Without limiting the generality of PacifiCorp's ownership of the Green Tag Reporting Rights, PacifiCorp may report under such program that such Environmental Attributes purchased hereunder belong to it. Each Party shall promptly give the other Party copies of all documents it submits to the CAMD to effectuate any transfers. Seller shall at its expense cause the Facility to maintain its registration in good standing with the Center for Resource Solution's Green-e program throughout the Term. Seller shall reasonably cooperate in any registration by PacifiCorp of the Facility in the renewable portfolio standard or equivalent program in all such further states and programs in which PacifiCorp may wish to register or maintained registration erred-of the Facility by providing copies of all such information as PacifiCorp reasonably requires for such registration.

4.54.6

SECTION 5: PURCHASE PRICES

5.1 Seller shall have the option to select one of ~~four~~ five pricing options:—: Standard Fixed Avoided Cost Prices ("Fixed Price Standard"), Renewable Fixed Avoided Cost Prices ("Fixed Price Renewable"), Firm Market Indexed Avoided Cost Prices ("Firm Electric Market"), Gas Market Indexed Avoided Cost Prices ("Gas Market"), or Banded Gas Market Indexed Avoided Cost Prices ("Banded Gas Market"), as published in Schedule 37. Once an option is selected the option will remain in effect for the duration of the Facility's contract. Seller has selected the following (Seller to initial one):

- Fixed Price Standard
- Fixed Price Renewable
- Firm Electric Market
- Gas Market
- Banded Gas Market

A copy of Schedule 37, and a table summarizing the purchase prices under the pricing option selected by Seller, is attached as **Exhibit G**.

5.2 (Fixed Price Standard Sellers Only). In the event Seller elects the Fixed Price Standard payment method, PacifiCorp shall pay Seller the applicable On-Peak and Off-Peak rates specified in **Schedule 37** during the first fifteen (15) years after the Scheduled Initial Delivery Date. Thereafter, PacifiCorp shall pay Seller market-based rates, using the following pricing option (Seller to initial one):

- _____ Firm Electric Market
- _____ Gas Market
- _____ Banded Gas Market

5.3 (Fixed Price Renewable Sellers Only). In the event Seller elects the Fixed Price Renewable payment method, PacifiCorp shall pay Seller the applicable On-Peak and Off-Peak rates specified in **Schedule 37** during the first fifteen (15) years after the Scheduled Initial Delivery Date. Thereafter, PacifiCorp shall pay Seller Firm Electric Market.

~~5.3.4~~ If the Seller elects a gas market indexed price option, the index shall be the Opal Gas Market Index as provided in Schedule 37. In the event that Platt ceases to publish the Opal Gas Market Index, the Company shall replace the index with a similar gas index.

~~5.4.5~~ For all Excess Output and for all Net Output delivered prior to the Commercial Operation Date, PacifiCorp shall pay Seller a 93 percent times of the blended-market index price for day-ahead non-firm energy at Mid-Columbia, California-Oregon Border (COB), Four Corners and Palo Verde (Mid-C) market indexes as reported by the ICE Dow Jones, for the On-Peak and Off-Peak periods. PacifiCorp shall document its calculation of the blended rate, upon request, to Seller. Such payment will be accomplished by adjustments pursuant to Section 9.2.

5.6 ~~5.5~~ Environmental Attributes. PacifiCorp waives any claim to Seller's ownership of Environmental Attributes under this Agreement. Environmental Attributes means (a) the Environmental Attributes associated with all Output, together with (b) the Green Tag Reporting Rights associated with such energy and Environmental Attributes, however commercially transferred or traded under any or other product names, such as "Renewable Energy Credits," "Green Tags," "Green e-Certified," or as those terms are commonly used in the regional electric utility industry. One Renewable Energy Credit represents the Environmental Attributes made available by the generation of one MWh of energy from the Facility, include, but are not limited to, Green Tags, Green Certificates, Renewable Energy Credits (RECs) and Tradable Renewable Certificates (TRCs) (as those terms are commonly used in the regional electric utility industry) directly associated with the production of energy from the Seller's Facility.

(Fixed Price Standard Sellers Only): PacifiCorp waives any claim to Seller's ownership of Environmental Attributes Green Tags under this Agreement.

(Fixed Price Renewable Seller Only): During the Renewable Resource Deficiency Period Seller shall transfer these Environmental Attributes Green Tags to PacifiCorp where

~~“Renewable Resource Deficiency” means the period January 1, through the Termination Date in accordance with Section 4.6.~~

SECTION 6: OPERATION AND CONTROL

6.1 As-Built Supplement. Upon completion of initial (and any subsequent) construction of the Facility, Seller shall provide PacifiCorp an As-built Supplement to specify the actual Facility as built. The As-built Supplement must be reviewed and approved by PacifiCorp, which approval shall not unreasonably be withheld, conditioned or delayed.

6.2 Incremental Utility Upgrades. At start-up (and at any other time upon at least six month’s prior written notice), Seller may increase Net Output, if such increase is due to normal variances in estimated versus actual performance, changed Facility operations, or improvements in Facility efficiency. Seller may not increase Net Output under this Agreement by installing additional generating units. In the case of substantial upgrades, PacifiCorp may require Seller to comply with Section 3.2.8(e) (in the event that the Facility upgrade causes the Facility Capacity Rating to exceed 3,000 kW) and increase its Minimum Annual Delivery obligation in Section 4.3 (if appropriate). PacifiCorp may also update Seller’s security obligation (if applicable). So long as the Facility Capacity Rating after the upgrade is 10,000 kW or less, Seller will continue to receive the Contract Price for the Net Output, as set forth in Sections 5.1 and 5.2 of this Agreement. If Seller increases the Facility Capacity Rating above 10,000 kW, then (on a going forward basis) PacifiCorp shall pay Seller the Contract Price for the fraction of total Net Output equal to 10,000 kW divided by the Facility Capacity Rating of the upgraded Facility. For the remaining fraction of Net Output, PacifiCorp and Seller shall agree to a new negotiated rate. Seller shall be responsible for ensuring that any planned increase in the Facility Capacity Rating or the maximum instantaneous capacity of the Facility complies with Seller’s Generation Interconnection Agreement and any other agreements with PacifiCorp.

6.3 Seller shall operate and maintain the Facility in a safe manner in accordance with the Generation Interconnection Agreement (if applicable), Prudent Electrical Practices and in accordance with the requirements of all applicable federal, state and local laws and the National Electric Safety Code as such laws and code may be amended from time to time. PacifiCorp shall have no obligation to purchase Net Output from the Facility to the extent the interconnection between the Facility and PacifiCorp’s electric system is disconnected, suspended or interrupted, in whole or in part, pursuant to the Generation Interconnection Agreement, or to the extent generation curtailment is required as a result of Seller’s non-compliance with the Generation Interconnection Agreement. PacifiCorp shall have the right to inspect the Facility to confirm that Seller is operating the Facility in accordance with the provisions of this Section 6.3 upon reasonable notice to Seller. Seller is solely responsible for the operation and maintenance of the Facility. PacifiCorp shall not, by reason of its decision to inspect or not to inspect the Facility, or by any action or inaction taken with respect to any such inspection, assume or be held responsible for any liability or occurrence arising from the operation and maintenance by Seller of the Facility.

6.4 Scheduled Outages. Seller may cease operation of the entire Facility or individual units, if applicable, for maintenance or other purposes. Seller shall exercise its best efforts to notify PacifiCorp of planned outages at least ninety (90) days prior, and shall reasonably accommodate PacifiCorp's request, if any, to reschedule such planned outage in order to accommodate PacifiCorp's need for Facility operation.

6.5 Unplanned Outages. In the event of an unscheduled outage or curtailment exceeding twenty-five (25) percent of the Facility Capacity Rating (other than curtailments due to lack of motive force), Seller immediately shall notify PacifiCorp of the necessity of such unscheduled outage or curtailment, the time when such has occurred or will occur and the anticipated duration. Seller shall take all reasonable measures and exercise its best efforts to avoid unscheduled outage or curtailment, to limit the duration of such, and to perform unscheduled maintenance during Off-Peak hours.

SECTION 7: FUEL/MOTIVE FORCE

Prior to the Effective Date of this Agreement, Seller provided to PacifiCorp a fuel or motive force plan acceptable to PacifiCorp in its reasonable discretion and attached hereto as **Exhibit D-1**, together with a certification from a Licensed Professional Engineer to PacifiCorp attached hereto as **Exhibit D-2**, certifying that the implementation of the fuel or motive force plan can reasonably be expected to provide fuel or motive force to the Facility for the duration of this Agreement adequate to generate power and energy in quantities necessary to deliver the Minimum Annual Delivery set forth by Seller in Section 4.

SECTION 8: METERING

8.1 PacifiCorp shall design, furnish, install, own, inspect, test, maintain and replace all metering equipment required pursuant to the Generation Interconnection Agreement, if applicable.

8.2 Metering shall be performed at the location and in a manner consistent with this Agreement and as specified in the Generation Interconnection Agreement, or, if the Net Output is to be wheeled to PacifiCorp by another utility, metering will be performed in accordance with the terms of PacifiCorp's interconnection agreement with such other utility. All quantities of energy purchased hereunder shall be adjusted to account for electrical losses, if any between the point of metering and the Point of Delivery, so that the purchased amount reflects the net amount of energy flowing into PacifiCorp's system at the Point of Delivery.

8.3 PacifiCorp shall periodically inspect, test, repair and replace the metering equipment as provided in the Generation Interconnection Agreement, if applicable. If the Net Output is to be wheeled to PacifiCorp by another utility, meter inspection, testing, repair and replacement will be performed in accordance with the terms of PacifiCorp's interconnection agreement with such utility. If any of the inspections or tests discloses an error exceeding two percent (2%), either fast or slow, proper correction, based upon the inaccuracy found, shall be made of previous readings for the actual period during which the metering equipment rendered inaccurate measurements if that period can be ascertained. If the actual period cannot be

ascertained, the proper correction shall be made to the measurements taken during the time the metering equipment was in service since last tested, but not exceeding three (3) Billing Periods, in the amount the metering equipment shall have been shown to be in error by such test. Any correction in billings or payments resulting from a correction in the meter records shall be made in the next monthly billing or payment rendered following the repair of the meter.

SECTION 9: BILLINGS, COMPUTATIONS, AND PAYMENTS

9.1 On or before the thirtieth (30th) day following the end of each Billing Period, PacifiCorp shall send to Seller payment for Seller's deliveries of Net Output to PacifiCorp, together with computations supporting such payment. PacifiCorp may offset any such payment to reflect amounts owing from Seller to PacifiCorp pursuant to this Agreement, the Generation Interconnection Agreement, or any other agreement between the Parties.

9.2 Corrections. PacifiCorp shall have up to eighteen months to adjust any payment made pursuant to Section 9.1. In the event PacifiCorp determines it has overpaid Seller (for Excess Output or otherwise), PacifiCorp may adjust Seller's future payment accordingly in order to recapture any overpayment in a reasonable time.

9.3 Any amounts owing after the due date thereof shall bear interest at the Prime Rate plus two percent (2%) from the date due until paid; *provided, however*, that the interest rate shall at no time exceed the maximum rate allowed by applicable law.

SECTION 10: SECURITY

Unless Seller has adopted the creditworthiness warranties contained in Section 3.2.8, Seller must provide security (if requested by PacifiCorp) in the form of a cash escrow, letter of credit, senior lien, or step-in rights. Seller hereby elects to provide, in accordance with the applicable terms of this Section 10, the following security (Seller to initial one selection only):

- Cash Escrow
- Letter of Credit
- Senior Lien
- Step-in Rights
- Seller has adopted the Creditworthiness Warranties of Section 3.2.8.

In the event Seller's obligation to post default security (under Section 10 or Section 11.1.4) arises solely from Seller's delinquent performance of construction-related financial obligations, upon Seller's request, PacifiCorp will excuse Seller from such obligation in the event Seller has negotiated financial arrangements with its construction lenders that mitigate Seller's financial risks to PacifiCorp's reasonable satisfaction.

[SKIP THIS SECTION 10.1 UNLESS SELLER SELECTED CASH ESCROW ALTERNATIVE]

10.1 Cash Escrow Security. Seller shall deposit in an escrow account established by PacifiCorp in a banking institution acceptable to both Parties, the Default Security. Such sum shall earn interest at the rate applicable to money market deposits at such banking institution from time to time. To the extent PacifiCorp receives payment from the Default Security, Seller shall, within fifteen (15) days, restore the Default Security as if no such deduction had occurred.

[SKIP THIS SECTION 10.2 UNLESS SELLER SELECTED LETTER OF CREDIT ALTERNATIVE]

10.2 Letter of Credit Security. Seller shall post and maintain in an amount equal to the Default Security: (a) a guaranty from a party that satisfies the Credit Requirements, in a form acceptable to PacifiCorp in its discretion, or (b) a Letter of Credit in favor of PacifiCorp. To the extent PacifiCorp receives payment from the Default Security, Seller shall, within fifteen (15) days, restore the Default Security as if no such deduction had occurred.

[SKIP THIS SECTION 10.3 UNLESS SELLER SELECTED SENIOR LIEN ALTERNATIVE]

10.3 Senior Lien. Before the Scheduled Commercial Operation Date, Seller shall grant PacifiCorp a senior, unsubordinated lien on the Facility and its assets as security for performance of this Agreement by executing, acknowledging and delivering a security agreement and a deed of trust or a mortgage, in a recordable form (each in a form satisfactory to PacifiCorp in the reasonable exercise of its discretion). Pending delivery of the senior lien to PacifiCorp, Seller shall not cause or permit the Facility or its assets to be burdened by liens or other encumbrances that would be superior to PacifiCorp's, other than workers', mechanics', suppliers' or similar liens, or tax liens, in each case arising in the ordinary course of business that are either not yet due and payable or that have been released by means of a performance bond posted within eight (8) calendar days of the commencement of any proceeding to foreclose the lien.

[SKIP THIS SECTION 10.4 UNLESS SELLER SELECTED STEP-IN RIGHTS ALTERNATIVE]

10.4 Step-in Rights (Operation by PacifiCorp Following Event of Default of Seller).

Prior to any termination of this Agreement due to an Event of Default of Seller, as identified in Section 11, PacifiCorp shall have the right, but not the obligation, to possess, assume control of, and operate the Facility as agent for Seller (in accordance with Seller's rights, obligations, and interest under this Agreement) during the period provided for herein. Seller shall not grant any person, other than the lending institution providing financing to the Seller for construction of the Facility ("Facility Lender"), a right to possess, assume control of, and operate the Facility that is equal to or superior to PacifiCorp's right under this Section 10.4.

PacifiCorp shall give Seller ten (10) calendar days notice in advance of the contemplated exercise of PacifiCorp's rights under this Section 10.4. Upon such notice, Seller shall collect and have available at a convenient, central location at the Facility all documents, contracts, books, manuals, reports, and records required to construct, operate, and maintain the Facility in

accordance with Prudent Electrical Practices. Upon such notice, PacifiCorp, its employees, contractors, or designated third parties shall have the unrestricted right to enter the Facility for the purpose of constructing and/or operating the Facility. Seller hereby irrevocably appoints PacifiCorp as Seller's attorney-in-fact for the exclusive purpose of executing such documents and taking such other actions as PacifiCorp may reasonably deem necessary or appropriate to exercise PacifiCorp's step-in rights under this Section 10.4.

During any period that PacifiCorp is in possession of and constructing and/or operating the Facility, no proceeds or other monies attributed to operation of the Facility shall be remitted to or otherwise provided to the account of Seller until all Events of Default of Seller have been cured.

During any period that PacifiCorp is in possession of and operating the Facility, Seller shall retain legal title to and ownership of the Facility and PacifiCorp shall assume possession, operation, and control solely as agent for Seller.

In the event PacifiCorp is in possession and control of the Facility for an interim period, Seller shall resume operation and PacifiCorp shall relinquish its right to operate when Seller demonstrates to PacifiCorp's reasonable satisfaction that it will remove those grounds that originally gave rise to PacifiCorp's right to operate the Facility, as provided above, in that Seller (i) will resume operation of the Facility in accordance with the provisions of this Agreement, and (ii) has cured any Events of Default of Seller which allowed PacifiCorp to exercise its rights under this Section 10.4.

In the event that PacifiCorp is in possession and control of the Facility for an interim period, the Facility Lender, or any nominee or transferee thereof, may foreclose and take possession of and operate the Facility and PacifiCorp shall relinquish its right to operate when the Facility Lender or any nominee or transferee thereof, requests such relinquishment.

PacifiCorp's exercise of its rights hereunder to possess and operate the Facility shall not be deemed an assumption by PacifiCorp of any liability attributable to Seller. If at any time after exercising its rights to take possession of and operate the Facility PacifiCorp elects to return such possession and operation to Seller, PacifiCorp shall provide Seller with at least fifteen (15) calendar days advance notice of the date PacifiCorp intends to return such possession and operation, and upon receipt of such notice Seller shall take all measures necessary to resume possession and operation of the Facility on such date.

SECTION 11: DEFAULTS AND REMEDIES

11.1 Events of Default. The following events shall constitute defaults under this Agreement:

Breach of Material Term. Failure of a Party to perform any material obligation imposed upon that Party by this Agreement (including but not limited to failure by Seller to meet any deadline set forth in Section 2) or breach by a Party of a representation or warranty set forth in this Agreement.

Default on Other Agreements. Seller's failure to cure any default under any commercial or financing agreements or instrument (including the Generation Interconnection Agreement) within the time allowed for a cure under such agreement or instrument.

Insolvency. A Party (a) makes an assignment for the benefit of its creditors; (b) files a petition or otherwise commences, authorizes or acquiesces in the commencement of a proceeding or cause of action under any bankruptcy or similar law for the protection of creditors, or has such a petition filed against it and such petition is not withdrawn or dismissed within sixty (60) days after such filing; (c) becomes insolvent; or (d) is unable to pay its debts when due.

Material Adverse Change. A Material Adverse Change has occurred with respect to Seller and Seller fails to provide such performance assurances as are reasonably requested by PacifiCorp, including without limitation the posting of additional Default Security, within thirty (30) days from the date of such request;

Delayed Commercial Operations. Seller's failure to achieve the Commercial Operation Date by the Scheduled Commercial Operation Date.

Underdelivery. If Seller's Facility has a Facility Capacity Rating of 100 kW or less, Seller's failure to satisfy the minimum delivery obligation of Section 4.3 for two (2) consecutive years; else Seller's failure to satisfy the minimum delivery obligation of Section 4.3 for one year.

11.2 Notice; Opportunity to Cure.

Notice. In the event of any default hereunder, the non-defaulting Party must notify the defaulting Party in writing of the circumstances indicating the default and outlining the requirements to cure the default.

Opportunity to Cure. A Party defaulting under Section 11.1.1 or 11.1.5 shall have thirty (30) days to cure after receipt of proper notice from the non-defaulting Party. This thirty (30) day period shall be extended by an additional ninety (90) days if (a) the failure cannot reasonably be cured within the thirty (30) day period despite diligent efforts, (b) the default is capable of being cured within the additional ninety (90) day period, and (c) the defaulting Party commences the cure within the original thirty (30) day period and is at all times thereafter diligently and continuously proceeding to cure the failure.

Seller Default Under Other Agreements. Seller shall cause any notices of default under any of its commercial or financing agreements or instruments to be sent by the other party to such agreements or instruments, or immediately forwarded, to PacifiCorp as a notice in accordance with Section 23.

Seller Delinquent on Construction-related Financial Obligations. Seller promptly shall notify PacifiCorp (or cause PacifiCorp to be notified) anytime it becomes delinquent under any construction related financing agreement or instrument related to the Facility. Such delinquency may constitute a Material Adverse Change, subject to Section 11.1.4.

11.3 Termination.

Notice of Termination. If a default described herein has not been cured within the prescribed time, above, the non-defaulting Party may terminate this Agreement at its sole discretion by delivering written notice to the other Party and may pursue any and all legal or equitable remedies provided by law or pursuant to this Agreement; *provided, however* that PacifiCorp shall not terminate: (a) for a default under Section 11.1.5 unless PacifiCorp is in a resource deficient state during the period Commercial Operation is delayed; or (b) for a default under Section 11.1.6, unless such default is material. The rights provided in Section 10 and this Section 11 are cumulative such that the exercise of one or more rights shall not constitute a waiver of any other rights. Further, the Parties may by mutual written agreement amend this Agreement in lieu of a Party's exercise of its right to terminate.

In the event this Agreement is terminated because of Seller's default and Seller wishes to again sell Net Output to PacifiCorp following such termination, PacifiCorp in its sole discretion may require that Seller shall do so subject to the terms of this Agreement, including but not limited to the Contract Price, until the Termination Date (as set forth in Section 2.4). At such time Seller and PacifiCorp agree to execute a written document ratifying the terms of this Agreement.

Damages. If this Agreement is terminated as a result of Seller's default, Seller shall pay PacifiCorp the positive difference, if any, obtained by subtracting the Contract Price from the sum of the Replacement Price for the Minimum Annual Delivery that Seller was otherwise obligated to provide for a period of twenty-four (24) months from the date of termination plus any cost incurred for transmission purchased to deliver the replacement power to the Point of Delivery, and the estimated administrative cost to the utility to acquire replacement power. Amounts owed by Seller pursuant to this paragraph shall be due within five (5) business days after any invoice from PacifiCorp for the same.

If this Agreement is terminated because of Seller's default, PacifiCorp may foreclose upon any security provided pursuant to Section 10 to satisfy any amounts that Seller owes PacifiCorp arising from such default.

11.4 Damages.

Failure to Deliver Net Output. In the event of Seller default under Subsection 11.1.5 or Subsection 11.1.6, then Seller shall pay PacifiCorp the positive difference, if any, obtained by subtracting the Contract Price from the Replacement Price for any energy and capacity that Seller was otherwise obligated (under Section 4.3) to provide during the period of default ("**Net Replacement Power Costs**"); *provided, however*, that the positive difference obtained by subtracting the Contract Price from the Replacement Price shall not exceed the Contract Price, and the period of default under this Section 11.4.1 shall not exceed one Contract Year.

Recoupment of Damages.

Default Security Available. If Seller has posted Default Security, PacifiCorp may draw upon that security to satisfy any damages, above.

Default Security Unavailable. If Seller has not posted Default Security, or if PacifiCorp has exhausted the Default Security, PacifiCorp may collect any remaining amount owing by partially

withholding future payments to Seller over a reasonable period of time, which period shall not be less than the period over which the default occurred. PacifiCorp and Seller shall work together in good faith to establish the period, and monthly amounts, of such withholding so as to avoid Seller's default on its commercial or financing agreements necessary for its continued operation of the Facility.

SECTION 12: INDEMNIFICATION AND LIABILITY

12.1 Indemnities.

Indemnity by Seller. Seller shall release, indemnify and hold harmless PacifiCorp, its directors, officers, agents, and representatives against and from any and all loss, fines, penalties, claims, actions or suits, including costs and attorney's fees, both at trial and on appeal, resulting from, or arising out of or in any way connected with (a) the energy delivered by Seller under this Agreement to and at the Point of Delivery, (b) any facilities on Seller's side of the Point of Delivery, (c) Seller's operation and/or maintenance of the Facility, or (d) arising from this Agreement, including without limitation any loss, claim, action or suit, for or on account of injury, bodily or otherwise, to, or death of, persons, or for damage to, or destruction or economic loss of property belonging to PacifiCorp, Seller or others, excepting only such loss, claim, action or suit as may be caused solely by the fault or gross negligence of PacifiCorp, its directors, officers, employees, agents or representatives.

Indemnity by PacifiCorp. PacifiCorp shall release, indemnify and hold harmless Seller, its directors, officers, agents, Lenders and representatives against and from any and all loss, fines, penalties, claims, actions or suits, including costs and attorney's fees, both at trial and on appeal, resulting from, or arising out of or in any way connected with the energy delivered by Seller under this Agreement after the Point of Delivery, including without limitation any loss, claim, action or suit, for or on account of injury, bodily or otherwise, to, or death of, persons, or for damage to, or destruction or economic loss of property, excepting only such loss, claim, action or suit as may be caused solely by the fault or gross negligence of Seller, its directors, officers, employees, agents, Lenders or representatives.

12.2 No Dedication. Nothing in this Agreement shall be construed to create any duty to, any standard of care with reference to, or any liability to any person not a Party to this Agreement. No undertaking by one Party to the other under any provision of this Agreement shall constitute the dedication of that Party's system or any portion thereof to the other Party or to the public, nor affect the status of PacifiCorp as an independent public utility corporation or Seller as an independent individual or entity.

12.3 No Consequential Damages. EXCEPT TO THE EXTENT SUCH DAMAGES ARE INCLUDED IN THE LIQUIDATED DAMAGES, DELAY DAMAGES, COST TO COVER DAMAGES OR OTHER SPECIFIED MEASURE OF DAMAGES EXPRESSLY PROVIDED FOR IN THIS AGREEMENT, NEITHER PARTY SHALL BE LIABLE TO THE OTHER PARTY FOR SPECIAL, PUNITIVE, INDIRECT, EXEMPLARY OR CONSEQUENTIAL DAMAGES, WHETHER SUCH DAMAGES ARE ALLOWED OR

PROVIDED BY CONTRACT, TORT (INCLUDING NEGLIGENCE), STRICT LIABILITY, STATUTE OR OTHERWISE.

SECTION 13: INSURANCE (FACILITIES OVER 200KW ONLY)

13.1 Certificates. Prior to connection of the Facility to PacifiCorp's electric system, or another utility's electric system if delivery to PacifiCorp is to be accomplished by wheeling, Seller shall secure and continuously carry insurance in compliance with the requirements of this Section. Seller shall provide PacifiCorp insurance certificate(s) (of "ACORD Form" or the equivalent) certifying Seller's compliance with the insurance requirements hereunder. Commercial General Liability coverage written on a "claims-made" basis, if any, shall be specifically identified on the certificate. If requested by PacifiCorp, a copy of each insurance policy, certified as a true copy by an authorized representative of the issuing insurance company, shall be furnished to PacifiCorp.

13.2 Required Policies and Coverages. Without limiting any liabilities or any other obligations of Seller under this Agreement, Seller shall secure and continuously carry with an insurance company or companies rated not lower than "B+" by the A.M. Best Company the insurance coverage specified below:

Commercial General Liability insurance, to include contractual liability, with a minimum single limit of \$1,000,000 to protect against and from all loss by reason of injury to persons or damage to property based upon and arising out of the activity under this Agreement.

All Risk Property insurance providing coverage in an amount at least equal to the full replacement value of the Facility against "all risks" of physical loss or damage, including coverage for earth movement, flood, and boiler and machinery. The Risk policy may contain separate sub-limits and deductibles subject to insurance company underwriting guidelines. The Risk Policy will be maintained in accordance with terms available in the insurance market for similar facilities.

13.3 The Commercial General Liability policy required herein shall include i) provisions or endorsements naming PacifiCorp, its Board of Directors, Officers and employees as additional insureds, and ii) cross liability coverage so that the insurance applies separately to each insured against whom claim is made or suit is brought, even in instances where one insured claims against or sues another insured.

13.4 All liability policies required by this Agreement shall include provisions that such insurance is primary insurance with respect to the interests of PacifiCorp and that any other insurance maintained by PacifiCorp is excess and not contributory insurance with the insurance required hereunder, and provisions that such policies shall not be canceled or their limits of liability reduced without 1) ten (10) days prior written notice to PacifiCorp if canceled for nonpayment of premium, or 2) thirty (30) days prior written notice to PacifiCorp if canceled for any other reason.

13.5 Insurance coverage provided on a "claims-made" basis shall be maintained by Seller for a minimum period of five (5) years after the completion of this Agreement and for

such other length of time necessary to cover liabilities arising out of the activities under this Agreement.

SECTION 14: FORCE MAJEURE

14.1 As used in this Agreement, “Force Majeure” or “an event of Force Majeure” means any cause beyond the reasonable control of the Seller or of PacifiCorp which, despite the exercise of due diligence, such Party is unable to prevent or overcome. By way of example, Force Majeure may include but is not limited to acts of God, fire, flood, storms, wars, hostilities, civil strife, strikes, and other labor disturbances, earthquakes, fires, lightning, epidemics, sabotage, restraint by court order or other delay or failure in the performance as a result of any action or inaction on behalf of a public authority which by the exercise of reasonable foresight such Party could not reasonably have been expected to avoid and by the exercise of due diligence, it shall be unable to overcome, subject, in each case, to the requirements of the first sentence of this paragraph. Force Majeure, however, specifically excludes the cost or availability of fuel or motive force resources to operate the Facility or changes in market conditions that affect the price of energy or transmission. If either Party is rendered wholly or in part unable to perform its obligation under this Agreement because of an event of Force Majeure, that Party shall be excused from whatever performance is affected by the event of Force Majeure to the extent and for the duration of the event of Force Majeure, after which such Party shall recommence performance of such obligation, provided that:

the non-performing Party, shall, within two (2) weeks after the occurrence of the Force Majeure, give the other Party written notice describing the particulars of the occurrence; and

the suspension of performance shall be of no greater scope and of no longer duration than is required by the event of Force Majeure; and

the non-performing Party uses its best efforts to remedy its inability to perform.

14.2 No obligations of either Party which arose before the Force Majeure causing the suspension of performance shall be excused as a result of the event of Force Majeure.

14.3 Neither Party shall be required to settle any strike, walkout, lockout or other labor dispute on terms which, in the sole judgment of the Party involved in the dispute, are contrary to the Party's best interests.

14.4 PacifiCorp may terminate the Agreement if Seller fails to remedy Seller's inability to perform, due to an event of Force Majeure, within six months after the occurrence of the event.

SECTION 15: SEVERAL OBLIGATIONS

Nothing contained in this Agreement shall ever be construed to create an association, trust, partnership or joint venture or to impose a trust or partnership duty, obligation or liability

between the Parties. If Seller includes two or more parties, each such party shall be jointly and severally liable for Seller's obligations under this Agreement.

SECTION 16: CHOICE OF LAW

This Agreement shall be interpreted and enforced in accordance with the laws of the State of Oregon, excluding any choice of law rules which may direct the application of the laws of another jurisdiction.

SECTION 17: PARTIAL INVALIDITY

It is not the intention of the Parties to violate any laws governing the subject matter of this Agreement. If any of the terms of the Agreement are finally held or determined to be invalid, illegal or void as being contrary to any applicable law or public policy, all other terms of the Agreement shall remain in effect. If any terms are finally held or determined to be invalid, illegal or void, the Parties shall enter into negotiations concerning the terms affected by such decision for the purpose of achieving conformity with requirements of any applicable law and the intent of the Parties to this Agreement.

SECTION 18: WAIVER

Any waiver at any time by either Party of its rights with respect to a default under this Agreement or with respect to any other matters arising in connection with this Agreement must be in writing, and such waiver shall not be deemed a waiver with respect to any subsequent default or other matter.

SECTION 19: GOVERNMENTAL JURISDICTIONS AND AUTHORIZATIONS

This Agreement is subject to the jurisdiction of those governmental agencies having control over either Party or this Agreement. Seller shall at all times maintain in effect all local, state and federal licenses, permits and other approvals as then may be required by law for the construction, operation and maintenance of the Facility, and shall provide upon request copies of the same to PacifiCorp.

SECTION 20: REPEAL OF PURPA

This Agreement shall not terminate upon the repeal of the PURPA, unless such termination is mandated by federal or state law.

SECTION 21: SUCCESSORS AND ASSIGNS

This Agreement and all of the terms hereof shall be binding upon and inure to the benefit of the respective successors and assigns of the Parties. No assignment hereof by either Party shall become effective without the written consent of the other Party being first obtained and such consent shall not be unreasonably withheld, conditioned or delayed. Notwithstanding the foregoing, either Party may assign this Agreement without the other Party's consent to a lender as part of a financing transaction or as part of (a) a sale of all or substantially all of the assigning Party's assets, or (b) a merger, consolidation or other reorganization of the assigning Party.

SECTION 22: ENTIRE AGREEMENT

22.1 This Agreement supersedes all prior agreements, proposals, representations, negotiations, discussions or letters, whether oral or in writing, regarding PacifiCorp's purchase of Net Output from the Facility. No modification of this Agreement shall be effective unless it is in writing and signed by both Parties.

22.2 By executing this Agreement, Seller releases PacifiCorp from any claims, known or unknown, that may have arisen prior to the Effective Date.

SECTION 23: NOTICES

23.1 All notices except as otherwise provided in this Agreement shall be in writing, shall be directed as follows and shall be considered delivered if delivered in person or when deposited in the U.S. Mail, postage prepaid by certified or registered mail and return receipt requested.

Notices	PacifiCorp	Seller
All Notices	PacifiCorp 825 NE Multnomah Street Portland, OR 97232 Attn: Contract Administration, Suite 600 Phone: (503) 813 - 59525380 Facsimile: (503) 813 - 6291 Duns: 00-790-9013 Federal Tax ID Number: 93-0246090	
All Invoices:	(same as street address above) Attn: Back Office, Suite 700 Phone: (503) 813 - 5578 Facsimile: (503) 813 - 5580	
Scheduling:	(same as street address above) Attn: Resource Planning, Suite 600 Phone: (503) 813 - 6090 Facsimile: (503) 813 - 6265	
Payments:	(same as street address above) Attn: Back Office, Suite 700	

Notices	PacifiCorp	Seller
	Phone: (503) 813 - 5578 Facsimile: (503) 813 - 5580	
Wire Transfer:	Bank One N.A. ABA: ACCT: NAME: PacifiCorp Wholesale	
Credit and Collections:	(same as street address above) Attn: Credit Manager, Suite 7-1900 Phone: (503) 813 - 5684 Facsimile: (503) 813 - 5609	
With Additional Notices of an Event of Default or Potential Event of Default to:	(same as street address above) Attn: PacifiCorp General Counsel Phone: (503) 813-5029 Facsimile: (503) 813-7252	

23.2 The Parties may change the person to whom such notices are addressed, or their addresses, by providing written notices thereof in accordance with this Section 23.

IN WITNESS WHEREOF, the Parties hereto have caused this Agreement to be executed in their respective names as of the date first above written.

PacifiCorp

Seller

By: _____

By: _____

Name: _____

Name: _____

Title: _____

Title: _____

EXHIBIT A
DESCRIPTION OF SELLER'S FACILITY
[Seller to Complete]

Seller's Facility consists of _____ generators manufactured by _____ . More specifically, each generator at the Facility is described as:

Type (synchronous or inductive):

Model:

Number of Phases:

Rated Output (kW):

Rated Output (kVA):

Rated Voltage (line to line):

Rated Current (A): Stator: ____ A; Rotor: ____ A

Maximum kW Output: _____ kW **Maximum kVA Output:** _____ kVA

Minimum kW Output: _____ kW

Manufacturer's Guaranteed Cut-in Wind Speed [if applicable]:

Facility Capacity Rating: _____ kW at _____

Identify the maximum output of the generator(s) and describe any differences between that output and the Nameplate Capacity Rating:

Station service requirements, and other loads served by the Facility, if any, are described as follows:

_____.

Location of the Facility: The Facility is to be constructed in the vicinity of _____ in _____ County, _____. The location is more particularly described as follows:

[legal description of parcel]

Power factor requirements:

Rated Power Factor (PF) or reactive load (kVAR):

EXHIBIT B

SELLER'S INTERCONNECTION FACILITIES

[Seller to provide its own diagram and description]

POINT OF DELIVERY / SELLER'S INTERCONNECTION FACILITIES

Instructions to Seller:

1. Include description of point of metering, and Point of Delivery
2. Provide interconnection single line drawing of Facility including any transmission facilities on Seller's side of the Point of Delivery.

EXHIBIT C
REQUIRED FACILITY DOCUMENTS

REQUIRED OF ALL FACILITIES:

QF Certification
Interconnection Agreement
Fuel Supply Agreement, if applicable
Qualifying Reporting Entity (QRE) Agreement

REQUIRED IF SELLER ELECTS TO GRANT SENIOR LIEN OR STEP-IN RIGHTS:

Deed or Lease to Facility Premises
Preliminary Title Report of Premises
Proof of ownership of Facility
Off-take sale agreements, e.g. surplus heat sale contract, if applicable

Depending upon the type of Facility and its specific characteristics, additional Required Facility Documents may be requested.

**EXHIBIT D-1
SELLER'S MOTIVE FORCE PLAN**

A. MONTHLY DELIVERY SCHEDULES AND SCHEDULED MAINTENANCE

Month	Average Energy (kWh)
January	
February	
March	
April	
May	
June	
July	
August	
September	
October	
November	
December	

Seller provide an estimate of the average monthly Net Output of the Facility, and explain the basis for the estimate.

B. MINIMUM ANNUAL DELIVERY CALCULATION

Seller specify the Minimum Annual Delivery of the Facility, and explain the basis for the estimate. NOTE: The Minimum Annual Delivery should be based on the most adverse natural motive force conditions reasonably expected and should take into account maintenance and Seller's load (if any).

C. MAXIMUM ANNUAL DELIVERY CALCULATION

Seller specify the estimated Maximum Annual Delivery of the Facility, and explain the basis for the estimate.

**EXHIBIT D-2
ENGINEER'S CERTIFICATION
OF
MOTIVE FORCE PLAN**

Seller provide a written declaration from a Licensed Professional Engineer to PacifiCorp that the Facility is likely capable under average conditions foreseeable during the term of this Agreement of meeting Seller's estimated average, maximum, and minimum Net Output.

EXHIBIT E

START-UP TESTING

Required factory testing includes such checks and tests necessary to determine that the equipment systems and subsystems have been properly manufactured and installed, function properly, and are in a condition to permit safe and efficient start-up of the Facility, which may include but are not limited to (as applicable): **[Seller identify appropriate tests]**

1. Pressure tests of all steam system equipment;
2. Calibration of all pressure, level, flow, temperature and monitoring instruments;
3. Operating tests of all valves, operators, motor starters and motor;
4. Alarms, signals, and fail-safe or system shutdown control tests;
5. Insulation resistance and point-to-point continuity tests;
6. Bench tests of all protective devices;
7. Tests required by manufacturer of equipment; and
8. Complete pre-parallel checks with PacifiCorp.

Required start-up tests are those checks and tests necessary to determine that all features and equipment, systems, and subsystems have been properly designed, manufactured, installed and adjusted, function properly, and are capable of operating simultaneously in such condition that the Facility is capable of continuous delivery into PacifiCorp's electrical system, which may include but are not limited to (as applicable):

1. Turbine/generator mechanical runs including shaft, vibration, and bearing temperature measurements;
2. Running tests to establish tolerances and inspections for final adjustment of bearings, shaft run-outs;
3. Brake tests;
4. Energization of transformers;
5. Synchronizing tests (manual and auto);
6. Stator windings dielectric test;
7. Armature and field windings resistance tests;
8. Load rejection tests in incremental stages from 5, 25, 50, 75 and 100 percent load;
9. Heat runs;
10. Tests required by manufacturer of equipment;
11. Excitation and voltage regulation operation tests;
12. Open circuit and short circuit; saturation tests;
13. Governor system steady state stability test;
14. Phase angle and magnitude of all PT and CT secondary voltages and currents to protective relays, indicating instruments and metering;
15. Auto stop/start sequence;
16. Level control system tests; and
17. Completion of all state and federal environmental testing requirements.

EXHIBIT F

Seller Authorization to Release Generation Data to PacifiCorp

[Interconnection Customer Letterhead]

Transmission Services
Attn: Director, Transmission Services
825 NE Multnomah, Suite 1600
Portland, OR 97232

RE: _____ Interconnection Request

Dear Sir:

_____ hereby voluntarily authorizes PacifiCorp's Transmission business unit to share _____'s generator interconnection information and generator meter data with Marketing Affiliate employees of PacifiCorp Energy, including, but not limited to those in the Commercial and Trading group. _____ acknowledges that PacifiCorp did not provide it any preferences, either operational or rate-related, in exchange for this voluntary consent.

Name

Title

Date

EXHIBIT G
SCHEDULE 37 and PRICING SUMMARY TABLE

Seller's Contact Person: [_____]

WITNESS MY HAND.

a _____

By _____

Its _____

Date: _____

This Attestation may be disclosed by Seller and PacifiCorp to others, including the Center for Resource Solutions and the public utility commissions having jurisdiction over PacifiCorp, to substantiate and verify the accuracy of PacifiCorp's advertising and public communication claims, as well as in PacifiCorp's advertising and other public communications.

EXHIBIT I

QUALIFIED REPORTING ENTITY SERVICES AGREEMENT

C & T Master v1.1; 071411

This Qualified Reporting Entity Services Agreement (this "Agreement") is entered into by and between PacifiCorp ("PacifiCorp") and _____ ("Counterparty"; PacifiCorp and Counterparty may be referred to individually herein as "Party" and collectively as "Parties") as of _____, _____, with reference to the following:

WHEREAS, Counterparty represents to PacifiCorp that it owns or otherwise has the rights to all or part of the non-energy attributes of the generation from that certain electric generation facility more particularly described on Exhibit A hereto (the "Facility"), or other rights respecting the Facility itself enabling it to lawfully enter hereinto; and

WHEREAS, The Western Renewable Electricity Generation Information System ("WREGIS") is a system tracking quantities of renewable energy generation generated by electric generating facilities in the nature of the Facility, as a Facility pursuant to WREGIS Terms of Use ("TOU"); and

WHEREAS, WREGIS requires that each Facility have a designated Qualified Reporting Entity; and

WHEREAS, Counterparty is an Account Holder in WREGIS and wishes to register the Facility with WREGIS; and

WHEREAS, Counterparty wishes to retain PacifiCorp to act as its WREGIS-defined Qualified Reporting Entity ("QRE") for the Facility;

NOW THEREFORE, in consideration of the mutual promises herein contained, the Parties agree as follows:

I. _____ Definitions: Rules of Construction.

1.1 _____ Initially capitalized terms used and not otherwise defined herein are defined in the in the Operating Rules or in Attachment 1 Definitions of the WREGIS TOU.

1.2 "Affiliate" means, with respect to any entity, each entity that directly or indirectly controls, is controlled by, or is under common control with, such designated entity, with "control" meaning the possession, directly or indirectly, of the power to direct management and policies, whether through the ownership of voting securities or by contract or otherwise. Notwithstanding the foregoing, with respect to PacifiCorp, Affiliate shall only include MidAmerican Energy Holdings Company and its direct, wholly owned subsidiaries.

1.3 "Business Day" means a day of the week other than Saturday, Sunday, or a federal holiday.

1.4 "Electric System Authority" means each of NERC, WECC, WREGIS, an RTO, a regional or sub-regional reliability council or authority, and any other similar council, corporation, organization or body of recognized standing with respect to the operations of the electric system in the WECC region.

1.5 "FERC" means the Federal Energy Regulatory Commission.

1.6 "Generation Interconnection Agreement" means the agreement entered into separately between Counterparty and Interconnection Provider concerning the Interconnection Facilities.

1.7 "Facility" is defined in the Preamble.

1.8 "Interconnection Facilities" means all the facilities installed, or to be installed, for the purpose of interconnecting the Facility to the System, including electrical transmission lines, upgrades, transformers and associated equipment, substations, relay and switching equipment, and safety equipment.

1.9 "Interconnection Provider" means the FERC-regulated or United States Department of Energy entity with whom the Facility has contracted for interconnection to the electric transmission grid; in the event Interconnection Provider is PacifiCorp, PacifiCorp would be the Interconnection Provider operating in its regulated transmission function, and not as the party hereto.

1.10 "Metering External Webpage" means a website owned and operated by PacifiCorp that PacifiCorp may at its option, but without being obligated to do so, make available and operate for the display of all data that will be included in the Monthly Generation Extract File.

1.11 "Monthly Generation Extract File" means a data file that contains generation data from Counterparty's Points of Metering and conforms to the characteristics and requirements set forth in the WREGIS Interface Control Document.

1.12 "NERC" means the North American Electric Reliability Corporation.

1.13 "Points of Metering" means the points at which electric generation is measured.

1.14 "Prudent Electrical Practices" means any of the practices, methods and acts engaged in or approved by a significant portion of the electrical utility industry or any of the practices, methods or acts, which, in the exercise of reasonable judgment in the light of the facts known at the time a decision is made, could have been expected to accomplish the desired result at the lowest reasonable cost consistent with reliability, safety and expedition. Prudent Electrical Practices is not intended to be limited to the optimum practice, method or act to the exclusion of all others, but rather to be a spectrum of possible practices, methods or acts.

1.15 "ORE" means a WREGIS-defined Qualified Reporting Entity.

1.16 "Renewable" is defined in section 2 of the WREGIS Operating Rules.

1.17 "Requirements of Law" means any applicable federal, state and local law, statute, regulation, rule, code or ordinance enacted, adopted, issued or promulgated by any federal, state, local or other Governmental Authority or regulatory body (including those pertaining to electrical, building, zoning, environmental and occupational safety and health requirements).

1.18 "Settlement Estimation Procedures" means a calculation based on standard utility estimation rules using algorithms developed and approved by PacifiCorp's billing department.

1.19 "System" means the electric transmission substation and transmission or distribution facilities owned, operated or maintained by Transmission Provider, which shall include, after construction and installation of the Facility, the circuit reinforcements, extensions, and associated terminal facility reinforcements or additions required to interconnect the Facility, all as set forth in the Generation Interconnection Agreement.

1.20 "Tariff" means PacifiCorp FERC Electric Tariff Fifth Revised Volume No. 11 Pro Forma Open Access Transmission Tariff.

1.21 "Transmission Provider" means the FERC-regulated or United States Department of Energy entity with whom the Facility has contracted for electric transmission at and away from the Facility to any point on, or interconnection with, the electric transmission grid; in the event Transmission Provider is PacifiCorp, PacifiCorp would be the Interconnection Provider operating in its regulated transmission function, and not as the party hereto..

1.22 "Wholesale Generation Also Serving On-Site Loads" is defined in section 2 of the WREGIS Operating Rules.

1.23 "WECC" means the Western Electricity Coordinating Council.

1.24 "WREGIS" means the Western Renewable Energy Generation Information System.

1.25 "WREGIS Certificate" or "Certificate" means "Certificate" as defined by the WREGIS Operating Rules.

1.26 "WREGIS Operating Rules" means the operating rules and requirements adopted by WREGIS, including the TOU.

1.27 General Rules of Interpretation. Unless otherwise required by the context in which any term appears, (a) the singular includes the plural and vice versa; (b) references to "Articles," "Sections," "Schedules," "Annexes," "Appendices" or "Exhibits" are to articles, sections, schedules, annexes, appendices or exhibits hereof; (c) all references to a particular entity or an electricity market price index include a reference to such entity's or index's successors; (d) "herein," "hereof" and "hereunder" refer to this Agreement as a whole; (e) all accounting terms not specifically defined herein shall be construed in accordance with generally

accepted accounting principles consistently applied; (f) the masculine includes the feminine and neuter and vice versa; (g) "including" means "including, without limitation" or "including, but not limited to"; (h) all references to a particular law or statute mean that law or statute as amended from time to time; and (i) the word "or" is not necessarily exclusive.

1.28 Interpretation with FERC Orders. Each Party conducts and shall conduct its operations in a manner intended to comply with FERC Order No. 717, Standards of Conduct for Transmission Providers, requiring the separation of its transmission and merchant functions. Moreover, the Parties acknowledge that each of Transmission Provider's and Interconnection Provider's transmission function offers transmission service on its system in a manner intended to comply with FERC policies and requirements relating to the provision of open-access transmission service. Counterparty agrees to conduct itself and operate the Facility in accordance with all Requirements of Law, all requirements of all applicable Electric System Authorities, and all requirements of the Interconnection Agreement.

1.28.1 Counterparty agrees to enter into the Generation Interconnection Agreement with the Interconnection Provider. The Generation Interconnection Agreement shall be a separate and free standing contract and the terms hereof are not binding upon the Interconnection Provider or Transmission Provider, although both are express third party beneficiaries hereof.

1.28.2 Notwithstanding any other provision in this Agreement, nothing in the Generation Interconnection Agreement, nor any other agreement between Counterparty on the one hand and Transmission Provider or Interconnection Provider on the other hand, nor any alleged event of default thereunder, shall alter or modify the Parties' rights, duties, and obligation hereunder. Likewise, nothing herein or connected with the performance by PacifiCorp hereof shall affect or impair the rights of Interconnection Provider or Transmission Provider, under the Interconnection Agreement or otherwise. This Agreement shall not be construed to create any rights between Counterparty and the Interconnection Provider or between Counterparty and the Transmission Provider.

1.28.3 Counterparty expressly recognizes that, for purposes hereof, the Interconnection Provider and Transmission Provider each shall be deemed to be a separate entity and separate contracting party from PacifiCorp whether or not the Generation Interconnection Agreement is entered into with Interconnection Provider or an affiliate thereof. Counterparty acknowledges that PacifiCorp, acting in its merchant capacity function as purchaser hereunder, has no responsibility for or control over Interconnection Provider or Transmission Provider, and is not liable for any breach of agreement or duty by Interconnection Provider or Transmission Provider. Nothing in this Agreement shall operate to diminish, nor shall this Agreement extend to, Interconnection Provider or Transmission Provider's use, retention, or disclosure of Counterparty or Facility information (including information within the scope of this Agreement) in connection with PacifiCorp operating in its transmission function, including its carrying out of its obligations and business practices as a Balancing Authority or activities undertaken pursuant to the Tariff.

II. Term and Termination.

2.1 This Agreement shall be effective upon execution by the Parties and shall continue in effect until such time as either Party, upon providing 60 days written notice to the other Party, chooses to terminate. PacifiCorp may initiate any regulatory proceedings it deems appropriate to terminate this Agreement prior to the effectiveness of such termination. Notwithstanding the foregoing, (a) Counterparty may terminate this Agreement upon an event of default by PacifiCorp if PacifiCorp does not cure such event of default within 10 days of written notice; (b) PacifiCorp may terminate this Agreement upon an event of default by Counterparty if Counterparty does not cure such event of default within 10 days of written notice, (c) PacifiCorp may terminate this Agreement if the Facility fails to meet the requirements of Section 3.1 hereof and such failure is not cured within 30 days, and (d) Either Party may terminate this Agreement immediately upon notice to the other if Counterparty or the Facility fail to comply with Section 1.28. This Agreement may also be terminated as otherwise set forth herein.

III. ORE Services.

3.1 ORE Services. PacifiCorp will, on the terms set forth herein, serve as a ORE for the Facility so long as the Facility meets the definition of Renewable, is within the metered boundaries of both PacifiCorp's Balancing Authority and is equipped with either: (1) Transmission Provider or Interconnection Provider (as applicable) owned and operated meters; or (2) meters that meet the Interconnection Provider's requirements and (3) meet all applicable WREGIS requirements.

3.2 Compensation to PacifiCorp. In exchange for the services performed by PacifiCorp hereunder, Counterparty shall pay PacifiCorp as follows: Counterparty shall pay PacifiCorp a one-time initial setup fee of \$280, which shall be due upon execution of this Agreement. The Counterparty shall pay PacifiCorp a monthly reporting fee of \$50 per generating unit for which PacifiCorp reports output to WREGIS, provided that PacifiCorp may, in its discretion, assess and bill for all fees due hereunder on an annual, rather than monthly, basis. Other than the initial setup fee, which shall be due in advance, all other fees due hereunder shall be due within ten days of PacifiCorp's issuance of an invoice for such fees. PacifiCorp will review costs associated with this service on an annual basis, and may make necessary adjustments to the monthly reporting fee charged herein. Any change in the monthly reporting fee will become effective only after a minimum thirty (30) days prior written notice to Counterparty. In the event WREGIS, WECC, or any other entity with the ability or jurisdiction to modify the ORE reporting process requires a change that materially increases the costs to PacifiCorp of providing ORE services, PacifiCorp may pass those costs to the Counterparty by increasing the monthly reporting fee. PacifiCorp will use best efforts to provide Counterparty with prior notice before billing Counterparty for such increased costs. The fees set forth herein relate to PacifiCorp serving as a ORE for Counterparty pursuant to the terms of this Agreement. The necessary metering is a prerequisite for this service and is not covered in the fees described above.

3.3 Points of Metering. The Points of Metering that PacifiCorp will use are set forth in Exhibit A. Counterparty certifies that all Points of Metering listed in Exhibit A measure data only from Facility that meet the definition of Renewable. Counterparty shall notify

PacifiCorp at least thirty (30) Business Days prior to making any proposed material changes to the Points of Metering. Following such notification, the Parties will decide whether such changes are mutually acceptable. If such changes are not acceptable to PacifiCorp, PacifiCorp may terminate this Agreement.

3.4 Expenses. Except as otherwise provided in the Interconnection Agreement (and in such case, only vis-à-vis Interconnection Provider), Counterparty shall bear all costs and expenses, including those incurred by PacifiCorp, relating to all metering or other equipment installed to accommodate Counterparty's Facility.

3.5 Reporting. Counterparty hereby grants to PacifiCorp sole and exclusive permission and authority to report Data and Output to WREGIS and warrants and represents that neither Counterparty nor any other person or entity acting on behalf of Counterparty has granted, or will hereafter grant during the term hereof any similar data reporting authority or permission to any other QRE or WREGIS Account Holder or to any other party or Agent for use in WREGIS, or any other energy tracking system, for the Facility. As a precondition for PacifiCorp to be able to perform hereunder, Counterparty shall submit Counterparty's Output data to PacifiCorp by allowing PacifiCorp to collect such data, at the Points of Metering, and report such data in the manner set forth herein.

3.5.1 Monthly Generation Extract File. Once a month PacifiCorp shall submit a Monthly Generation Extract File to WREGIS on Counterparty's behalf, which will conform to the characteristics and data requirements set forth in the WREGIS Interface Control Document.

3.5.2 Reporting Cycle. PacifiCorp shall submit the Monthly Generation Extract File to WREGIS no sooner than the last business day of each month for data collected during the previous month, or previous portion of month. PacifiCorp shall submit such data no later than the end of the calendar month following the end date of the output being reported.

3.5.3 Verification. Should PacifiCorp choose at its option to operate and make available a Metering External Webpage, PacifiCorp may in its reasonably exercised discretion grant Counterparty access for Counterparty to verify such information as prescribed by PacifiCorp from time to time, and to timely notify PacifiCorp in writing of any errors Counterparty detects.

3.5.4 Adjustments. After PacifiCorp submits the Monthly Generation Extract File to WREGIS, any information contained in the Monthly Generation Extract File shall be final for purposes of WREGIS reporting, subject only to the adjustment procedures set forth in the WREGIS Operating Rules, which shall be Counterparty's responsibility to implement if necessary.

3.6 Obligations of Counterparty. Counterparty shall report and provide to PacifiCorp accurate and complete generation Data and Output information for the Facility. Counterparty shall send the Data and other Output Information in a format and in compliance with any protocols which PacifiCorp may specify to Counterparty. Counterparty has a continuing duty to immediately notify PacifiCorp, if and when any generation Data or Output information has been sent in error or ceases to be truthful, accurate, or complete and to supply

the corrected data as soon as practical, but not later than five (5) Business Days from the date Counterparty discovers that discrepancy in the Data or Output information.

3.7 WREGIS Fees. Counterparty is solely responsible for the payment directly to WREGIS of any and all WREGIS fees and costs that are required to register Counterparty's Facility and, to the extent the Generator Owner is a WREGIS Account Holder, Counterparty is responsible for the payment directly to WREGIS of all other WREGIS fees incident to the reporting of Generator Data and Output to WREGIS. Counterparty acknowledges and agrees that PacifiCorp shall have no obligation to advance or make payment of WREGIS fees or costs on Counterparty's behalf. Upon request by PacifiCorp made if PacifiCorp has received such a request from WREGIS or any regulator or third party, Counterparty shall provide PacifiCorp with evidence of payment of WREGIS fees and costs; failure to provide such information to PacifiCorp, upon request, shall constitute an event of default under this Agreement.

3.8 WREGIS Accounts. Counterparty will be solely responsible to make arrangements and registrations and for entering into any such agreements that are necessary to establish transfer of Certificates directly to proper Accounts or Subaccounts of Counterparty. Counterparty agrees that such arrangements shall preclude the need for PacifiCorp to act as custodian of such Certificates or to be responsible in any way to hold such Certificates in any Account or Subaccount of PacifiCorp or bear any responsibility, possession, obligation, or risk of loss with respect to Certificates created, held, or owned, with respect to the Facility. Counterparty acknowledges that, pursuant to section 11 of the WREGIS TOU, any generation data that PacifiCorp, acting as a ORE, provides to WREGIS shall reside in WREGIS and Counterparty will have no control over such data's use other than that provided for under the WREGIS TOU.

3.9 Obligations of PacifiCorp. PacifiCorp shall specify for Counterparty the protocols, reporting frequency, data file formats, and communication protocols for reporting generating Data, or Output, as necessary. PacifiCorp shall timely report to WREGIS Counterparty Data and/or Output information as specified in the most current WREGIS Interface Control Document (ICD). PacifiCorp shall not use or disclose Counterparty generation Data for any other purpose than reporting the Data to WREGIS, except as may be required by law, the Public Utility Commission of Oregon, any other state, federal, municipal or other regulator or governmental authority with jurisdiction over PacifiCorp or any of its assets, or a court of competent jurisdiction or as required under the terms of an existing agreement between the Parties. PacifiCorp shall not use Generator Owner generation Data for any other purpose. Notwithstanding the foregoing, PacifiCorp shall not be responsible for handling, account administration, transfer, evidence of, or any determination of Counterparty Certificate ownership or any other obligations for Certificates of Counterparty with regard to Certificates; and Counterparty shall bear all responsibility for such handling, account administration, evidence of, or any determination of Counterparty Certificate ownership and all other obligations pertaining to creation and ownership of such Certificates.

3.10 Measurement.

3.10.1 Meter Data. Counterparty authorizes PacifiCorp's metering services organization to provide Counterparty's meter data directly to WREGIS in the form of the Monthly Generation Extract File. Counterparty authorizes PacifiCorp to gather data from the Points of Metering listed in Exhibit A. All such data is considered data which Counterparty has created and submitted to PacifiCorp, notwithstanding that PacifiCorp, rather than Counterparty will gather it.

3.10.2 Wholesale Generation Also Serving On-Site Loads. If Counterparty has any Wholesale Generation Also Serving On-Site Loads (as defined in Article One above), such Facility will need to have the on-site load generation metered (and registered) separately from the generation that is supplied to the grid, in accordance with the WREGIS Operating Rules. Otherwise, PacifiCorp will not report any data from such Facility. If such Facility exist, they must be specified in Exhibit A.

3.10.3 Estimates. When meter readings are not available due to meter hardware failure or data that is determined to be invalid due to meter malfunction or calibration or configuration error, to the extent deemed by PacifiCorp to be appropriate and permitted pursuant to WREGIS TOU, PacifiCorp will, if possible, rely on readings from redundant meters whether such meters are PacifiCorp owned or not. If readings from redundant meters are not possible, PacifiCorp will estimate and report meter data according to PacifiCorp's Settlement Estimation Procedures.

3.10.4 Responsibility. Counterparty is solely responsible for the data created and submitted to PacifiCorp, acting as a ORE, to forward to WREGIS.

3.11 Regulatory Requirements. PacifiCorp may release information provided by Counterparty hereunder, or gathered by PacifiCorp in connection herewith, to comply with any regulatory requirements applicable to PacifiCorp or if requested by a PacifiCorp regulator or if required by any other federal law or court order. Counterparty waives all applicable provisions of the Tariff which require PacifiCorp to hold confidential information with respect to the Generator Owner and the Facility, to the extent necessary for PacifiCorp to report, as a ORE, generation Data and Output regarding the Generation Unit(s) and to carry out PacifiCorp's obligations under this Agreement. This provision shall survive any termination of this Agreement.

3.12 Grant by Counterparty. Counterparty hereby grants to, permits, and authorizes PacifiCorp the following:

3.12.1 PacifiCorp is hereby authorized to communicate and transact with WREGIS as Counterparty's sole and exclusive reporting source of generation data for the Facility, and WREGIS is hereby authorized to communicate and transact directly with PacifiCorp regarding any generation data issues for the Facility. PacifiCorp is hereby authorized to act on behalf of Counterparty, but only to the extent that PacifiCorp has lawful, contractual access to WREGIS.

3.12.2 PacifiCorp is hereby authorized to provide WREGIS with all generation data for the Facility that WREGIS requires, including, but not limited to, data required for preparation of required reports and billing.

3.12.3 PacifiCorp is authorized to undertake all actions which are reasonable and necessary to carry out the obligations set forth in the subsections above.

3.12.4 Counterparty retains all other rights and responsibilities and all other obligations to WREGIS.

IV. Indemnity and Hold Harmless by Counterparty.

4.1 Indemnity. To the extent permitted by Requirements of Law, Counterparty hereby indemnifies and agrees to hold PacifiCorp, its officers, employees, agents, or representatives, harmless for any and all liability that is in any way associated with PacifiCorp's performance hereunder. This includes liability arising from: the data contained in the Monthly Generation Extract File, or any other financial injury, or damage to persons or property. Without limiting the generality of the foregoing:

4.1.1 Waiver of Causes of Action and Claims for Damages. Counterparty hereby waives any and all causes of action arising under or in respect to this Agreement, whether in contract, tort or any other legal or equitable theory (including strict liability) against PacifiCorp. In no event shall PacifiCorp be liable to Counterparty its board of directors, employees, agents, or representatives for any demands, direct costs, lost or prospective profits or any other losses, liabilities or expenses, whether special, punitive, exemplary, consequential, incidental, or indirect in nature, that are in any way associated with PacifiCorp's performance of the QRE function or otherwise under or in respect of this Agreement.

4.2 Indemnity by Counterparty. Counterparty shall release, indemnify and hold harmless PacifiCorp, its Affiliates, and each of its and their respective directors, officers, employees, agents, and representatives (collectively, the "PacifiCorp Indemnities") against and from any and all losses, fines, penalties, claims, demands, damages, liabilities, actions or suits of any nature whatsoever (including legal costs and attorney's fees, both at trial and on appeal, whether or not suit is brought) (collectively, "Liabilities") resulting from, or arising out of, or in any way connected with, the performance by Counterparty of its obligations hereunder, or relating to the Facility, for or on account of (i) injury, bodily or otherwise, to, or death of, or (ii) for damage to, or destruction or economic loss of property of, any person or entity, excepting only to the extent such Liabilities as may be caused by the gross negligence or willful misconduct of any person or entity within the PacifiCorp Indemnities.

4.3 NOTWITHSTANDING ANY OTHER PROVISION OF THIS AGREEMENT, COUNTERPARTY ASSUMES FULL RESPONSIBILITY AND RISK OF LOSS RESULTING FROM (1) THE FAILURE TO SEND DATA IN A FORMAT SPECIFIED BY PACIFICORP, (2) THE FAILURE TO USE PROTOCOLS SPECIFIED BY PACIFICORP OR (3) THE SENDING OF ERRONEOUS, UNTRUTHFUL, INACCURATE, AND/OR INCOMPLETE GENERATING DATA TO PACIFICORP OR THE SENDING OF ERRONEOUS, UNTRUTHFUL, INACCURATE, AND/OR INCOMPLETE DATA BY

PACIFICORP TO WREGIS. IN NO EVENT SHALL PACIFICORP BE LIABLE FOR ANY CONSEQUENTIAL, INCIDENTAL, SPECIAL, EXEMPLARY, OR OTHER INDIRECT LOSS OR DAMAGES RESULTING FROM ANY BREACH OF THIS AGREEMENT, WHETHER CAUSED BY THE NEGLIGENCE OR INTENTIONAL ACTIONS OF PACIFICORP (AND/OR ITS CONTRACTORS, AGENTS, AND EMPLOYEES), REGARDLESS OF WHETHER SUCH CLAIM FOR DAMAGES IS BASED IN CONTRACT, TORT, STRICT LIABILITY OR OTHERWISE. IN NO EVENT SHALL PACIFICORP BE LIABLE FOR ANY LOSS OR HARM SUFFERED BY COUNTERPARTY OR ANY THIRD PARTY DUE TO ANY ACTION OR INACTION BY PACIFICORP TAKEN HEREUNDER THAT CAUSES A FACILITY TO LOSE ANY CREDENTIALS, REGISTRATION OR QUALIFICATION UNDER THE RENEWABLE PORTFOLIO STANDARD OR SIMILAR LAW OF ANY STATE OR OTHER JURISDICTION.

4.4 PACIFICORP WILL NOT BE RESPONSIBLE FOR ANY DAMAGES RESULTING FROM ECONOMIC LOSS, LOSS OF USE, LOSS OF DATA, LOSS OF BUSINESS, LOSS OF PROFIT, LOSS OF PRODUCTION TAX CREDITS, LOSS OF SAVINGS OR REVENUE, LOSS OF GOODWILL, THE CLAIMS OF THIRD PARTIES (INCLUDING CUSTOMERS AND SHAREHOLDERS OR OTHER EQUITY OWNERS), PERSONAL INJURIES OR PROPERTY DAMAGES SUSTAINED BY THE COUNTERPARTY OR ANY THIRD PARTIES, EVEN IF PACIFICORP HAS BEEN NOTIFIED BY COUNTERPARTY (OR BY ANY THIRD PARTY) OF SUCH DAMAGES.

4.5 PACIFICORP DISCLAIMS ANY LIABILITY FOR AND COUNTERPARTY WAIVES ANY CLAIM FOR LOSS OR DAMAGE RESULTING FROM ERRORS, OMISSIONS, OR OTHER INACCURACIES IN ANY PART OF WREGIS OR THE REPORTS, CERTIFICATES OR OTHER INFORMATION COMPILED OR PRODUCED BY AND FROM OR INPUT INTO WREGIS USING COUNTERPARTY SUPPLIED GENERATION DATA, WHETHER OR NOT SUCH ERRORS, OMISSIONS OR INACCURACIES ARE DUE TO ERRONEOUS, UNTRUTHFUL, INCOMPLETE, OR INACCURATE INFORMATION INPUT BY PACIFICORP INTO WREGIS.

4.6 COUNTERPARTY HEREBY RELEASES PACIFICORP AND ANY OF ITS CONTRACTORS, AGENTS, AND EMPLOYEES FROM ANY AND ALL LIABILITY WITH RESPECT TO DAMAGES OR INJURIES INCURRED BY GENERATOR OWNER AS RELATES TO THE FOREGOING, EXCLUDING ANY ARISING AS A RESULT OF TORTIOUS AND INTENTIONALLY KNOWING OR RECKLESS CONDUCT BY PACIFICORP.

4.7 COUNTERPARTY ACKNOWLEDGES AND AGREES THAT, IN THE EVENT OF BREACH OF THIS CONTRACT OR ANY OTHER ACTION RESULTING IN LOSS OR POTENTIAL LOSS OR DAMAGE TO COUNTERPARTY, THE SOLE RECOURSE TO GENERATOR/OWNER IS TERMINATION OF THIS AGREEMENT.

4.8 Counterparty agrees to defend, indemnify, and hold harmless PacificCorp and its directors, officers, employees, and agents from and against any and all claims (including third-party claims); causes of action, whether in contract, tort, or any other legal theory (including strict liability); demands; damages; costs; liabilities.; losses and expenses (including

reasonable attorney's fees and court costs) of any nature whatsoever, whenever arising, arising out of, resulting from, attributable to, or related to Counterparty generation Data our Output for: any inaccuracy, error, or delay in or omission of (i) any Data, information, or service, or (ii) the transmission or delivery of any Data, information, or service; any interruption of any such Data, Output, information, or service (whether or not caused by PacifiCorp); or any financial, business, commercial, or other judgment, decision, act, or omission made by any person or entity based upon or related to the information.

4.9 Interconnection. Counterparty shall have no claims hereunder against PacifiCorp, acting in its merchant function capacity, with respect to any requirements imposed by or damages caused by (or allegedly caused by) acts or omissions of the Transmission Provider or Interconnection Provider, in connection with the Generation Interconnection Agreement or otherwise. Counterparty shall defend, indemnify and hold PacifiCorp harmless against any liability arising due to Counterparty's performance or failure to perform under the Generation Interconnection Agreement. Counterparty's failure to obtain, or perform under, the Generation Interconnection Agreement, or its other contracts and obligations to, Transmission Provider or Interconnection Provider is not a Force Majeure.

4.10 THIS ARTICLE SHALL SURVIVE ANY TERMINATION OF THIS AGREEMENT, WHETHER SUCH TERMINATION IS BY PACIFICORP OR COUNTERPARTY, AND WHETHER OR NOT SUCH TERMINATION IS ON ACCOUNT OF A DEFAULT.

V. Further Counterparty Obligations.

5.1 No Sale. Nothing herein constitutes a sale or purchase of energy or renewable energy certificates to or by PacifiCorp.

5.2 PTCs. Counterparty shall bear all risks, financial and otherwise throughout the Term, associated with Counterparty's or the Facility's eligibility to receive production tax credits ("PTCs") or qualify for accelerated depreciation for Counterparty's accounting, reporting or tax purposes.

5.3 Further Assurances. At PacifiCorp's request, the Parties shall execute such documents and instruments as may be reasonably required to effect the essential intent and purposes hereof.

5.4 Station Service. Counterparty shall be responsible for arranging and obtaining, at its sole risk and expense, any station service required by the Facility.

5.5 Costs of Ownership and Operation. Without limiting the generality of any other provision hereof, Counterparty shall be solely responsible for paying when due (a) all costs of owning and operating the Facility in compliance with existing and future Requirements of Law and the terms and conditions hereof, and (b) all taxes and charges (however characterized) now existing or hereinafter imposed on or with respect to the Facility, its operation, or on or with respect to emissions or other environmental impacts of the Facility, including any such tax or charge (however characterized) to the extent payable by a generator of such energy or renewable energy certificates.

5.6 Coordination with System. Counterparty shall be responsible for the coordination and synchronization of the Facility and the Interconnection Facilities with the System, and shall be solely responsible for (and shall defend and hold PacifiCorp harmless against) any damage that may occur as a direct result of Counterparty's breach of the Generation Interconnection Agreement.

5.7 Data Request. Counterparty shall, promptly upon written request from PacifiCorp, provide PacifiCorp with data reasonably required for information requests from any Governmental Authorities, state or federal agency intervenor or any other party achieving intervenor status in any PacifiCorp rate proceeding or other proceeding before any governmental authority. Counterparty shall use best efforts to provide this information to PacifiCorp sufficiently in advance to enable PacifiCorp to review it and meet any submission deadlines.

5.8 Additional Information. Counterparty shall provide to PacifiCorp such other information respecting Counterparty or the Facility as PacifiCorp may, from time to time, reasonably request.

5.9 No Dedication. Nothing herein shall be construed to create any duty to, any standard of care with reference to, or any liability to any person not a Party hereto. No undertaking by one Party to the other under any provision hereof shall constitute the dedication of PacifiCorp's facilities or any portion thereof to Counterparty or to the public, nor affect the status of PacifiCorp as an independent public utility corporation or Counterparty as an independent individual or entity.

5.10 Required Policies and Coverages. Without limiting any liabilities or any other obligations of Counterparty hereunder, Counterparty shall secure and continuously carry with an insurance company or companies rated not lower than "B+" by the A.M. Best Company the insurance coverage specified in the Generation Interconnection Agreement.

VI. Representations and Warranties.

6.1 Mutual Representations and Warranties. Each Party represents and warrants to the other that: (i) it is duly organized and validly existing under the laws of the jurisdiction of its incorporation or organization; (ii) it has the corporate, governmental and other legal capacity and authority to enter hereinto and to perform its obligations hereunder; (iii) such execution and performance do not violate or conflict with any law, order or agreement applicable to it; (iv) it has all governmental and other authorizations that are required to have been obtained or submitted by it with respect hereto, and they are in full force and effect; (v) its obligations hereunder are valid, binding and enforceable in accordance with their terms (subject to bankruptcy or similar laws affecting creditors' rights generally); and (vi) no Event of Default, or event which with notice and/or lapse of time would constitute such an Event of Default, has occurred and is continuing or would occur as a result of its entering into or performing its obligations hereunder.

6.2 Representations and Warranties of Counterparty. Counterparty hereby represents and warrants to PacifiCorp: (i) it is not relying upon any representations of PacifiCorp other than those expressly set forth herein; (ii) it has entered hereinto with a full understanding of

the material terms and risks of the same, and it is capable of assuming those risks; (iii) it has made its trading and investment decisions based upon its own judgment and any advice from such advisors as it has deemed necessary and not in reliance upon any view expressed by PacifiCorp; (iv) it has not received from PacifiCorp any assurances or promises regarding any financial results or benefits hereunder; (v) service hereunder is not a utility service within the meaning of Section 466 of the United States Bankruptcy Code; and (vi) Counterparty holds legal title to the Facility or otherwise holds the legal right to cause the Facility to enter into this Agreement.

VII. Financial Responsibility.

7.1 Adequate Assurances. Without limiting PacifiCorp's rights under Article VIII hereof, if Counterparty has failed to make a timely payment hereunder, and PacifiCorp has reasonable grounds for insecurity regarding the performance of any obligation of Counterparty hereunder (whether or not then due), PacifiCorp may demand Adequate Assurances of Performance. "Adequate Assurances of Performance" means sufficient security in the form, amount, by an issuer or guarantor, and for the term reasonably acceptable to PacifiCorp, including, but not limited to, cash, a standby irrevocable letter of credit, a prepayment, a security interest in government securities, an asset or a performance bond or guaranty. Such Adequate Assurances of Performance shall be provided within three business days after a written demand is made by PacifiCorp.

VIII. Events of Default; Remedies.

8.1 Event of Default. "Event of Default" means, with respect to a Party (the "Defaulting Party"):

8.1.1 the failure to render when due any payment or performance hereunder, if such failure is not remedied within five days after written notice;

8.1.2 the failure to timely provide adequate assurances required pursuant to Article VII hereof;

8.1.3 any such Party's representation or warranty proves to have been incorrect or misleading in any material respect when made;

8.1.4 the failure to perform any other covenant set forth herein if such failure is not remedied within five days after written notice;

8.1.5 its bankruptcy, if adequate assurances acceptable to PacifiCorp and approved by the Bankruptcy Court are not provided;

8.1.6 the expiration or termination of any credit support of Counterparty's obligations hereunder (other than in accordance with its terms) prior to the satisfaction of all obligations of Counterparty without the written consent of PacifiCorp; or

8.1.7 In the case of Counterparty:

8.1.7.1 Counterparty fails to report generation Data or Output information to PacifiCorp for the Facility or Counterparty fails to send the data in a format and use the protocols specified by PacifiCorp as determined by PacifiCorp to be required to meet the requirements of the WREGIS Operating Rules;

8.1.7.2 Counterparty is delinquent in payment to WREGIS of any WREGIS fees for registration or maintenance of Accounts or Subaccounts, which payment impairs the ability of PacifiCorp to report Generator Data, Output, or other information to WREGIS regarding the Facility, which delinquency continues for a period of thirty (30) days;

8.1.7.3 Counterparty fails to comply with a request by PacifiCorp to provide evidence of payment of WREGIS fees pertaining to the Facility; or

8.1.7.4 Counterparty knowingly or intentionally falsifies or misrepresents any Data, Output information, or other information required by WREGIS.

8.2 Remedies Upon Event of Default. In the Event of Default by a Party and for so long as the Event of Default is continuing, the non-defaulting Party (the "Performing Party") shall have the right to do any or all of the following: (1) upon two business days' written notice to the Defaulting Party, terminate this Agreement; (2) withhold any payments or performance due in respect of this Agreement; and (3) exercise such other remedies as may be available at law or in equity or as otherwise provided for herein, to the extent such remedies have not been otherwise waived or limited pursuant to the terms hereof.

8.3 Setoff. If an Event of Default occurs, the Performing Party may, at its election, set off any or all amounts which the Defaulting Party owes to it or any Affiliate of the Performing Party (whether under this Agreement or otherwise and whether or not then due) against any or all amounts which it or any Affiliate of the Performing Party owes to the Defaulting Party (whether under this Agreement or otherwise and whether or not then due).

8.4 Payment of Damages. Any amounts due on account of default shall be paid by the close of business on the next business day following the Defaulting Party's receipt of the Performing Party's written termination notice setting forth the termination payment due.

8.5 Limitation of Liability. THE EXPRESS REMEDIES AND MEASURES OF DAMAGES PROVIDED HEREIN SATISFY THE ESSENTIAL PURPOSES HEREOF. FOR BREACH OF ANY PROVISION FOR WHICH AN EXPRESS REMEDY OR MEASURE OF DAMAGE IS PROVIDED, SUCH REMEDY OR MEASURE SHALL BE THE SOLE AND EXCLUSIVE REMEDY THEREFOR. LIABILITY THAT HAS NOT BEEN OTHERWISE EXCLUDED PURSUANT TO THE TERMS HEREOF SHALL BE LIMITED TO DIRECT ACTUAL DAMAGES ONLY AS THE SOLE AND EXCLUSIVE REMEDY. EXCEPT AS OTHERWISE SPECIFICALLY SET FORTH HEREIN, NO PARTY SHALL BE REQUIRED TO PAY OR BE LIABLE FOR SPECIAL, CONSEQUENTIAL, INCIDENTAL, PUNITIVE, EXEMPLARY, OR INDIRECT DAMAGES, LOST PROFIT OR BUSINESS INTERRUPTION DAMAGES, BY STATUTE, IN TORT, CONTRACT OR OTHERWISE.

8.6 Survival. This Article survives the expiration or termination hereof.

IX. Force Majeure.

9.1 Except with regard to a Party's obligation to make payments hereunder, in the event either Party hereto is rendered unable, wholly or in part, by Force Majeure to carry out its obligations with respect hereto, then upon such Party's (the "Claiming Party") giving notice and full particulars of such Force Majeure as soon as reasonably possible after the occurrence of the cause relied upon, such notice to be confirmed in writing or by facsimile to the other Party, then the obligations of the Claiming Party shall, to the extent they are affected by such Force Majeure, be suspended during the continuance of said inability, but for no longer period, and the Claiming Party shall not be liable to the other Party for, or on account of, any loss, damage, injury or expense resulting from, or arising out of such event of Force Majeure. The Party receiving such notice of Force Majeure shall have until the end of the Business Day following such receipt to notify the Claiming Party that it objects to or disputes the existence of an event of Force Majeure. "Force Majeure" means an event or circumstance which prevents one Party from performing its obligations hereunder, which event or circumstance was not anticipated, which is not within the reasonable control of, or the result of the negligence of, the Claiming Party, and which, by the exercise of due diligence, the Claiming Party is unable to overcome or avoid or cause to be avoided, Counterparty's failure to obtain, or perform under, the Generation Interconnection Agreement, or its other contracts and obligations to, Transmission Provider or Interconnection Provider is not a Force Majeure.

9.2 Force Majeure Does Not Affect Other Obligations. No obligations of either Party that arose before the Force Majeure causing the suspension of performance or that arise after the cessation of the Force Majeure shall be excused by the Force Majeure.

9.3 Strikes. Notwithstanding any other provision hereof, neither Party shall be required to settle any strike, walkout, lockout or other labor dispute on terms which, in the sole judgment of the Party involved in the dispute, are contrary to the Party's best interests.

X. Miscellaneous.

10.1 CHOICE OF LAW. This Agreement shall be interpreted and enforced in accordance with the laws of the state of Oregon, excluding any choice of law rules that may direct the application of the laws of another jurisdiction.

10.2 Restriction on Assignments. Neither Party may assign this Agreement or any of its rights or obligations hereunder without the prior written consent of the other Party, which consent shall not be unreasonably withheld. Any purported assignment in violation hereof shall be void ab initio. This Agreement inures to the benefit of and is binding upon the Parties and their respective successors and permitted assigns.

10.3 Notices. All notices, requests, statements or payments shall be made to the addresses set out on the Notices Exhibit. Notices required to be in writing shall be delivered by letter, facsimile or other documentary form. Notice by facsimile or hand delivery shall be deemed to have been given when received or hand delivered. Notice by overnight mail or courier shall be deemed to have been given on the date and time evidenced by the delivery

receipt. The Parties may change any of the persons to whom notices are addressed, or their addresses, by providing written notice in accordance with this Section.

10.4 Entire Agreement; Counterparts. This Agreement constitutes the entire agreement between the Parties with respect to its subject matter. This Agreement may not be amended, changed, modified, or altered unless such amendment, change, modification, or alteration is in writing and signed by both Parties. This Agreement may be executed in counterparts, including by telefacsimile transmission, each of which is an original and all of which taken together constitute one and the same original instrument. This Agreement completely and fully supersedes all other prior understandings or agreements, both written and oral, between the Parties relating to the subject matter hereof. If any provision of this Agreement is determined to be invalid, void or unenforceable by any court of competent jurisdiction, such determination shall not invalidate, void, or make unenforceable any other provision, agreement or covenant of this Agreement, provided the basic purposes of this Agreement and the benefits to the Parties are not substantially impaired.

10.5 No Waiver. Waiver by a Party of any default by the other Party shall not be construed as a waiver of any other default, nor shall any delay by a Party in the exercise of any right under this Agreement be considered as a waiver or relinquishment thereof.

10.6 Jurisdiction. Any judicial action arising out of, resulting from or in any way relating to this Agreement shall be brought only in a state or federal court of Multnomah County, Oregon. In the event such judicial proceedings are instituted by either Party, the prevailing Party shall be entitled to award of its costs and attorneys' fees incurred in connection with such proceedings.

10.7 Jury Trial Waiver. THE PARTIES EACH HEREBY IRREVOCABLY WAIVE ALL RIGHT TO TRIAL BY JURY IN ANY ACTION, PROCEEDING OR COUNTERCLAIM ARISING OUT OF OR RELATING HERETO, ANY GREEN TAGS OR THE TRANSACTIONS CONTEMPLATED HEREBY. EACH PARTY FURTHER WAIVES ANY RIGHT TO CONSOLIDATE ANY ACTION IN WHICH A JURY TRIAL HAS BEEN WAIVED WITH ANY OTHER ACTION IN WHICH A JURY TRIAL CANNOT BE OR HAS NOT BEEN WAIVED.

10.8 No Third Party Beneficiaries. With the exception of Transmission Provider and Interconnection Provider, who are express third party beneficiaries hereof, this Agreement confers no rights whatsoever upon any person other than the Parties and shall not create, or be interpreted as creating, any standard of care, duty or liability to any person not a Party hereto.

10.9 Relationship of the Parties. Nothing contained herein shall be construed to create an association, joint venture, trust, or partnership, or impose a trust or partnership covenant, obligation, or liability on or with regard to any one or more of the Parties. Each Party shall be individually responsible for its own covenants, obligations, and liabilities under this Agreement.

IN WITNESS WHEREOF, the Parties have executed this Agreement by their
duly authorized representatives as of the date first above written.

PacifiCorp

(Counterparty)

BY:
NAME:
TITLE:

BY:
NAME:
TITLE:

Exhibit A

Facility and Generation Data to be sent by ORE

For Facility enter the following information:

Facility Name and Address

Resource ID and Meter Number (Device ID) as listed on the Meter Service Agreement for the ISO Metered Entities (MSA/ISOME) Schedule 1

WREGIS ID

Meter Points

BEFORE THE PUBLIC UTILITY COMMISSION
OF OREGON

ONEENERGY, INC.

Cross-Examination Exhibit

*Portland General Electric's Testimony and Exhibits of Robert Macfarlane (PGE /
100), Docket No. UM 1396 (March 16, 2012)*



Portland General Electric Company
121 SW Salmon Street • Portland, Oregon 97204
PortlandGeneral.com

March 16, 2012

Public Utility Commission of Oregon
Attn: Filing Center
550 Capitol Street, N.E., Suite 215
Salem, OR 97301-2551

RE: UM_____ Application for Approval of Renewable and Standard Avoided Costs

Enclosed for filing are an original and five copies of the following Testimony and Exhibits of:

- Robert Macfarlane (PGE / 100)

PGE submits this Application for Approval of Renewable and Standard Avoided Costs pursuant to Commission Order No. 11-505 issued on December 13, 2011. The Commission ordered PGE to file this application and testimony "setting forth proposed rates and tariffs to effectuate the legal and policy decisions made in this order." In addition to the terms and conditions applicable to renewable qualifying facilities (QFs), PGE includes updated terms and conditions applicable to standard QFs in order to align the offerings between these alternative resources.

PGE filed Advice No. 12-02 on February 13, 2012 and accompanying testimony on February 14, 2012. At Staff's request, we are filing this application so that it does not include tariff schedules and is, thus, not an advice filing. PGE understands that our Advice No. 12-02 has not yet been accepted and therefore there is no need for PGE to withdraw the advice filing.

Aside from the use of schedules (201, 202, 211, and 212) which are included as exhibits to testimony rather than tariff sheets, there are no substantive changes in this filing from what was submitted in February.

Should you have any questions or comments regarding this filing, please contact Rob Macfarlane at (503) 464-8954.

UM____ Application for Approval of Renewable and Standard Avoided Costs
Page 2

Please direct all formal correspondence and requests to the following email address
pge.opuc.filing@pqn.com

Sincerely,

A handwritten signature in black ink, appearing to read "R. Dahlgren". The signature is fluid and cursive, with a large initial "R" and a long, sweeping underline.

Randall J. Dahlgren
Director, Regulatory Policy & Affairs

Enclosures

cc: UM 1396 Service List

**BEFORE THE PUBLIC UTILITY COMMISSION
OF THE STATE OF OREGON**

**Renewable Avoided Cost
UM_____**

PORTLAND GENERAL ELECTRIC COMPANY

Direct Testimony and Exhibits of

Robert Macfarlane

March 16, 2012

Renewable Avoided Cost

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I. Introduction and Summary

1 **Q. Please state your name and position.**

2 A. My name is Robert Macfarlane. I am an Analyst in the Pricing and Tariffs Department. My
3 qualifications are listed in Section IV.

4 **Q. What is the purpose of your testimony?**

5 A. This testimony describes the methodology proposed by PGE to establish renewable avoided
6 cost prices consistent with Commission Order No. 11-505. In addition, I provide an update
7 to standard avoided costs so that reasonable comparisons can be made to renewable avoided
8 cost prices.

9 **Q. What is a renewable avoided cost?**

10 A. The renewable avoided cost is based on the requirement that investor-owned utilities meet a
11 portion of customer energy requirements from renewable resources consistent with Oregon's
12 Renewable Portfolio Standard (RPS). In Order No. 11-505, the Commission directed PGE
13 and Pacific Power to file applications with supporting testimony to set forth rates and tariffs
14 consistent with the order. The Qualifying Facility (QF) provides electricity and its
15 environmental attributes, including Renewable Energy Certificates (RECs) from a
16 renewable resource to the utility and receives compensation based upon the cost that would
17 have been incurred by the utility if not for the electricity provided by the QF.

18 **Q. What actions does PGE seek from the Commission?**

19 A. PGE requests an order from the Commission approving:

- 20 1. The renewable avoided cost prices described in this testimony.
21 2. Establishment of new rate Schedules 211 and 212 as described in this testimony.

1 3. An update of standard avoided costs and related language changes in Schedules 201
2 and 202.

3 4. Standard Agreements contained as exhibits to this testimony.

II. Renewable Avoided Costs

a. Renewable Resource Sufficiency and Deficiency Periods

4 **Q. Does the calculation of the renewable avoided costs reflect two distinct periods?**

5 A. Yes. Similar to the traditional avoided cost, two periods exist for the purpose of renewable
6 avoided cost. They are referred to as the renewable resource sufficiency period and the
7 renewable resource deficiency period.

8 **Q. What is the renewable resource sufficiency period?**

9 A. The renewable resource sufficiency period arises in two circumstances. First, a renewable
10 resource sufficiency period applies in the near term period when the utility has a major
11 renewable resource acquisition planned, but is avoidable; the utility has not yet made an
12 irreversible commitment to acquire that resource. Second, if the utility has no renewable
13 resource acquisitions planned, the utility is renewable resource sufficient and there is only a
14 renewable resource sufficiency period.

15 **Q. What is the renewable resource deficiency period?**

16 A. The renewable resource deficiency period begins in the year in which, according to the most
17 recent acknowledged Integrated Resource Plan (IRP), the utility plans to have a major
18 renewable resource on line, provided an irreversible commitment has not been made.

1 **Q. What constitutes an irreversible commitment?**

2 A. The Commission, in Order No. 11-505, determined that an irreversible commitment occurs
3 after the completion of the request for proposal (RFP) process with the execution of
4 contracts or award of a benchmark resource to the utility to build for itself.

5 **Q. What date does PGE use to designate the renewable resource deficiency period?**

6 A. PGE's 2009 IRP indicates a 330-385 MW wind resource is expected to be on line by
7 December 31, 2014. Therefore, the sufficiency period lasts from today through 2014 and
8 the deficiency period begins in 2015.

b. Basis for Renewable Resource Avoided Cost

9 **Q. Can you describe the renewable avoided costs PGE has developed and which types of**
10 **QFs will be eligible for each?**

11 A. Table 1 below shows the standard agreements available and the pricing basis.

Table 1
Standard Renewable PPAs and Pricing Basis

Standard Renewable PPA	Sufficiency Price Basis	Deficiency Price Basis
1 Standard Renewable In-System Non-Variable Power Purchase Agreement	Forward energy prices	IRP wind plant plus integration II
2 Standard Renewable Off-System Non-Variable Power Purchase Agreement	Forward energy prices	IRP wind plant plus integration II
3 Standard Renewable In-System Variable Resource Power Purchase Agreement	Forward energy prices minus integration I	IRP wind plant
4 Standard Renewable Off-System Integrated Variable Resource Power Purchase Agreement	Forward energy prices	IRP wind plant plus integration II

Notes:

IRP wind plant includes capital cost, fixed O&M, and wheeling cost

Integration I = full integration cost (cost for day-ahead uncertainty,
hour-ahead uncertainty, load following, and regulation)

Integration II = partial integration (cost for hour-ahead uncertainty,
load following, and regulation)

1 **Q. What is the starting point for the renewable avoided cost during the period of**
2 **renewable resource sufficiency?**

3 A. Order No. 11-505 page 1 states that during the period of renewable resource sufficiency, the
4 rate will be based on market prices. The electric forward price curve was derived from
5 monthly on- and off-peak market quotes as of December 29, 2011. The 2012 through 2014
6 prices are based on information from broker quotes that PGE's traders observe. The 2012
7 calendar price is used to impute or shape the 2014 price. We also use similar forward price
8 curves in PGE's Net Variable Power Cost Annual Update Tariff (AUT) filing. The curve in
9 the 2012 AUT uses Mid-C on- and off-peak prices for only the test year (e.g. 2012).

f. Renewable Energy Certificates

1 **Q. In the traditional avoided cost, the QF retains any RECs. Who has ownership of RECs**
2 **under the renewable avoided cost?**

3 A. Order No. 11-505 page 1 states that during the period of renewable resource sufficiency the
4 QF retains the RECs. However, during the period of renewable resource deficiency, the QF
5 must transfer all RECs to the purchasing utility. The purchasing utility avoids the resource
6 acquisitions that would otherwise be needed to satisfy Oregon's RPS, as defined in
7 ORS 469A.

8 **Q. How are the RECs tracked?**

A. The QF is responsible to assure RECs are established through Western Renewable Energy
Generation Information System (WREGIS) consistent with OAR 330-160-0020. In
addition, the QF is responsible to ensure RECs are bundled as defined in ORS 469A.005.

g. Standard Renewable Power Purchase Agreements

9 **Q. What Standard Renewable PPAs are available to a renewable QF?**

10 A. There are four Standard Renewable PPAs available under Schedule 211. They are: Standard
11 Renewable In-System Non-Variable Power Purchase Agreement, Standard Renewable Off-
12 System Non-Variable Power Purchase Agreement, Standard Renewable In-System Variable
13 Resource Power Purchase Agreement, and Standard Renewable Off-System Integrated
14 Variable Resource Power Purchase Agreement. The Renewable PPAs are provided as
15 Exhibit 104.

1 **Q. What types of renewable resources are considered variable?**

2 A. The Standard Renewable PPAs applicable to Variable Resources are available only to QFs
3 utilizing wind or solar as the primary motive force.

4 **Q. What pricing is applicable to each PPA?**

5 A. Table 1 referenced previously in this testimony provides the fixed pricing applicable to
6 each PPA.

h. Term of Agreement

7 **Q. What terms are available to a renewable QF?**

A. QFs may choose any term between 1 and 20 years per Commission Order No. 05-584.
However, the fixed price option under Schedule 211 is only available for the first 15 years of
the standard PPAs. The last 5 years of a 20 year PPA is paid at one of the variable options
in Schedule 201.

III. Standard Avoided Costs

8 **Q. Is PGE also updating the standard avoided costs included in Schedule 201?**

9 A. Yes. The avoided costs prices during the sufficiency period should have the same prices as
10 those used for renewable avoided costs. For consistency, PGE is updating the standard
11 avoided costs concurrent with the introduction of renewable avoided costs. Schedule 201
12 relates to the Standard PPA. This allows eligible renewable QFs to sell power to PGE
13 without negotiating terms and conditions. Schedule 201 is included as Exhibit 105.
14 Schedule 202 relates to negotiated PPAs. This allows eligible QFs to sell power to PGE
15 using negotiated price, terms, and conditions. Schedule 202 is included as Exhibit 106.

1 **Q. Are there other changes included in Schedule 201 other than updated avoided cost**
2 **calculations?**

3 A. Yes. PGE added a special condition that allows only one avoided cost PPA per facility
4 along with a provision that energy sales must commence within one year of executing a
5 PPA. Also, PGE added a fixed price option which reflects an adjustment for integration
6 costs associated with in-system variable energy resources.

7 **Q. What is the purpose of the additional special condition?**

8 A. The purpose is to prevent the QF from executing multiple PPAs that cover different time
9 frames. Without this special condition, the QF could attempt to sign up for Schedule 201 for
10 some years and Schedule 211 for other years.

11 **Q. Please discuss the additional fixed pricing option.**

12 A. The adjustment to the fixed pricing option is available to QFs with a variable energy
13 resource located inside PGE's system. For an in-system variable resource, the QF does not
14 provide or pay a third party to provide integration into PGE's balancing authority.

15 **Q. What is the basis of the additional fixed pricing option?**

16 A. Integration is implicit in both forward energy prices used as a basis for avoided costs pricing
17 in the sufficiency period and the CCCT proxy used in the deficiency period. Therefore, no
18 adjustment is necessary for QFs that have an off-system variable resource since they must
19 either use a third party to integrate or self-integrate that energy into PGE's balancing
20 authority on an hourly basis and for QFs with a base load (firm) resource. However,
21 integration costs are subtracted from the prices for QFs that have an in-system variable
22 resource since the QF does not provide or pay a third party to provide integration into PGE's

1 balancing authority on an hourly basis. The prices with the integration costs subtracted form
2 the basis of the additional fixed pricing option.

3 **Q. Has the start of the resource deficiency period changed?**

4 A. No. The previously filed avoided costs were based on the 2009 IRP and this avoided cost
5 filing is also based on the 2009 IRP.

6 **Q. What items have been updated from the current avoided costs?**

7 A. The calculations in this filing include updates to forward energy prices, gas prices, and
8 capital costs. Capital costs were updated in the 2011 IRP Update to the acknowledged
9 2009 IRP, filed November 23, 2011. The work papers provided with PGE Advice Filing
10 No. 12-02 provide an explanation of the avoided cost methodology.

11 **Q. What Standard PPAs are available to a QF?**

12 A. There are four Standard PPAs available under Schedule 201. They are: Standard In-System
13 Non-Variable Power Purchase Agreement, Standard Off- System Non-Variable Power
14 Purchase Agreement, Standard In-System Variable Resource Power Purchase Agreement,
15 and Standard Off-System Integrated Variable Resource Power Purchase Agreement. The
16 Standard PPAs are provided as Exhibit 107.

IV. Qualifications of Witness

1 **Q. Mr. Macfarlane, please state your educational background and qualifications.**

2 A. I received a Bachelor of Arts business degree from Portland State University with a focus in
3 finance.

4 Since joining PGE in 2008, I have worked as an analyst in the Rates and Regulatory
5 Affairs Department. My duties at PGE have focused on pricing and regulatory issues.

6 From 2004 to 2008, I was a consultant with Bates Private Capital in Lake Oswego, OR
7 where I developed, prepared, and reviewed financial analyses used in investor vs. broker
8 litigation.

9 **Q. Does this complete your testimony?**

10 A. Yes.

List of Exhibits

<u>PGE Exhibit</u>	<u>Description</u>
101	Wind Integration Study Phase II
102	Schedule 211 Qualifying Facility 10 MW or Less Renewable Avoided Cost Power Purchase Information
103	Schedule 212 Qualifying Facilities Greater Than 10 MW Renewable Avoided Cost Power Purchase Information
104	Renewable Power Purchase Agreements
105	Schedule 201 Qualifying Facility 10 MW or Less Avoided Cost Power Purchase Information
106	Schedule 202 Qualifying Facilities Greater Than 10 MW Avoided Cost Power Purchase Information
107	Power Purchase Agreements

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PGE Wind Integration Study Phase II

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September 30, 2011



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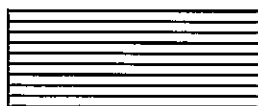
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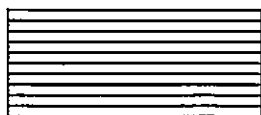
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1. EXECUTIVE SUMMARY

In 2007, given projections for a significant increase in wind generating resources, Portland General Electric (PGE) began efforts to determine forecast costs associated with self-integration of wind generation. This effort entailed developing detailed (hourly) data and optimization modeling of PGE's system using mixed integer programming (MIP). This study was intended as the initial phase of an on-going process to further estimate wind integration costs and refine the associated model.

In October 2009, PGE began Phase 2 of its Wind Integration Study and contracted for additional participation from EnerNex (a leading resource for electric power research, plus engineering and consulting services to government, utilities, industry, and private institutions), who provided input data and guidance for Phase 1. A significant driver of Phase 2 was the expectation that the cost for wind integration services, as currently provided by the Bonneville Power Administration (BPA), would increase significantly as growing wind capacity in the Pacific Northwest would exceed the potential of BPA's finite supply of wind-following resources.¹ In addition, it is PGE's contention that BPA's variable energy services rate and subsequent generation imbalance charges represent only a portion of the total cost to integrate wind, as calculated in this study.

A significant goal for Phase 2 of the Wind Integration Study was to include additional refinements for estimating PGE's costs for self-integration of its wind resources. As in Phase 1 of the Wind Integration Study, Phase 2 has also sought input, deliverables, and feedback from a Technical Review Committee (TRC) and other external consultants. Since launching Phase 2, PGE has reprogrammed and refined the wind integration model, updated the study, and also held public meetings to discuss progress and modeling

¹ On July 26, 2011, BPA posted the "Administrator's Final Record of Decision" for the BP-12 Rate Proceeding. The Variable Energy Resource Balancing Service Rate decreased by 4.7% for FY 2012-2013. Although the rate has decreased for this current rate period, PGE continues to anticipate future rate increases as the level of service provided by BPA continues to decline due to policy decisions such as BPA's "Interim Environmental Redispatch and Negative Pricing Policies" issued May 13, 2011.

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details. The public meetings were attended by staff representatives from the Oregon Public Utility Commission (OPUC), the Oregon Department of Energy (ODOE) and other interested parties that have participated in PGE's 2009 Integrated Resource Planning proceeding (IRP – OPUC Docket No. LC 48). In addition to these public reviews, the Phase 2 data and methodology has been vigorously evaluated by the TRC and EnerNex, who provided valuable insight and information associated with wind integration modeling.

The Phase 2 model consists of mixed integer programming using the General Algebraic Modeling System (GAMS) programming and a Gurobi optimizer. This provides greater efficiency, calculation speed, and flexibility for the more rigorous requirements of Phase 2 calculations. Additional improvements in Phase 2 include:

- Three-stage scheduling optimization with separate Day-Ahead, Hour-Ahead, and Within-Hour calculations;
- Refined estimates of PGE's reserve requirements; and
- Isolation for cost purposes of the components of ancillary services (i.e., Day-Ahead uncertainty, Hour-Ahead uncertainty, load and Load Following for Wind, and Regulation).

The results of the study indicate that PGE's estimated self-integration costs are \$11.04 per MWh and within the range calculated by other utilities in the region. Specific model assumptions are detailed below but, in short, reflect a potential 2014 state in which PGE seeks to integrate up to 850 MW of wind (to meet 2015 the Oregon physical RPS requirement) using existing (by 2014) PGE resources and associated operating limitations. This is intended to set a baseline from which subsequent remediation actions can be assessed. As the supply of variable resources and associated demand for flexible resources increases over time, subsequent phases of the Wind Integration Study can assess these changes.

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2. INTRODUCTION

2.1 REASONS FOR THE PHASE 2 WIND INTEGRATION STUDY

Because wind integration costs directly affect PGE's resource acquisitions and their comparative economic evaluation, in Commission Order No. 10-457, at 25, the OPUC directed that:

In its next IRP planning cycle, PGE must include a wind integration study that has been vetted by regional stakeholders.

Another driver to the Study is the expectation that BPA will reach the limit of its available wind-integrating resources in the not-too-distant future. Currently, BPA's Federal Columbia River Power System (FCRPS) provides a majority of the wind integration capability in the Pacific Northwest. However, with regional wind capacity increasing from 250 MW to 3,500 MW from 2005 to 2010, and expectations of an additional 9,000 MW during the next 5 years, PGE expects BPA's finite resources for integrating wind will become increasingly costly and constrained. Hence, PGE needs to understand its own integration capabilities and costs.

As PGE expands its wind generating capacity to satisfy the 2015 and 2020 Oregon Renewable Energy Standard (RES) requirements, PGE's IRP Action Plan has identified the need for both traditional seasonal capacity (to which the firm contribution of variable resources is assumed at 5% of nameplate) as well as flexible generation supply to integrate variable supply. Pursuant to the Action Plan, PGE is issuing two Requests for proposal (RFPs) to acquire:

Up to 400 MW of additional wind generation to reach physical compliance with the 2015 RPS standard and

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Dual-purpose flexible resources to provide seasonal capacity and Dynamic Capacity² suitable for self-integration of variable wind generation.

This Wind Integration Study provides the estimated wind integration cost for evaluating wind bids (including PGE's own benchmark proposal) as well as the indicative dispatch requirement for a new flexible resource.

2.2 STUDY ASSUMPTIONS

Phase 2 of the Wind Integration Study is based on existing PGE owned and contracted resources (as of 2014) plus 400 MW of additional wind generation as a proxy for meeting our Action Plan target of 122 MWa of new renewables. For generating resources, PGE has a varied mix of generation consisting of 1,827 MW of thermal generation (670 MW coal-fired and 1,157 MW gas-fired), 489 MW of PGE-owned hydro generation, approximately 300 MWa of long-term hydro power purchase agreements, and 550 MW of wind generation. (One-hundred MW of the wind plant receives long-term third-party wind integration and is not included for this study.) Because PGE is currently a "short" utility, the remainder of its load is covered by market transactions – term contracts and spot market purchases. Although future requirements for capacity and energy resources are identified in the most recent IRP (acknowledged by Commission Order No. 10-457), these were not included in the Wind Integration Study because they are not yet identified (RFPs are currently under development).

Because PGE's service territory resides entirely within Oregon, we are subject to Oregon's RES, which establishes increasing percentages of a utility's load that need to be met by renewable resources.³ In order to meet this requirement, PGE's IRP also includes an additional 122 MWa of renewable resources to be installed by 2015. Because wind energy is the resource in this region that is currently available in economic quantity, PGE

² Dynamic Capacity is the capacity used/needed to balance the within-hour variability brought on by the combination of variable energy resources and load.

³ The standard starts at 5% in 2011, then increases to 15% in 2015, 20% in 2020, and 25% in 2025.

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has conservatively assumed for purposes of this study that the majority of the requirement will be met with wind – approximately 400 MW of new nameplate wind. As this represents a statutory requirement that directly impacts PGE’s wind integration efforts, PGE included it in the current study. Additional assumptions within the model include:

2014 is the Wind Integration Study year.

2005 actual data was used for hydro flows, wind generation, and load forecast errors.

2014 Mid-Columbia (Mid-C) electricity market prices (as used for economic dispatch in the wind integration model) were simulated with AURORAxmp. This is the model used in the Integrated Resource Plan (as discuss in Section 5.3.2, below.

PGE’s 450 MW Biglow Canyon Wind Farm, located in Sherman County, Oregon, is self-integrated.

The 400 MW of wind resources, for purposes of developing an annual capacity factor and hourly output profile, are assumed to be located east of Biglow Canyon in the Columbia River Gorge.

PGE resources available to provide ancillary services:

- o PGE’s contractual share of Mid-Columbia hydro generation, which diminishes over time;
- o Two-thirds of Pelton-Round Butte hydro generation
- o Beaver gas-powered generation, in both combined cycle and simple cycle modes.

PGE resources not available to provide ancillary services:

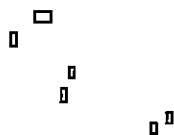
- o Port Westward gas-powered generation
- o Coyote Springs gas-powered generation
- o Boardman coal-powered generation
- o Colstrip coal-powered generation

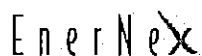
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Specific details of PGE's resources and their effective uses for ancillary services are provided in Section 5.4.1, below.

In Section 3 of this report, we summarize the public process and third-party review undertaken to ensure that PGE has accomplished its goal to build an accurate representation of its potential for self-integration using base-line assumptions and robust modeling techniques. In Section 4, we describe the regional wind characteristics used to establish PGE's integration requirements during Day-Ahead, Hour-Ahead, and Within-Hour time frames. In Section 5, we provide a detailed description of PGE's wind integration methodology including the programming tools, data assumptions, modeling approach, and calculations for reserves and other variables. In Section 6, we provide a summary of the results and conclusions of our findings. Section 7 provides appendices of supporting detail and documentation.





3. PUBLIC PROCESS AND REVIEWS

An important objective of Phase 2 of the Wind Integration Study was to assure a robust review by external parties of the logic, assumptions, and data within the model to ensure their accuracy and thereby comply with the Commission directive to have a “wind integration study that has been vetted by regional stakeholders.” (Op. cit.) To achieve this, several groups were invited to participate in PGE’s efforts.

3.1 TECHNICAL REVIEW COMMITTEE (TRC)

PGE’s TRC consisted of the following members⁴:

- J. Charles Smith, Executive Director, Utility Wind Integration Group (UWIG)
- Michael Milligan, Ph.D., Principal Analyst, National Renewable Energy Laboratory (NREL)
- Brendan Kirby, P.E., Consultant with NREL
- Michael Goggin, Manager of Transmission Policy, American Wind Energy Association (AWEA)

The constitution, functions and requirements of the TRC were determined in accordance with UWIG’s “Principles for Technical Review Committee (TRC) Involvement in Studies of Wind Integration into Electric Power Systems” as provided in Appendix A.

The TRC provided timely guidance that improved both the study’s methodology and data integrity. By means of periodic reviews, the TRC provided assistance on many issues including:

- Wind data development and research into 3TIER’s wind modeling methodology;
- Research into NREL Mesoscale data (commonly known as “3-day seams anomaly”);

⁴ Brad Nickells, Director of Transmission Planning for the Western Electric Coordinating Council, was an original member of PGE’s TRC. He withdrew due to a change in his job requirements.

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Definition of the time basis for deriving the Hour-Ahead forecast error;
Identification of an error in the NREL wind data post power curve conversion;
Distinguishing between Regulation and Regulating Margin.

In accordance with UWIG's TRC Principles agreement, PGE's TRC, in a joint letter displayed in Appendix B, "endorses the study methodology, execution, and this final report" of PGE's Phase 2 Wind Integration Study.

3.2 MIXED INTEGER PROGRAMMING CONSULTANTS

PGE employed two outside subject matter experts, Jeff Linderoth, Ph.D. and Jennifer Hodgdon, Ph.D to assist in the development of the mixed integer programming (MIP) based optimization model that PGE used to calculate costs associated with integrating wind into the PGE system. Dr. Linderoth translated PGE's model from the prior Excel-based software platform to the GAMS modeling language. Dr. Linderoth also provided guidance on model formulation and solution strategy, including guidance with selecting the Gurobi MIP solver. Dr. Hodgdon developed the Excel and visual basic code that controls model execution and data input and output.

Jeff Linderoth is an Associate Professor in the departments of Industrial and Systems Engineering and Computer Sciences (by courtesy) at the University of Wisconsin-Madison, joining both departments in 2007. He received his Ph.D. degree from the Georgia Institute of Technology in 1998. Professor Linderoth's research focuses on modeling and solving real-world, large-scale optimization problems. Specific research areas include integer programming and stochastic analysis for decision making under uncertainty. His research places a particular emphasis on developing high-performance, distributed optimization algorithms and software.

Jennifer Hodgdon is owner and Principal Consultant for Poplar ProductivityWare, Seattle and Spokane, WA. She received her Ph.D. degree from Cornell in 1993 and has more

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than fifteen years of experience as a professional software developer, using a variety of languages and operating systems for many different applications and in various industries.

3.3 PUBLIC MEETINGS

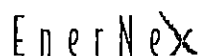
PGE held three public regional stakeholder meetings in which all members of the service list from PGE's 2009 IRP (OPUC docket LC 48) were invited to attend and provided the opportunity to examine in detail, the methodology of the study and the results. The meetings were held on February 23, May 18, and August 29, 2011 and attended by OPUC staff and other interested parties. An attendee list for each meeting is included as Appendix E. Attending by phone or in person were certain members of the TRC and EnerNex.

During these meetings, PGE provided detailed explanations of the modeling approach, methodology, data inputs, assumptions, bases for cost breakdowns and reserves, and the actual integration costs. PGE also answered numerous questions and engaged in extensive discussion regarding details of the Wind Integration Study.

As part of the February and May meetings, PGE requested that attendees provide comments and recommendations within two weeks of the meetings. PGE also submitted copies of the presentations, including the request for comments and recommendations, to all members of PGE's 2009 IRP service list. For the February meeting, PGE received no comments. Subsequent to the May meeting, PGE received comments from the Renewable Northwest Project (RNP) regarding several aspects of the study. A copy of the comments is provided as Appendix C. PGE's responses to those comments are provided as Appendix D. No other party filed comments.

□

□ □



4. WIND INTEGRATION ISSUES & METHODOLOGY – OVERVIEW

4.1 WIND DATA SOURCE

The development of wind power capacity factors and shapes representative of wind generation operations was established initially by using the NREL Western Wind Resource Database (WWRD). The database is a result of 3TIER Group's modeling of wind resources across the entire western United States to generate a consistent wind dataset at a 2-km, 10-minute resolution based on actual wind measurements for the years 2004, 2005 and 2006. The NREL database converted wind to power based on the power curve for Vestas V90 3MW turbines.

The WWRD database provided the following wind data for the study:

- Date and time (mm/dd/yyyy hh:mm:ss.sss)
- Wind speed (mph)
- Actual wind power output in MW at 10 minute intervals
- Day-Ahead forecast power in MW at 1 hour intervals
- Years 2004, 2005 and 2006
- Site Id
- Site location (Longitude, Latitude)

4.2 WIND SITE POWER OUTPUT

Virtual wind farms of 400MW in Gilliam County east of Biglow Canyon in the Columbia River Gorge and 450MW in Sherman County located in Biglow Canyon (see Figure 1, below) were developed by selecting multiple wind sites and aggregating the wind site outputs from the NREL database. Capacity factors for the 400 MW and 450 MW wind farms using the V90 turbines were 21.2% and 26.0% respectively.

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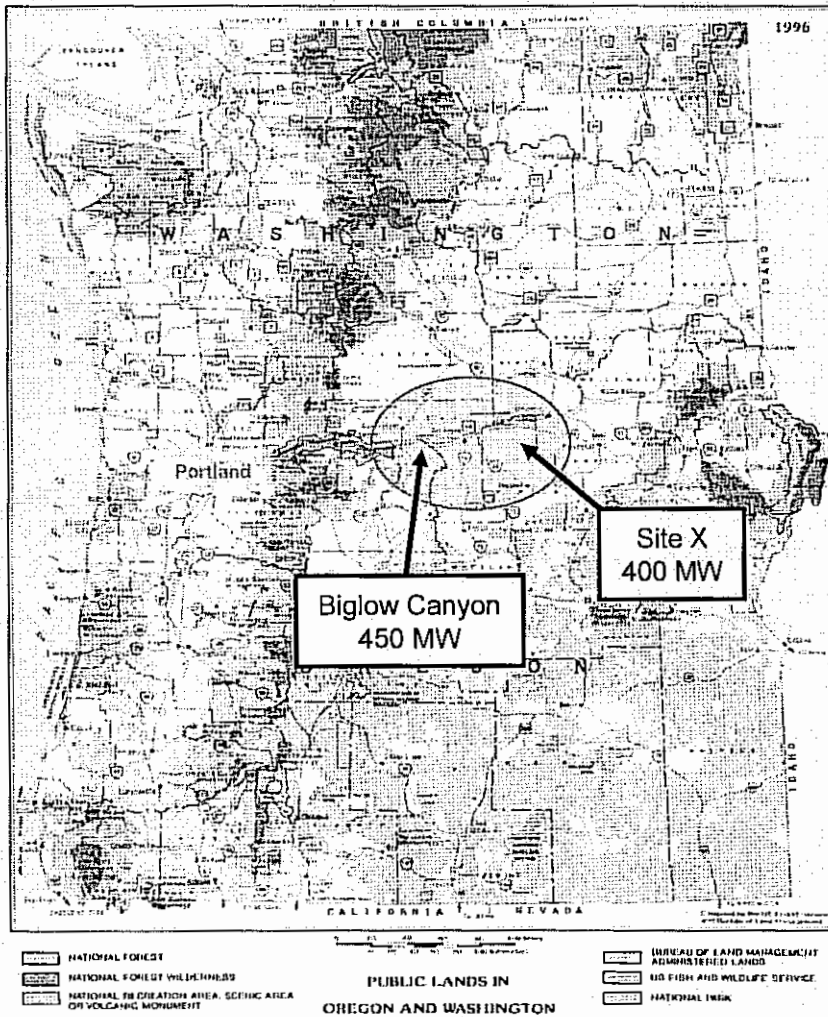


Figure 1: Location of Biglow Canyon and Site X

V90 turbines were not expected to be selected for use at these sites. Instead, a Siemens 2.3 MW turbine would be a more likely candidate considering the wind speeds in the region. The power curve for the Siemens' turbine is different from the V90 power curve

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in that it provides higher per unit output at lower wind speeds see Figure 2. Using the wind speed provided in the WWRD database and applying the power curve provides the turbine output. The resulting Siemens' 2.3 MW energy production increases the capacity factor for the 400 MW and 450 MW wind farms to 28.1% and 33.8% respectively (see Table 1).

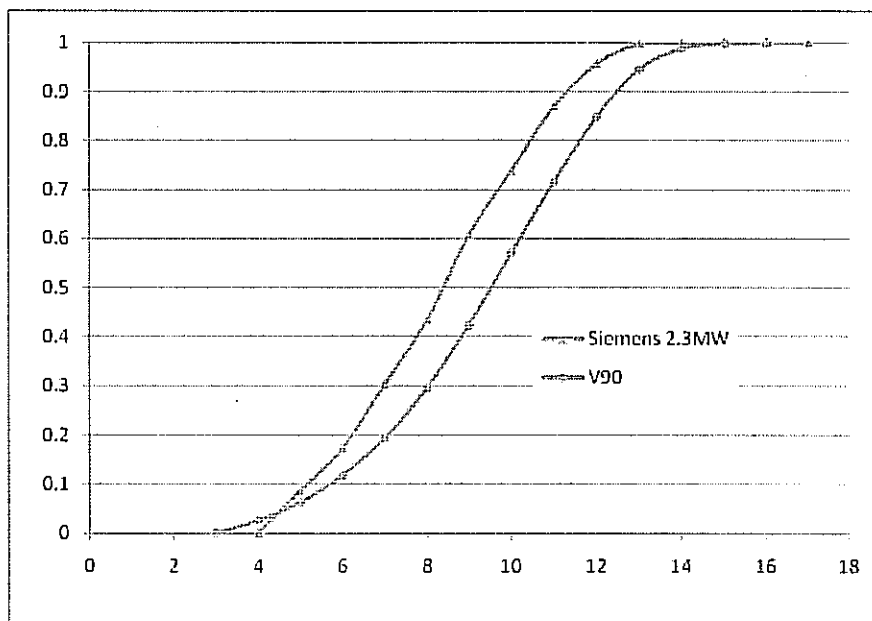


Figure 2: V90 and Siemens 2.3 MW power curves

Table 1: Capacity factor comparison V90 vs. Siemens 2.3 MW turbines (V90 is used in NREL database)

Capacity Factors	400 MW aggregated sites	450 MW aggregated sites
V90 3.0 MW	21.2%	26.0%
Siemens 2.3 MW	28.1%	33.8%



4.3 WIND SITE FORECASTS

Performing effective resource scheduling requires several inputs, one of which is a forecast schedule for load and resources. Short-term load forecasting for purposes of scheduling resources is complex and requires considering the combined effect of several parameters such as weather, day of week, time of year, historical patterns, and known events like holidays. The PGE’s current operational schedule for forecasting loads (and associated resource needs) is shown in Table 2. Forecasts (load and resource) generated on Monday, Tuesday and Wednesday provide a one Day-Ahead forecast. The forecast provided on Thursday yields a one Day-Ahead forecast for Friday and a two Day-Ahead forecast for Saturday. The forecast for Friday provides a two Day-Ahead forecast for Sunday and a three Day-Ahead forecast for Monday.

Table 2: Pacific Northwest Day-Ahead scheduling process

Scheduling Day	Scheduled Day
Monday	Tuesday
Tuesday	Wednesday
Wednesday	Thursday
Thursday	Friday and Saturday
Friday	Sunday and Monday

The forecast wind data extracted from the WWRD database provides a one Day-Ahead forecast for *every day of the week*, which does not match current PGE scheduling practice. In other words, the Friday forecast is for Saturday, the Saturday forecast is for Sunday etc. In order to augment the NREL WWRD to reflect current PGE scheduling practices, PGE provided hourly forecast data to EnerNex from 2007 through 2010 for Biglow Canyon, along with the corresponding actual generation data. From this, it was

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possible to derive the error statistics for the forecast of each Scheduled Day of the week. Figure 3, below, depicts the Mean Absolute Error (MAE) for each consecutive hour for one, two and three Day-Ahead forecasts.

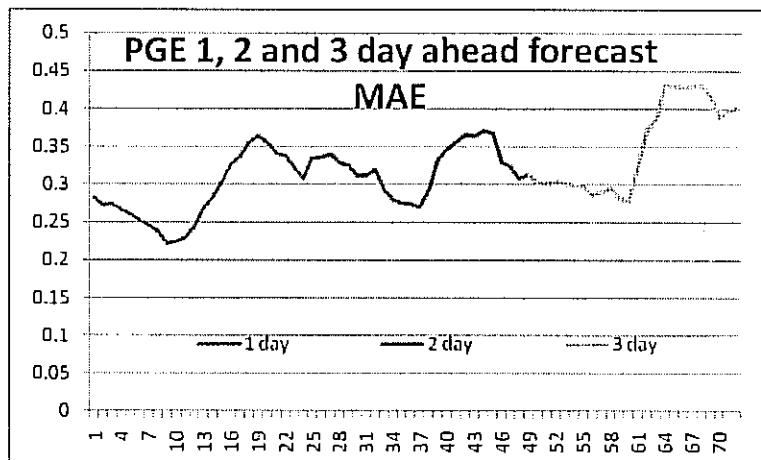


Figure 3: Mean Absolute Error for PGE wind forecasts of 1, 2, and 3 days ahead

As mentioned above, the WWRD forecast data provides only a Day-Ahead forecast not a two or three Day-Ahead forecast. Wind forecasts for Saturday, Sunday and Monday from the WWRD database would not represent the increase in forecast error that PGE experienced with the historical data. The Day-Ahead forecast from the WWRD database for Saturday, Sunday and Monday were modified for this study such that the forecast energy from the WWRD data would not change, however the forecast error would increase to approximate the same increase in error as the historical data. As can be seen in Figure 4, the Day-Ahead forecast was not changed, while the two Day-Ahead forecast was modified such that the forecast error increased by 14.1% and the three Day-Ahead forecast error increased by 24.1%. Although slightly higher than the PGE forecast error, the MAE for the adjusted WWRD forecast error for the one, two and three Day-Ahead forecasts are 17.8%, 20.3% and 22.1% respectively.

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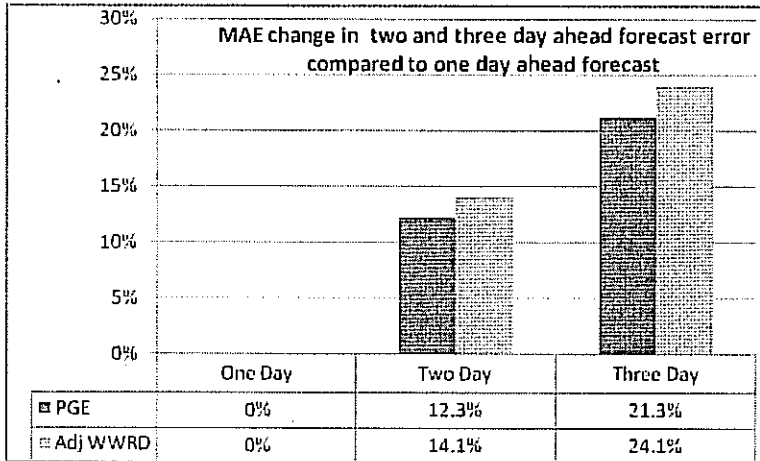


Figure 4: PGE forecast compared to adjusted WWRD forecast

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5. WIND INTEGRATION METHODOLOGY

5.1 OVERVIEW

Phase 2 of the Wind Integration Study seeks to determine the effect on system operating costs resulting from the introduction of wind resources on PGE's system; specifically, of PGE employing its own generating resources to integrate 850 MW of wind capacity in 2014. The incremental costs of wind integration due to the incremental reserve requirements are isolated by modeling total system costs with and without the incremental reserve and other operational requirements. The cost of wind integration in this study is measured as the savings in system operating costs that would result if wind placed no incremental requirements on system operations. The cost savings are conditional on the ability of a given set of generation resources to adjust for the variability and uncertainty of wind generation.

In the remaining sections of this chapter, we will discuss:

- The need for Dynamic Capacity (Section 5.2)
- The modeling tools used by PGE in implementing the study (Section 5.3.)
- Data sources, data generation, and modeling assumptions (Section 5.4.)
- The logic and structure of the modeling approach (Section 5.5.)
- Methods for calculating incremental reserves for integrating wind (Section 5.6.)

5.2 THE NEED FOR DYNAMIC CAPACITY

One of the challenges that PGE faces as a system operator is that we are required to match our system generation to our system load while that load is constantly changing, moment-to-moment. As PGE adds variable generation, such as wind, to its portfolio of resources, that challenge becomes more demanding as both generation and load can change moment-to-moment. Addressing the challenge of matching total generation with load in real time requires flexible generation that can change production levels over a



significant range of operations, and do so in a short time frame. PGE refers to this capability as Dynamic Capacity. The challenge facing scheduling entities in the Pacific Northwest is that currently power, predominantly from trades, is scheduled for no less than one hour blocks.⁵ Consequently, any response to changes in load (and wind) must be managed with generators over which PGE has physical control and that have been positioned at the start of the hour to support such dynamic generation changes.

To provide Dynamic Capacity, utilities require certain types of generators. One type that cannot be employed is a base load generator that produces a constant amount of energy across the hour, as is shown in the “Energy” graph depicted in Figure 5, below. In this example, the generator has a maximum capacity of 50 MW and is producing 50 MW of energy for the entire hour. At the end of the hour, the integrated energy production will be 50 MWh and it provides no Dynamic Capacity.

When a generator is positioned to provide Dynamic Capacity, it does so by being able to operate through the entire nameplate range of the generator across the hour. This hourly generation profile will look like the “Capacity” graph in Figure 5, below. In this case the integrated energy production across the hour is 25 MWh.

When the generator is operated to provide both energy and capacity, the generation profile will look like the “Energy and Capacity” graph in Figure 5, below. In this example, the 50 MW generator is producing 25 MW of energy for the entire hour (25 MWh) and 25 MW of Dynamic Capacity range for the hour (12.5 MWh). At the end of the hour, the integrated energy production for the hour will be 37.5 MW.

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⁵ Recently, there has been movement toward allowing 30-minute scheduling in the Pacific Northwest.

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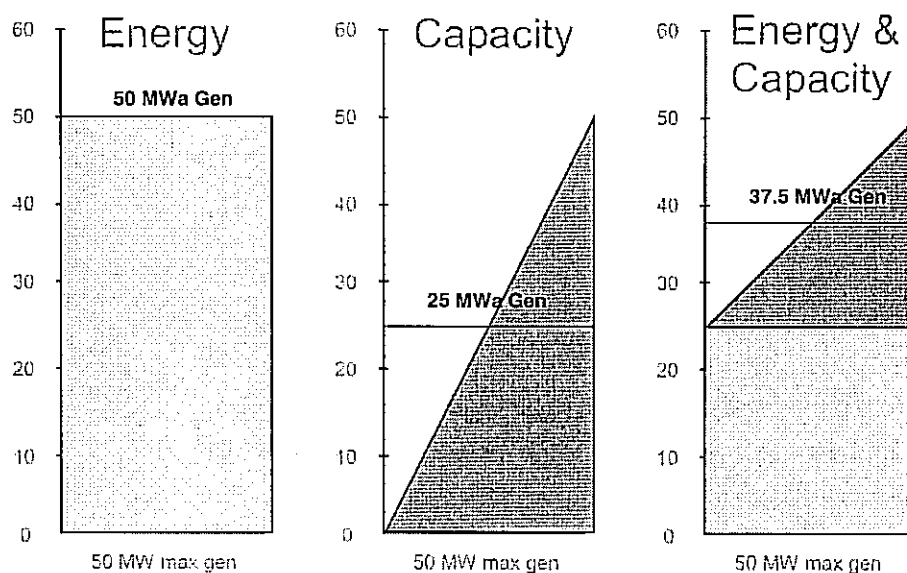


Figure 5: Examples of 50 MW generator operating for one hour

To fully address the demands of Dynamic Capacity, utilities must maintain a certain level of Operating Reserves. Generating capacity must be set aside from normal load serving operations for Load Following, Regulation, and Contingency Reserves (Spinning Reserves and Non-Spinning Reserves). Each of these has a capacity requirement and the capacity requirement is cumulative. Load Following and Regulation also have an energy requirement that must be assigned to the generator that is carrying the services. Contingency Reserves have requirements for storage (for hydro plants) or fuel (for thermal plants). For Hydro, the pond must have sufficient water to produce the energy reserved for the hour. For Thermal, fuel must be available to operate at the level of Spinning and Non-Spinning Reserves allocated for the hour. Table 3, below summarizes these requirements:



Table 3: Requirements for Operating Reserves

Requirement	Capacity	Energy	Fuel Source with Storage
Load Following	X	X	
Regulation	X	X	
Spinning Reserves	X		X
Non Spinning Reserves	X		X

Figure 6 below, provides an example of the reserve requirements and modeling for Dynamic Capacity involving a generator with a minimum generation level of 5 MW and a maximum generation output of 55 MW. Within the hour, the unit can operate between 5 MW and 55 MW, providing 50 MW of Dynamic Capacity. When modeling this generator, we first reserve the capacity and energy production associated with Dynamic Capacity requirements. Any remaining operating range is available for *discretionary energy production*. In this case, the unit is providing 6 MW of operating range for Regulation. Throughout the hour, the generator will produce 3 MWa energy associated with supporting the 6 MW of Regulation range. This is reflected in Figure 6 as:

- ½ of the Regulation range is added to the minimum output to reserve this generating space for the downward Regulation requirement; and
- ½ of the Regulation range is subtracted from the maximum output to reserve this generating space for the upward Regulation requirement.

Consequently, the new minimum generation is 8 MW (5 MW + 3 MW), and the new maximum generation is 52 MW (55 MW – 3 MW).



The Load Following requirement is treated similarly to Regulation. However, it may be unidirectional since the load trend is typically rising in the morning and declining in the evening. Similarly, when wind is at zero it can only trend up and when wind is at full

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output it can only trend down. In the example in Figure 6, the Load Following range assigned to this generator is 20 MW, which means that the unit will produce 10 MWh of energy in the hour to provide 20 MW of Load Following range. This is reflected in Figure 6 as:

- ½ of the Load Following range is added to the minimum output to reserve this generating space for the downward Load Following requirement; and
- ½ of the Load Following range is subtracted from the maximum output to reserve this generating space for the upward Load Following requirement.

The new minimum generation is now 18 MW (8 MW + 10 MW) and the new maximum generation is 42 MW (52 MW – 10 MW).

Contingency Reserves (Spinning and Non-Spinning) do not have an hourly energy production until they are called upon. In the example in Figure 6, the unit is supplying 2 MW of Spinning Reserves and 2 MW of Non-Spinning Reserves. Both are subtracted from the adjusted maximum to reserve this capacity on the generator. At this point, the minimum after accounting for Contingency Reserves remains unchanged at 18 MW. The new maximum, however, is reduced to 38 MW (42 MW – 2 MW [Spinning] – 2 MW [Non-Spinning]).

As a result of these regulation, load following, and reserves requirements, the generator in Figure 6 has a remaining range to dispatch for discretionary energy production between 18 MW and 38 MW. In summary, the unit depicted in Figure 6 has the following generation capabilities:

- 5 MW of minimum generation
- 30 MW of Dynamic Capacity
 - 6 MW of Regulation
 - 20 MW of Load Following



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- o 2 MW of Contingency Reserves (Spinning)
 - o 2 MW of Contingency Reserves (Non-Spinning)
- 20 MW of discretionary energy.

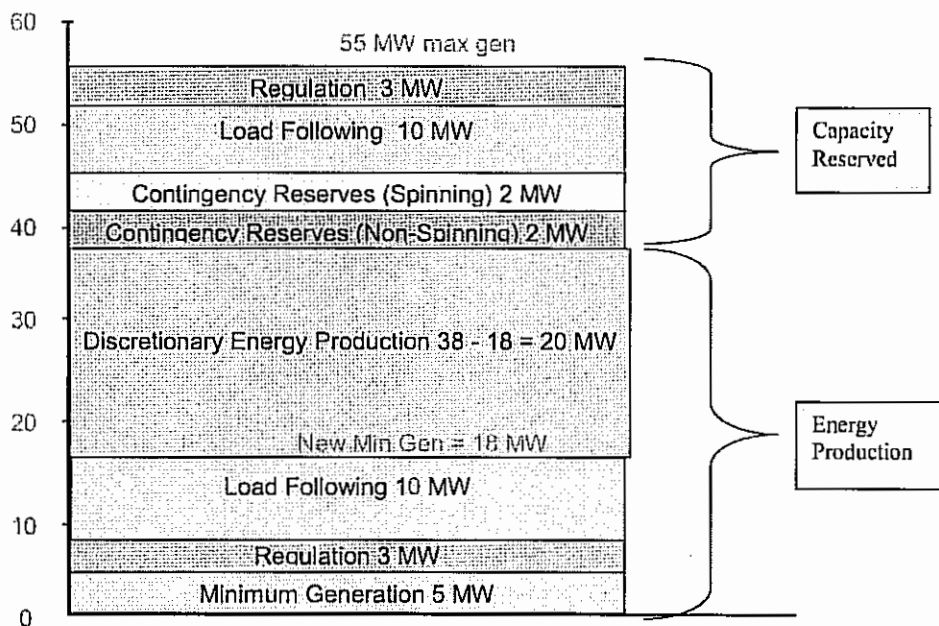


Figure 6: Example of modeling a generator supplying Dynamic Capacity

5.3 MODELING TOOLS

5.3.1 System Optimization

PGE has developed an hourly dispatch model to estimate operating costs for the PGE system. This is the principal model used in the Wind Integration Study. The model has a cost minimization objective function and a set of equations/inequalities which detail constraints on the operation of PGE's system. This model was constructed using three commercially available software products: GAMS, Gurobi, and Microsoft Excel. GAMS is used to program/compile the objective function and operating constraint equations.

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Gurobi is used to solve the resulting constrained optimization problem. Excel (and associated VBA code) is used for data input, reporting model results, and overall model control.

GAMS is a high-level modeling system for mathematical programming and optimization. It consists of a language compiler and a set of integrated high-performance solvers. GAMS is tailored for complex, large-scale modeling applications, and facilitates the construction of large maintainable models that can be quickly adapted to new situations.

The Gurobi Optimizer is a state-of-the-art solver for linear programming (LP), quadratic programming (QP), and mixed-integer linear/quadratic programming (MILP and MIQP). It was designed to exploit modern multi-core processors. For MILP and MIQP models, the Gurobi Optimizer incorporates the latest methods including cutting planes and powerful solution heuristics. Models benefit from advanced presolve methods to simplify models and reduce solve times.

5.3.2 *Aurora Model*

PGE relies on the AURORAxmp Electric Market Model⁶ in its IRP for developing the long-term forecast of wholesale electricity prices and for portfolio analysis, as detailed in Chapter 10 of PGE's 2009 Integrated Resource Plan.⁷ AURORAxmp is a model that simulates electricity markets by NERC (North American Electric Reliability Corporation) area, detailing: 1) resources by geographical area, fuel, and technology; 2) load by area; and 3) transmission links between areas. As stated in the IRP, PGE uses it to conduct fundamental supply-demand analysis in the Western Electric Coordinating Council (WECC). AURORAxmp is also used to forecast 2014 hourly electricity prices for the Pacific Northwest. These prices were then input into the Wind Integration Model, see Figure 7.

⁶ A more detailed description of the model is on the vendor's web-site http://www.epis.com/aurora_xmp/

⁷ The Plan is available on Portland General Electric's web-site:

http://portlandgeneral.com/our_company/news_issues/current_issues/energy_strategy/docs/irp_addendum.pdf

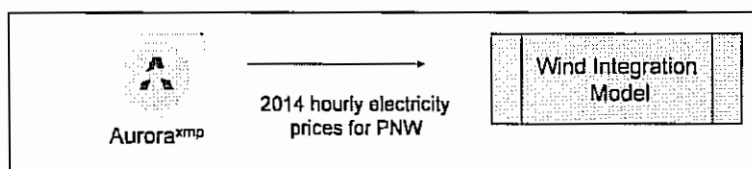


Figure 7: Forecast of electricity prices for 2014

The methodology and underlying assumptions used to project WECC prices to 2014 are detailed in the 2009 IRP Addendum, chapters 10.2 and 10.3 (see also Section 5.4.3, below). However, certain updated macroeconomic assumptions were used when new information was made available. More detail on this is provided in Section 5.4, below.

5.4 DATA ASSUMPTIONS

5.4.1 *Plants Available for Integration*

As noted in Section 2.2, above, PGE has a varied mix of generating resources but only a subset of these resources has the capability to provide the Dynamic Capacity required for wind integration. Specifically, we do not use the following thermal resources as part of our modeling:

Port Westward (excluding the duct burner) – plant technology was not designed to provide Dynamic Capacity.

Boardman – this baseload coal plant has a limited dynamic range. It is unavailable due to PGE’s interpretation of BPA’s Dynamic Transfer Operating and Scheduling Requirements Business Practice. (Please refer to PGE’s reply to RNP Comments in Appendix D for more detail.)

Coyote – unavailable due to PGE’s interpretation of BPA’s Dynamic Transfer Operating and Scheduling Requirements Business Practice. (Please refer to PGE’s reply to RNP Comments in Appendix D for more detail.)

Colstrip – PGE does not directly control the operation of this baseload coal plant.

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As described in Section 5.2 above, for resources that are able to provide ancillary services, only the portion not used for discretionary energy production is available for Dynamic Capacity. A summary of PGE’s resources and their specific ancillary services capabilities is provided in Table 4 and Table 5, below.

Table 4: PGE’s hydro and coal generation availability for ancillary services

	Operational Reserve	Mid-C	Round Butte	Pelton	Boardman	Colstrip
Energy		√	√	√	√	√
Capacity	Load Following	√	√	√		
	Regulation	√	√	√		
	Spinning Reserve	√	√	√		
	Non-Spinning Reserve	√	√	√		

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Table 5: PGE's gas and other generation availability for ancillary services

	Operational Reserve	Port Westward	Duct Burner	Coyote	Beaver-SC	Beaver-CC	DSG
Energy		√	√	√	√	√	
Capacity	Load Following		√		√	√	
	Regulation				√		
	Spinning Reserve		√		√	√	
	Non-Spinning Reserve		√		√*	√	√

* Beaver has to be operating to provide both spinning and non-spinning contingency reserve.

5.4.2 Fuel Prices

PGE relies on independent third-party sources to project fuel prices. Specifically, to be consistent with our IRP methodology,⁸ a combination of PIRA forecasts and PGE trading curves were used. Variable transportation costs were then added to the commodity price in order to compute the delivered cost of the fuel, which along with variable O&M, is used in the dispatch decision.

PGE used the most recent available fuel forecast, which is PIRA's February 2011 Scenario Planning forecast. PIRA's prices are confidential and, therefore, cannot be disclosed publicly.

⁸ See Chapter 5 of our 2009 IRP, which is available on our web-site: http://portlandgeneral.com/our_company/news_issues/current_issues/energy_strategy/docs/irp_nov2009.pdf
[Note that when we filed the IRP in 2009, the short-term was defined as 2010-11 and long term as 2014 and beyond.

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5.4.3 Regional Wholesale Electricity Prices

PGE used AURORA_{xmp} to generate the wholesale electricity prices used in the wind integration model for the dispatch of PGE generating resources. AURORA_{xmp} simulates the fundamentals of supply and demand in the WECC and is the model used in PGE's 2009 IRP. Changes in assumptions since filing the IRP are listed below:

Gas prices. The most recent forecast from PIRA dated February 2011 was used;
Carbon regulation. It was assumed that no specific carbon regulation is in place by 2014 (the IRP assumed a CO₂ tax starting in 2013);

Wind shapes. EnerNex estimated hourly wind generation for most zones (geographical entities in AURORA's topology) in the WECC using NREL's Western Wind Dataset. PGE used the simulated hourly generation for 2005 to estimate wind generation hourly shapes for the areas in AURORA for which they were available. The year 2005 was chosen because the 2005 hydro year for this region was the closest to normal runoff conditions of the three years of NREL wind data.

Hydro in the WECC. In consultation with the Northwest Power and Conservation Council (NWPCC), PGE implemented a few enhancements to the AURORA_{xmp} default hydro tables. The intent was to better capture constraints on unused hydro capacity when used to meet reserves requirements. AURORA_{xmp} is now prevented from relying on unused capacity of run-of-river plants to provide reserves, as it is not technically possible. In addition, capacity available for reserves is capped to the maximum sustainable capacity. To reflect potential operational constraints to regulate hydro generation, non-federal hydro is constrained when providing reserves. Also, per NWPCC recommendations, hydro generation in the Pacific Northwest (PNW) is shaped to correspond with the regional load instead of the load of the entire WECC.

The resulting average 2014 wholesale electricity price is \$44.47 per MWh (\$50.60 on-peak and \$36.29 off-peak). In the Pacific Northwest, prices tend to peak in winter, when PNW load peaks, and in July-August, when California's load is peaking. Spring is

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typically a low price season, because of the abundance of hydro. Hydro is a major driver of prices in the Pacific Northwest. For modeling purposes we assume average hydro conditions.

Figure 8 below, shows the seasonal behavior of prices in the Pacific Northwest as simulated for 2014, assuming average water, wind, and load conditions.

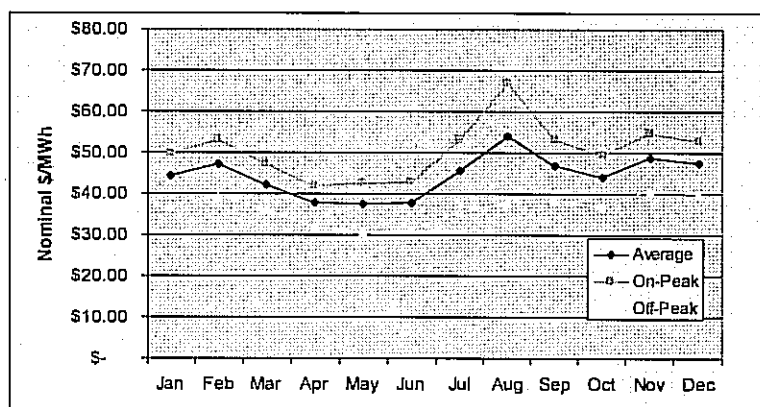


Figure 8: 2014 Wholesale electricity prices for the Pacific Northwest, nominal \$/MWh

5.4.4 Loads and Load Forecast Error

For Phase 2 of the Wind Integration Study, PGE projected its 2014 load data by employing a three-step process using 2005 actual load and 2005 Day-Ahead and Hour-Ahead load forecast data. The wind data is based on 10-minute intervals for the necessary Within-Hour granularity.

Step 1. Realign Days of Week

PGE developed the 2014 load data from 2005 load data by first aligning the 2005 actual load data days of the week with the 2014 days of the week. Because January 1, 2005 fell on a Saturday and January 1, 2014 falls on a Wednesday, we used the first Wednesday of January 2005 (January 5th) for Wednesday, January 1st, 2014. Thursday, Jan. 6th, 2005

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was then used for Thursday, Jan. 2nd, 2014, and so on. This step is important because the load and wind data must correspond to the same days for consistency in deriving the “load net wind” concept.

Step 2. Escalate 2005 to 2014

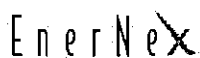
The realigned 2005 data was then scaled up to 2014 levels by an escalation factor equal to the percentage increase from PGE’s 2005 average annual actual load to PGE’s 2014 average annual forecast load. The realigned and scaled data was then used to develop the projected 2014 real-time load data in the model.

Step 3. Develop Hour-Ahead and Day-Ahead Forecast Loads

PGE’s 2014 Hour-Ahead and Day-Ahead forecast load data was derived by summing the 2014 forecasted-actual load data (derived in steps 1 and 2 above) with the corresponding 2014 Hour-Ahead or Day-Ahead load forecast error data. Specifically, the 2014 Hour-Ahead and Day-Ahead load forecast error data was created by: 1) taking the difference between the respective forecasted and actual 2005 loads, and then realigning to the matching day of the week, and 2) scaling the actual 2005 Hour-Ahead and Day-Ahead forecast errors in the same way the 2005 actual load data was escalated to 2014 forecast load data (described in step 2, above).

5.4.5 Water Year

PGE selected 2005 hydro flows for use in the wind integration model as a proxy for 2014 hydro flows. Of the three years (2004-2006) of NREL wind data used in the Western Wind and Solar Integration Study (from which EnerNex derived the wind energy data), 2005 was nearest to a normal hydro year for the Pacific Northwest. PGE did not use a 3-year hydro average of those years because the resulting hourly averages would mask the interactive effect of localized weather on hydro flows and wind speeds. The inputs of the wind integration model are temporally aligned to try to capture the effect of weather



creating volatility in loads, wind, and hydro, and the resulting effect on the system trying to provide the Dynamic Capacity to meet the reserve needs of such volatility.

Specific hydro data used in the wind integration model includes:

Mid-Columbia hydro energy – this is treated as one resource in the model, so historical (2005) flows from Chief Joseph were used.

Deschutes hydro project inflows – USGS daily average inflows from 2005 were the assumed inflows for Round Butte.

Hourly energy for PGE's run-of-river hydro – PGE historical PSAS (Power Scheduling and Accounting System) data from 2005 was used as proxy hourly energy data for Oak Grove, North Fork, Sullivan, Faraday, River Mill, and PGE's portion of Portland Hydro Project. (These hydro facilities do not provide ancillary services for wind integration.)

5.4.6 Bid/Ask Pricing

The wind integration model assumes virtually unlimited access to the energy market in the Day-Ahead and Hour-Ahead schedules. When the model chooses to purchase or sell energy in the Day-Ahead or Hour-Ahead stages to balance generation to load net of wind, there is an assumed bid/ask spread that affects the economics of using the market to meet load.⁹

In the model, the Day-Ahead market has a fixed bid/ask price of \$0.25 per MWh. In the Hour-Ahead stage of the model, a sliding bid/ask spread is used as a function of the desired transaction block size based on the operational experience of PGE's Real Time Power Operations. Table 6, below, represents the assumed bid/ask percentage premiums that are applied to Hour-Ahead market purchases and sales.

⁹ In the Within-Hour stage, the market is not available to meet load; PGE controlled resources are relied upon for balancing within the hour.

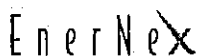


Table 6: Hour-Ahead assumed Bid/Ask percentages of market price

MW Range	Bid/Ask Percent of Price
0 to <50	0
50 to <100	5%
100 to <200	10%
200 to <300	20%
300 to <400	25%
>=400	30%

5.4.7 General Constraints for Hydro

For hydro resources, PGE utilized data from PGE’s contractual portion of the Mid-Columbia system and our share of the Pelton/Round Butte project, located on the Deschutes River in Oregon, to provide integration services in the optimization model. For both systems the hydro generation was limited to meet physical operating constraints specific to each system including minimum flow, minimum generation, maximum generation, water available, and pond elevations. In all cases, the projects were operated on a weekly basis, and pond volumes at the end of the week were set equal to pond volumes at the start of the week. This preserved the water balance within each week and allowed the weeks to be run independently. Because the model starts each week at midnight Sunday, the starting ponds are set to a position to allow either draft or fill at that point in time. This reflects PGE’s actual operations. Specific constraints for each system are provided below.

Mid- Columbia System

The Mid-Columbia system utilizes an accounting concept of hourly energy inflow and pond elevation limits which is calculated in MWh terms. PGE’s generation requests on the Mid-Columbia are combined with the signals of many other parties. This total generation request is then split among several plants providing generation. Because the signal is combined and blended and several units are responding, the individual unit

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movement away from its mechanical efficiency is very small. Generation plus spill, on an hourly basis at the Mid-Columbia, is allowed when the following conditions are met:

Generation greater than minimum required generation and less than maximum capacity generation.

Pond levels are below pond maximum and above pond minimum.

Finally, the available generation (based on historical hourly discharge data) is not impacted by a reduction in unit mechanical operating efficiency when the system is used to provide regulation or load following.

Deschutes River System

The Deschutes River system has three projects: Round Butte, Pelton, and the Pelton Regulating Project, which acts as a buffer to ensure that discharge for the three-project system is consistent throughout the day. The modeling reflects the capabilities of PGE's share of the dams.

This system has fairly restrictive discharge requirements that govern the rate at which the discharge can be changed. By having the model run for one week intervals, we simplified the discharge constraint to make discharge equal to inflow. This allowed the Pelton and Round Butte projects to move water from day to day and within the day. On an hourly basis, however, we ensured that the outflow from the Pelton Regulation Project was held constant.

PGE modeled specific aspects of the Deschutes system as follows:

When the individual units operate to provide power, the volume of water needed to produce that energy is based on the relationship between MW production and water utilization (i.e., historical inflow and outflow data is converted to power based on MW/flow efficiency curves).

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When the individual units provide Load Following or Regulation, the reduction in mechanical operating efficiency is based on the difference between: 1) the average mechanical operating efficiency over the range of operation when providing Load Following and Regulation, and 2) the point-mechanical operating efficiency. This was applied as an increased cost factor in the cost calculation.

For each hour, the model calculated the volume of water utilized as well as the resulting impact to pond elevations – both upstream and downstream.

When the plants provide Spinning and Non-Spinning Reserves, there is a check to ensure that water exists in the upstream pond and space exists in the downstream pond to support the reserve operation for the entire hour.

For the one week optimization with one-hour time steps, generation and spill are allowed at each project as long as the following operating constraints are met in each hour:

- Outflow at Pelton Regulating Plant equals Round Butte inflow;
- Hourly pond elevations are within project minimum and maximum allowable elevations;
- Unit minimum generation meets but does not exceed maximum capacity.

5.4.8 *General Constraints for Thermal Plants Providing Ancillary Services*

PGE's Beaver plant is the primary thermal resource for ancillary services in Phase 2 of the Wind Integration model, with the plant available in simple cycle and combined cycle modes. In simple cycle, Beaver has a 5 MW minimum production level and a 55 MW maximum output for each hour per turbine. Within each hour, the Beaver turbines are free to move between the minimum and maximum, although the number of turbines available at any hour is determined by the designated scheduled outage rate. When operating in combined cycle mode (if economic, per model criteria), Beaver is not available as a simple cycle resource. Consequently, the maximum movement for available gas turbines is between 40 MW and 55 MW.



A secondary thermal resource for ancillary services is PGE's Port Westward duct burner. This resource can fluctuate between zero and 25 MW, and is available only when Port Westward is operating. As with the Beaver plant, an operating efficiency curve converts fuel to MW production.

Finally, for hydro and thermal plants that provide ancillary services, generation was limited to what can be provided in 10 minutes for spinning reserves. For example, if a plant can ramp three MW per minute, then the model allows 30 MW ramping over 10 minutes, even if the plant has 100 MW of available capacity.

5.5 MODELING APPROACH

With the assistance of two external consultants, PGE has developed a mixed integer programming model to assess the incremental operating (non-capital) costs of integrating wind resources into PGE's system. The model is a "constrained optimization model" with an objective function to minimize total system operating costs given a set of operational constraints. These operational constraints include plant dispatch requirements (minimum plant up-times, minimum plant generation requirements, etc.) and system requirements (Contingency Reserves [Spinning and Non-Spinning], Regulation, Load Following, etc.). The model allocates the total system requirements (e.g., total Spinning Reserve requirements) to the individual generators to minimize overall system costs.

By altering the constraints in the model, the costs of different operational policies are isolated. For example, if the regulation constraint is relaxed (removed), the cost of providing regulation is calculated as the difference in the cost from a model run that includes the constraint and the cost from a model run that excludes the constraint. Similar types of analyses are possible for other ancillary services: Spinning Reserves, Non-Spinning Reserves and Load Following. The effect of changing constraints on least-cost plant dispatch can also be determined.

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Currently the model optimizes plant dispatch and system operation for a single year (2014). Given the heavy computational requirements, each of the 52 weeks is run separately on an hourly basis although functions for reserve requirements are developed from 10-minute data.

Phase 2 of the Wind Integration Study considers four elements of wind integration costs:

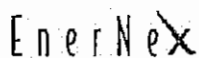
- Costs resulting from Day-Ahead wind forecast error (Day-Ahead uncertainty)
- Costs resulting from Hour-Ahead wind forecast error (Hour-Ahead uncertainty)
- Costs incurred in using generation resources to follow the wind generation trend within the hour (Load Following)
- Costs incurred in using generation resources to follow Within-Hour departures of wind generation from the wind generation schedule (Regulation)

In order to distinguish between these four categories of costs within the model, the model is run in three stages corresponding to Day-Ahead, Hour-Ahead, and Within-Hour. At each stage, PGE's system is optimized subject to the operational constraints relevant at that stage. Commitments made in prior stages (e.g., purchase or sale commitments) are carried forward to the next stage as constraints. Total system operating costs at the third stage are used in assessing the costs of wind integration.

The model incorporates explicit reserves (reserved generation capacity) to address:

- 1) the Hour-Ahead uncertainty of wind;
- 2) generation resource requirements for Within-Hour Load Following for wind; and
- 3) generation resource requirements for Within-Hour Regulation for wind.

As explained previously, an element of "integration cost" is identified by running the model with and without the reserve constraint and observing the difference in total system operating costs between the two model runs.



No reserves are specified in the model to address Day-Ahead wind uncertainty. The cost of Day-Ahead uncertainty is identified by comparing total system costs from a model run *with* Day-Ahead forecast error, to total system costs from a model run *without* Day-Ahead forecast error. Details of the cost estimation methods and results are presented in Section 6.1.

For defining the time basis for each Hour-Ahead wind forecast, PGE followed the TRC recommendation of using the average wind production for the 10 minute period ending at 20 minutes after the hour. As described earlier, the information for the Hour-Ahead forecast when using ten-minute averages, can come no later than 20 minutes after the hour since, operationally, schedules must be entered at 30 minutes after the hour. Initially, PGE modeled the Hour-Ahead forecast as the average of the *two* 10-minute wind generation data points between the top of the hour and 20 minutes after the hour. After much analysis and discussion between TRC members, EnerNex and PGE, it was decided that the single 10-minute persistence forecast was the most appropriate proxy for the Hour-Ahead data. This is because the mean absolute error of the persistence forecast for 20 minutes past the previous hour was less than the average of the value at 10 minutes and 20 minutes past the hour.

5.5.1 *Details of Modeling Approach and Results*

As discussed above, the costs of wind integration are identified by comparing total system operating costs, from a model run that incorporates the system requirements for wind integration, to total system operating costs, from a model run that excludes the system requirements for wind integration. We have segmented the costs of wind integration ~~into~~ five components:

- The “total” cost of wind integration including the costs due to Day-Ahead uncertainty, Hour-Ahead uncertainty, Within-Hour Load Following for wind, and Within-Hour Regulation for wind.

- The cost of wind integration due to Day-Ahead uncertainty alone.



The cost of wind integration due to Hour-Ahead uncertainty alone.

The cost of wind integration due to Within-Hour Load Following for wind alone.

The cost of wind integration due to Within-Hour Regulation for wind alone.

To compute these component costs, the model is run incorporating all system requirements for wind integration. Next, the model is run with one or more of the wind integration requirements removed. The cost of the second run will be lower than the first run and this cost savings represents the cost of wind integration for the requirement that is absent in the second model run. To derive each of the cost components, six model runs are required, which are summarized in Table 7, below. For instance, to determine the cost of Hour-Ahead uncertainty, the difference between Run 3 and Run 1 is calculated. The overall cost of wind integration is the difference between Run 7 and Run 1. These calculations are summarized in Table 9 (see Section 6.1, below), which also includes the resulting cost estimates expressed on a dollar per MWh basis.

Additional details on the model runs are provided in Table 8 (with definitions for abbreviations following the table). This table details the constraints placed on the model at each of the three stages. For example, for Run 1 and the “Day-Ahead” stage, LF (W, L) indicates that the model incorporates reserves for Load Following for both wind and load. Similarly, R (W, L) indicates that the model includes reserves for Regulation for both wind and load, and UN (W, L) indicates that reserves have been included for both wind and load uncertainty. The rows labeled “Input” indicate the assumptions about hourly data for load and wind generation that apply to that stage in the model run.





Table 7: Model runs summarizing wind integration cost breakout

Identification	Description
RUN 1	PGE integrates Regulation, Load Following, Hour-Ahead and Day-Ahead Uncertainty of wind
RUN 2	N/A*
RUN 3	PGE doesn't Integrate Hour-Ahead Uncertainty of wind
RUN 4	PGE doesn't Integrate Load Following for wind
RUN 5	PGE doesn't Integrate Regulation for wind
RUN 6	PGE doesn't Integrate Day-Ahead Uncertainty of wind
RUN 7	PGE doesn't Integrate Load Following and Regulation for wind, Hour-Ahead and Day-Ahead Uncertainty of wind

* Run 2 was eliminated because, in testing, it provided no relevant information.

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Table 8: Model runs detailing wind integration cost breakout

Model Stage / Scenarios	Day-Ahead	Hour-Ahead	Within-Hour	Included Costs
RUN 1	<i>PGE Integrates All</i>			
Reserves	LF(W,L), R(W,L)	LF(W,L), R(W,L), UN(W,L)	LF(W,L), R(W,L)	R(L,W), LF(L,W), DA-UN(L,W), HA-UN(L,W)
Input	Day-Ahead Load and Wind Forecast	Hour-Ahead Load and Wind Forecast	"Actual" Load and Wind	
RUN 3	<i>PGE Doesn't Integrate HA-UN(W)</i>			
Reserves	LF(W,L), R(W,L)	LF(W,L), R(W,L), UN(L)	LF(W,L), R(W,L)	R(L,W), LF(L,W), DA-UN(L,W), HA-UN(L)
Input	Day-Ahead Load and Wind Forecast	Hour-Ahead Load and Wind Forecast	Actual Load and Hour-Ahead Wind	
RUN 4	<i>PGE Doesn't Integrate LF(W)</i>			
Reserves	LF(L), R(L,W),	LF(L), R(W,L), UN(W,L)	LF(L), R(W,L)	R(L,W), LF(L), DA-UN(L,W), HA-UN(L,W)
Input	Day-Ahead Load and Wind Forecast	Hour-Ahead Load and Wind Forecast	Actual Load and Wind	

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Model Stage Scenarios	Day-Ahead	Hour-Ahead	Within-Hour	Included Costs
RUN 5	PGE Doesn't Integrate R(W)			
Reserves	LF(L,W), R(L)	LF(W,L), R(L), UN(W,L)	LF(W,L), R(L)	R(L), LF(L,W), DA-UN(L,W), HA-UN(L,W)
Input	Day-Ahead Load and Wind Forecast	Hour-Ahead Load and Wind Forecast	Actual Load and Wind	
RUN 6	PGE Does Not Integrate DA-UN(W)			
Reserves	LF(L,W), R(L,W)	LF(L,W), R(L,W), UN(L,W)	LF(L,W), R(L,W)	R(L), LF(L,W), DA-UN(L,W), HA-UN(L,W)
Input	Day-Ahead Load and Hour-Ahead Wind Forecast	Hour-Ahead Load and Wind Forecast	Actual Load and Wind	
RUN 7	PGE Does Not Integrate LF(W),R(W),HA-UN(W) and DA-UN(W)			
Reserves	LF(L), R(L)	LF(L), R(L), UN(L)	LF(L), R(L)	R(L), LF(L), DA-UN(L),HA-UN(L)
Input	Day-Ahead Load and Actual-Wind Forecast	Hour-Ahead Load and Actual Wind Forecast	Actual Load and Wind	

Definitions for Table 8:

L = Load; W = Wind; LF = Load Following; R = Regulation; UN = Uncertainty;
DA = Day-Ahead; HA = Hour-Ahead;

5.6 CALCULATION FOR RESERVES AND UNCERTAINTY

The wind integration model accounts for three categories of reserves: Regulation, Load Following (including forecast error), and Contingency Reserves. The Contingency Reserve requirement is defined by the WECC (i.e., 5% for hydro and wind, and 7% for thermal resources) with requirements split equally between Spinning and Non-Spinning Contingency Reserves. The model simulates the different reserve requirements as hourly

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constraints for resource scheduling and dispatch across each of the three time horizons: Day-Ahead scheduling, Hour-Ahead scheduling and Real Time dispatch (Within-Hour). EnerNex provided PGE with a methodology for estimating regulation and load variability parameters for Day-Ahead, Hour-Ahead and Real Time (Within-Hour) scheduling, as well as the Hour-Ahead forecast error. Currently, however, PGE does not explicitly set aside reserves for Day-Ahead forecast error for either load or wind generation. Specific modeling for the reserves, by category and time frame, are described below.

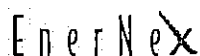
5.6.1 Regulation

The reserves held for Regulation are intended to cover “short time scale deviations” in scheduled wind generation and load. We define a “short time scale deviation” for wind to be a ten-minute deviation off a trend of ten-minute wind generation data. Regulation is split into the following sub-categories (as derived by EnerNex): 1) Regulation for load-only, and 2) Regulation for load and wind.

The Regulation for load-only is assumed to be one percent of the total load for a ten-minute average load data point. This assumption is per page 7 in the October 2010 NREL paper¹⁰, “for load-only the regulating reserve requirement was assumed to be 1% of the total load and assumed to be equal to three times the standard deviation of the load variability.”

The additional regulation requirement due to wind on the system was determined by calculating the amount of regulation necessary at a wind production level in an hour. The ten-minute deviations of actual wind from a trend are calculated and then sorted by wind production level (i.e., 0 MW to 850 MW separated into equal sets of ten – deciles). To determine the variability in each wind production decile, we took the standard deviation of the ten-minute wind deviation data points in that decile. Using those standard deviations of the wind deviations for each wind production decile, and the average wind

¹⁰ “Operating Reserves and Wind Power Integration: An International Comparison”, Milligan, Donohoo, Lew, Eln, and Kirby
National Renewable Energy Laboratory October 2010



production value of each decile, a least squares fit was generated to a quadratic polynomial. The quadratic function is then used to determine how much additional regulation is required due to wind at a particular production level of wind.

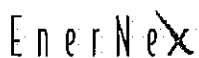
To calculate the regulation for load and wind, the October 2010 NREL paper again provided guidance: “since load and all wind variability on this timeframe were also considered to be independent of one another, the standard deviations of all wind and all load were then geometrically added together by calculating the square root of the sum of their squares.” Thus, analogous to the regulation for load-only calculation, three times the standard deviation of load and wind variability will be held back as the hourly regulation requirement for load and wind (for additional detail, see Appendix G).

5.6.2 Load Following and Hour-Ahead Forecast Error

The reserves held for Load Following are intended to cover a longer time scale representing 1) the Within-Hour trend of load and wind, and 2) forecast uncertainty in the Hour-Ahead time frame. The three components of Load Following reserves are calculated (per the EnerNex methodology) as follows:

Reserves are calculated in two steps. First, the difference in the maximum and minimum load in the hour is established as the range for load variability in the hour. Second, a PGE baseline was calculated by determining the percentage of the time that taking half of the hourly range of load variability in 2005 historical load data met the actual Load Following requirement for the hour. To be consistent with historical PGE operations, half of the hourly range for 2014 load is scaled to satisfy the PGE baseline percentage. This scaled hourly range is the Load Following for load-only reserves held back in the model. To keep the same level of reliability as when PGE integrated only load, additional reserves due to wind are added such that the baseline percentage is once again satisfied.

Additional Load Following requirement due to wind (perfect forecast) – the calculated reserves will be based on the ten-minute deviations of a load-net-wind



trend from the hourly average load-net-wind amount. If the ten-minute deviations exceed the amount of reserves held for load-only, then additional reserves are needed. The model determines the amount of additional reserves by wind production level based on the wind generation variability within an hour (using 2004-2006 NREL wind data). After the wind variability is determined for each hour, at each production level, the result is calibrated such that, when it is summed with the previously established Load Following for load-only requirement, the resulting hourly reserve requirement maintains the PGE baseline requirement.

Hour-Ahead forecast error due to wind – the calculated reserves are first based on the difference between the Hour-Ahead forecast of wind generation and the actual generation by production level of wind (based on the 2004-2006 NREL data). A new “forecasted” wind data stream is then created by adding the hourly forecast error to the corresponding hour’s 10 minute wind data. The new “forecasted” wind is also used to define a new load-net-wind forecast. Next, the model calculates 10-minute deviations from the hourly average load-net-wind amounts by subtracting the average from the “forecasted” load-net-wind trend. This result is calibrated such that, when it is summed with the previously established Load Following for load-only and the additional Load Following due to wind requirements, the resulting hourly reserve requirement maintains the PGE baseline requirement. Please note that the addition of the forecast error reserve requirement is only relevant for the Hour-Ahead time frame.

5.6.3 *Day-Ahead Scheduling*

In Day-Ahead scheduling, reserve predictions must be made for load variability and regulation for both load and wind generation. The Day-Ahead load forecast is input with a forecast error, but the model does not explicitly hold back reserves to cover the forecast error.



5.6.4 *Hour-Ahead Scheduling*

For Hour-Ahead scheduling, reserve predictions for the load variability and regulation from the Day-Ahead Scheduling step must be recalibrated to account for the Hour-Ahead load and wind generation forecast. Since PGE explicitly holds back reserves for forecast error in Hour-Ahead scheduling, additional reserves are calculated as follows:

Reserves to cover the load forecast error are derived from historical PGE information (i.e., 2005 load data escalated to 2014 levels, as described in Section 5.4.4.)

Additional reserves held to cover the wind generation Hour-Ahead forecast error are determined by the EnerNex methodology described above.

Plant dispatch is recalibrated from the Day-Ahead schedule to reflect the different reserve, wind generation, and load requirements.

5.6.5 *Real-Time Dispatch (Within-Hour)*

The forecast error reserve obligations that were established in the preceding Hour-Ahead scheduling step are released (where necessary) in the Real Time (Within-Hour) dispatch step, and the reserve requirements for load variability and regulation are recalibrated.

Plant dispatch is also recalibrated from the Hour-Ahead schedule to reflect different reserve, wind generation, and load requirements.

Consequently, in each stage of the simulation, (i.e., Day-Ahead, Hour-Ahead and Within-Hour), the calculated reserve requirements for Regulation, Load Following, and Contingency Reserves are factored into the model's optimization of dispatching generation, capacity, and market resources.

□

5.6.6 *Issues in Reserve Requirement Data Development*

As part of our model validation process, certain issues were discovered with the 2004-2006, 10-minute wind generation data from NREL. Resolution of these issues was

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coordinated and completed by consultation with the TRC. First, preliminary simulations indicated a Regulation reserve requirement that the TRC considered high. Their observations suggested that the source wind data displayed more 10-minute variability than the TRC would have expected. The following two sections describe these issues, the actions taken to address them, and the impact of the corrections. Note that all changes described below apply to the 10-minute wind generation data used to derive reserve requirements, but not the hourly wind generation values used in the production simulation.

2004 Wind Generation Data

EnerNex used 2004-2006 10-minute wind generation data to determine the functions that relate reserve requirements to production levels of wind. The 10-minute wind generation data (representing the output of a Siemens 2.3 MW unit at a particular wind speed) was developed as described in Section 4.1 and summarized below:

Develop Day-Ahead, Hour-Ahead and Actual wind datasets.

Identify the appropriate subset of the output of the NREL Western Wind Resource Database (WWRD) (i.e., 10 Vestas, 3 MW, V90 turbines at each of 32,043 sample locations) based upon the physical location of the two wind projects in the study.

Apply the power curve of a Siemens 2.3 MW wind turbine to the wind speeds from the WWRD subset to convert the wind speed to the corresponding Siemens 2.3 MW unit output data.

For modeling purposes (as noted above), two projects make up the 850 MW installed wind capacity assumption: 450 MW at Biglow Canyon and 400 MW to be installed at a nearby site. Following up on TRC concerns, PGE discovered an error in the conversion of the 2004 Vestas data to the wind speed data for the 450 MW plant, which produced a higher variability in the short-term deviations in wind generation data. After the data was corrected, PGE verified that 2004 was the only affected year, and the Regulation

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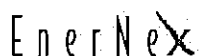


requirement (i.e., ancillary service cost) derived from the 2004-2006 wind data was reduced.

Seam Issue with NREL dataset

Per the “Western Dataset Irregularity”¹¹ the NREL Western Wind Data Set had certain irregularities related to the aggregation of the mesoscale wind speed data samples at the different test sites. 3-TIER, who was responsible for the mesoscale modeling, had to separate the wind speed data samples into approximately three-day blocks for data handling purposes. After they combined the three-day data sets into one combined data set they noticed that there was reduced short term variability at the “seams” of the data sets. They then used an algorithm to impart more short term variability at each seam, which seemed to work correctly at the test-site level, but when aggregated the data displayed excessive short term variability. The TRC recognized this issue by observing PGE’s high Regulation signal (short term variability) for the wind-penetration level. In consultation with the TRC, PGE removed the 24-hour period from hour 2200 on 1/1/2006 to hour 2150 on 1/2/2006. As a proxy for removing additional short-term variation introduced by the seam algorithm, a 24-hour period from the 2004-2006 data corresponding with every third day beginning with hour 2200 on 1/1/2006 was removed. Similarly, a 24-hour period beginning with hour 2200 on 12/31/2003 was removed.

¹¹ www.nrel.gov/wind/integrationdatasets/pdfs/western/2009/western_dataset_irregularity.pdf
- A description of the Western Wind Dataset Seam Irregularity.



6. SUMMARY AND CONCLUSIONS

6.1 COST SUMMARY

PGE estimates that it would cost approximately \$11.04 per MWH (in 2014\$) to self-integrate 850 MW of wind generation in 2014 using existing PGE and contract resources. This result is a function of several factors including the assumptions and modeling techniques detailed above. In particular, the study reflects the existing limitation that the only current resources certain to be available for Dynamic Capacity are PGE's hydro projects with automatic generation control and the Beaver plant in both simple cycle and combined cycle mode, as applicable. Another significant factor is the impact of this high penetration level of wind generation into PGE's system, which has a current generation resource mix that remains "short" of total load. This places considerable demand on existing resources to provide reserves rather than energy and increases PGE's reliance on market purchases to cover Day-Ahead and Hour-Ahead uncertainty.

Specific components of PGE's estimated integration costs are summarized in Table 9, the derivation of which is described in Section 5.5, above. The sum of the components (Identifiers B through E) will not equal the total (Identifier A) because the interactive effect of the components and resultant resource dispatch within the model will vary between the runs.

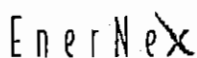


Table 9: Integration costs by component, year 2014

Identifier	Cost Saving For PGE	Run Delta Measures:	Cost/MWh (\$ 2014)
A	RUN 7 – RUN 1	Cost of Wind Integration Cost for Day-Ahead Uncertainty, Hour-Ahead Uncertainty, Load Following and Regulation	\$11.04
B	RUN 6 – RUN 1	Cost for Day-Ahead Uncertainty	\$3.44
C	RUN 3 – RUN 1	Cost for Hour-Ahead Uncertainty	\$4.59
D	RUN 4 – RUN 1	Cost for Load Following	\$1.03
E	RUN 5 – RUN 1	Cost for Regulation	\$1.50

6.2 CONCLUSIONS

PGE believes that Phase 2 of the Wind Integration Study accurately simulates the constraints associated with existing conditions and available resources to estimate the costs attributed to the self-integration of 850 MW of wind generation in 2014. The study has been subject to regular and rigorous reviews from EnerNex, the TRC, and major participants in PGE's 2009 IRP, Docket No. LC 48. The TRC considers this study to be technically sound and have provided their unanimous endorsement. Regional stakeholders and PGE's Wind Integration Study Project Team have participated in three detailed public presentations regarding the intricacies of the study. The stakeholders have been provided the opportunity to examine, in detail, the methodology of the study and the results. They have also had the opportunity to comment on the methodology and make recommendations. In short, Phase 2 of the Wind Integration Study has been vetted in accordance with Commission Order No. 10-457.

Although the estimated costs for self-integration appear somewhat high compared to other utilities, they do not significantly exceed the range of costs found among utilities in the Pacific Northwest given the limitations and constraints discussed above. It must also



be noted that the results of the study can vary materially, if alternative or additional flexible resources are available for ancillary services (see Section 6.3.3, below). With the availability of more efficient balancing resources that can provide Dynamic Capacity, PGE's wind integration model cost estimates are well within the range found in the Northwest. In addition, it is evident that utilities in the Northwest estimate higher than average costs compared to other regions, particularly those with regional transmission organizations. This may indicate the effects on other utilities' study results from the benefits of organized markets with independent system operators compared to study results from utilities operating in bilateral markets only such as in the Pacific Northwest. We summarize this effect in Figure 9, below.

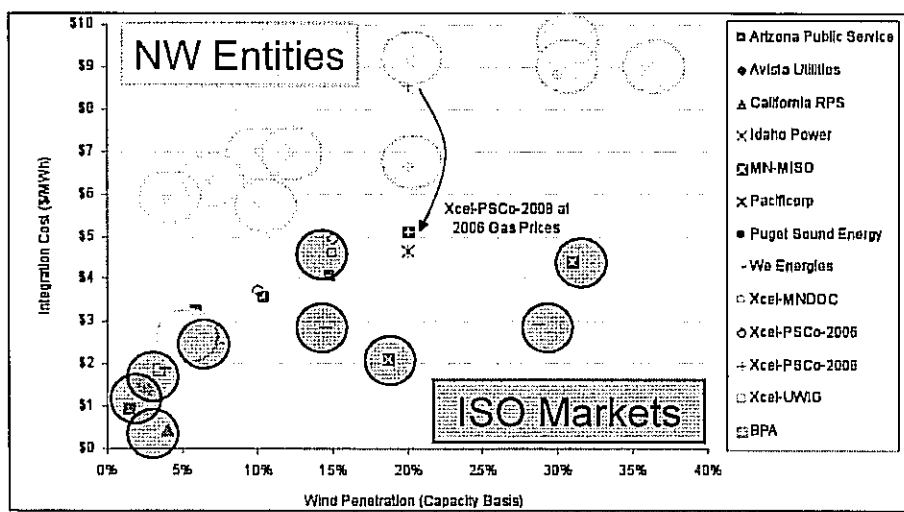


Figure 9: Cost by utility in the WECC

6.3 FUTURE POTENTIAL REMEDIATION

6.3.1 30-Minute Scheduling

In the Pacific Northwest, the Real Time energy market trades on an hourly basis and energy is purchased in one hour blocks. PGE and other Balancing Authorities (BAs)

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must manage any change in generation or system load across generators they control based on this time horizon. The current modeling methodology assumes one-hour energy markets, consistent with current regional practice. Moving to 30-minute scheduling would presumably reduce the amount of reserves needed to cover system load and generation movement due to the variability of wind within the shorter window. In a 30-minute market, BAs would be able to make energy transactions for a shorter time period. For this market to be viable, however, the transmission scheduling would need to migrate to the same time horizon. In addition, significant model changes will need to be made to PGE's current model to accommodate 30-minute scheduling, which include, but are not limited to: 1) restructuring the load forecast error calculation, 2) restructuring the incremental wind reserve calculations, and 3) modifying the hydro dispatch logic.

6.3.2 *Energy Imbalance Market*

Currently, the WECC is considering a proposal to create an Energy Imbalance Market (EIM), which is a hybrid of a bilaterally based market and a centrally cleared market model. In the fully implemented EIM, parties must enter the market balanced between their energy and their load as demonstrated via schedules. If their generators do not perform as expected, or their load deviates from their projections, the EIM will provide the difference via a security constrained dispatch. Market participants will either pay or be paid for the difference between their actuals and schedules (i.e., their energy imbalance, paid to or by the EIM).

The expectation is that the EIM might be implemented in the next five to ten years. PGE will explore modifying a future Wind Integration Study to calculate system costs should PGE decide to participate in the EIM.

6.3.3 *Additional Flexible Generation*

As stated earlier, the cost for wind integration is dependent on the characteristics of the system available to provide the moment-to-moment movement that is required to keep

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generation and system load in balance. If additional flexible resources are added to the PGE system, then the cost to provide wind integration will change. PGE is currently in the process of seeking up to 200 MW of flexible resources in its Request for Proposals for Capacity Resources (Docket UM 1535). It is expected that these new resources will be added to the portfolio in the 2013-2015 timeframe.

In order to further test the validity of its Phase 2 wind integration study, PGE revised the model assumptions to include a new efficient thermal resource with sufficient flexibility to provide Dynamic Capacity. For this purpose, and in accordance to what was assumed in the 2009 IRP preferred portfolio, we assumed PGE could employ two, 100 MW, LMS100, simple cycle combustion turbines along with the existing hydro resources and Beaver plant for ancillary services. The results from this secondary set of model runs is that PGE's estimated total cost for self-integration would be approximately \$9.15 per MWh (in 2014\$) after incorporating the additional resource.

We note that this modified total cost is within the range of wind integration estimates for Northwest utilities identified in Figure 9 above. This provides additional validation for the reasonableness of the model results. Specific wind integration cost estimates, which incorporate the LMS100 resource, are summarized in Table 10, below.

□ □



Table 10: Integration costs by component with two additional LMS100 SCCTs

Identifier	Cost Saving For PGE	Run Delta Measures:	Cost/MWh (\$2014)
A	RUN 7 – RUN 1	Cost of Wind Integration Cost for Day-Ahead Uncertainty, Hour-Ahead Uncertainty, Load Following and Regulation	\$9.15
B	RUN 6 – RUN 1	Cost for Day-Ahead Uncertainty	\$3.61
C	RUN 3 – RUN 1	Cost for Hour-Ahead Uncertainty	\$2.86
D	RUN 4 – RUN 1	Cost for Load Following	\$0.75
E	RUN 5 – RUN 1	Cost for Regulation	\$0.98

6.4 NEXT STEPS FOR PGE'S WIND INTEGRATION STUDY

Because variable generation resources place unique demands on system operation and reliability, PGE reiterates that understanding the physical needs and costs of wind integration is an ongoing effort. While PGE has not yet formulated a formal list of next steps, or tried to prioritize them, the following items are presented for further consideration. PGE's Wind Integration Study Project Team welcomes suggestions and feedback from stakeholders regarding prioritization or other study items may not be listed. In this regard, PGE wishes to recognize the suggestions that the RNP submitted in their formal comments to this Study, which are incorporated below. Future Phases of PGE's Wind Integration Study may include:

- Evaluating the net impact of moving to 30-minute scheduling;

- Evaluating the net impact of developing and operating a regional energy imbalance market;

- The value of adding additional flexible gas generation;

- How wind integration costs change with a higher or lower amount of variable resources to integrate;

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Understanding the impact of a poor water year;
Understanding the impact of a higher natural gas price; and,
Exploring changes to scheduled maintenance outages.

The PGE Wind Integration Study Project Team will continue to evaluate and improve its modeling tools and software, as needed, and will also continue to monitor the industry for Wind Integration Study best practices.

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7. LIST OF APPENDICES

- Appendix A Principles for Technical Review Committee Involvement in Studies of Wind Integration into Electric Power Systems
- Appendix B TRC Endorsement
- Appendix C RNP Comments
- Appendix D PGE Response to RNP Comments
- Appendix E Power Point Presentations from Public Meetings
- Appendix F Wind Integration Report by MBA Team from the University of Oregon
- Appendix G Detailed Reserve Calculations

**Portland General Electric Company
Effective**

**SCHEDULE 211
QUALIFYING FACILITY 10 MW or LESS
RENEWABLE AVOIDED COST POWER PURCHASE INFORMATION**

PURPOSE

To provide information about Renewable Avoided Costs, Standard Renewable Power Purchase Agreements (PPA) and Negotiated Renewable PPAs, and power purchase prices for power delivered by a Qualifying Facility (QF) to the Company with nameplate capacity of 10,000 kW (10MW) or less.

AVAILABLE

To owners of QFs making sales of eligible electricity and environmental attributes, including renewable energy certificates (REC) to the Company in the State of Oregon (Seller).

APPLICABLE

For power purchased from small power production or cogeneration facilities that meet the definition of QF in 18 Code of Federal Regulations (CFR) Section 292, meet the eligibility requirements described herein and make energy available for Company purchase and deliver to the Company's system pursuant to a Standard Renewable PPA.

ESTABLISHING CREDITWORTHINESS

The Seller must establish creditworthiness prior to service under this schedule. For a Standard Renewable PPA, a Seller may establish creditworthiness with a written acknowledgment that it is current on all existing debt obligations and that it was not a debtor in a bankruptcy proceeding within the preceding 24 months. If the Seller is not able to establish creditworthiness, the Seller must provide security as deemed sufficient by the Company as set out in the applicable Standard Renewable PPA.

POWER PURCHASE INFORMATION

A Seller may call the Power Production Coordinator at (503) 464-8000 to obtain more information about being a Seller or how to apply for service under this schedule.

RENEWABLE PPA

In accordance with terms set out in this schedule and the Commission's Rules as applicable, the Company will purchase Net Output from Seller. Net Output shall mean the Energy no greater than the Nameplate Rating expressed in kWhs produced by the Facility, less station and other onsite use and less transformation and transmission losses. Net Output does not include any environmental attributes, imbalance power, or power from an integrating entity.

A Seller must execute a Renewable PPA with the Company prior to delivery of power to the Company. The agreement will have a term of up to 20 years.

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SCHEDULE 211 (Continued)

RENEWABLE PPA (Continued)

A QF with a nameplate capacity rating of 10 MW or less as defined herein may elect the option of a Standard Renewable PPA.

Any Seller may elect to negotiate a Renewable PPA with the Company. Such negotiation will comply with the requirements of the Federal Energy Regulatory Commission (FERC), and the Commission including the guidelines in Order No. 07-360, and Schedule 212. Negotiations for power purchase pricing may use the applicable filed Renewable Avoided Costs in effect at that time as a starting point for negotiations. Avoided Costs for Negotiated PPAs may be updated and will not be final until execution of a Renewable PPA.

STANDARD RENEWABLE PPA (Nameplate capacity of 10 MW or less)

A Seller choosing a Standard Renewable PPA will complete all informational and price option selection requirements in the applicable Standard Renewable PPA and submit the executed Agreement to the Company prior to service under this schedule. The Standard Renewable PPA is available at www.portlandgeneral.com. The available Standard Renewable PPAs are: Standard Renewable In System Non-Variable Power Purchase Agreement, Standard Renewable Off System Non-Variable Power Purchase Agreement, Standard Renewable In System Variable Resource Power Purchase Agreement, and Standard Renewable Off System Integrated Variable Resource Power Purchase Agreement. The Standard PPAs applicable to Variable Resources are available only to QFs utilizing wind or solar as the primary motive force. Standard Renewable PPAs are not available for QFs with cogeneration facilities or QFs utilizing hydro as the primary motive force.

GUIDELINES FOR 10 MW OR LESS FACILITIES ELECTING STANDARD RENEWABLE PPA

In order to execute a Standard Renewable PPA the Seller must complete all of the general project information requested in the applicable Standard Renewable PPA.

When all information required in the applicable Standard Renewable PPA has been received in writing from the Seller, the Company will respond within 15 business days with a draft Standard Renewable PPA.

The Seller may request in writing that the Company prepare a final draft Standard Renewable PPA. The Company will respond to this request within 15 business days. In connection with such request, the QF must provide the Company with any additional or clarified project information that the Company reasonably determines to be necessary for the preparation of a final draft Standard Renewable PPA.

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SCHEDULE 211 (Continued)

GUIDELINES FOR 10 MW OR LESS FACILITIES (Continued)

When both parties are in full agreement as to all terms and conditions of the draft Standard Renewable PPA, the Company will prepare and forward to the Seller a final executable version of the agreement within 15 business days. Following the Company's execution, a completely executed copy will be returned to the Seller. Prices and other terms and conditions in the PPA will not be final and binding until the Standard Renewable PPA has been executed by both parties.

OFF SYSTEM RENEWABLE PPA

A Seller with a facility that interconnects with an electric system other than the Company's electric system may enter into a Renewable PPA with the Company after following the applicable off-system Standard or Negotiated PPA guidelines set forth above and making the arrangements necessary for transmission of power to the Company's system. Off System PPAs are available for non-variable resources and variable resources for which the QF provides or pays a third party to provide integration to the Company's service territory. PGE is not responsible for Seller's transmission costs, including ancillary services such as imbalance service or integration costs provided by Seller or a third party.

BASIS FOR POWER PURCHASE PRICE

RENEWABLE AVOIDED COST SUMMARY

The power purchase rates are based on the Company's Renewable Avoided Costs. Avoided Costs are defined in 18 CFR 292.101(6) as "the incremental costs to an electric utility of electric energy or capacity or both which, but for the purchase from the qualifying facility or qualifying facilities, such utility would generate itself or purchase from another source."

The Renewable Avoided Costs as listed in Tables 1, 2, 3, and 4 below include monthly On- and Off-Peak prices.

ON-PEAK PERIOD

The On-Peak period is 6:00 a.m. until 10:00 p.m., Monday through Saturday.

OFF-PEAK PERIOD

The Off-Peak period is 10:00 p.m. until 6:00 a.m., Monday through Saturday, and all day on Sunday.

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SCHEDULE 211 (Continued)

PRICING FOR STANDARD RENEWABLE PPA

Renewable Avoided Costs are based on forward market price estimates through December 2014, the period of time during which the Company's Renewable Avoided Costs are associated with incremental purchases of Energy and capacity from the market. Avoided integration costs are deducted from the prices for in system variable resources. For the period 2015 through 2031, the Renewable Avoided Costs reflect the fully allocated costs of a wind plant identified in the Company's Updated Integrated Resource Plan (IRP) including capital costs and wheeling. Integration is reflected in the value for non-variable resources and off system variable resources where the the QF must provide or pays a third party to provide integration to the Company's service territory.

Pricing represents the purchase price per MWh the Company will pay for electricity delivered to a Point of Delivery (POD) within the Company's service territory pursuant to a Standard Renewable PPA up to the Net Output of the QF in any hour.

The Standard Renewable PPA pricing will be based on the Renewable Avoided Cost in effect at the time the agreement is executed.

The pricing options include two Fixed Rate Options.

1) Renewable Fixed Price for an in System Variable Resource

The Renewable Fixed Price for an In System Variable Resource is based on Renewable Avoided Costs.

This option is available for a maximum period of 15 years immediately following the effective date of the Standard Renewable PPA. Sellers with a PPA term exceeding 15 years will make a one time election at execution to select a Market-Based Option from Schedule 201 for all years up to five after the initial 15 years immediately following the effective date of the Standard Renewable PPA. Under the Renewable Fixed Price for a Variable Resource without Integration, prices will be as established at the time the Standard Renewable PPA is executed and will be equal to the Renewable Avoided Costs in Tables 1 and 2 effective at execution for a period of up to 15 years immediately following the effective date of the Standard Renewable PPA.

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SCHEDULE 211 (Continued)

PRICING FOR STANDARD RENEWABLE PPA (Continued)

TABLE 1												
Renewable Avoided Costs												
Fixed Price Option for an In System Variable Resource												
On-Peak Forecast (\$/MWH)												
Year	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
2012	24.21	21.92	19.88	19.37	16.32	13.01	25.74	29.56	27.79	26.00	28.29	31.86
2013	31.18	30.17	28.13	24.56	21.25	18.70	35.52	39.85	37.82	34.24	34.75	38.57
2014	33.88	32.78	30.59	26.76	23.19	20.46	38.54	43.20	41.02	37.17	37.71	41.83
2015	83.87	84.24	84.43	85.73	92.91	96.74	89.67	88.81	85.48	84.10	85.03	84.09
2016	86.48	86.47	85.78	86.48	91.60	92.55	90.39	89.15	86.95	86.73	86.71	85.58
2017	88.44	88.50	87.32	87.63	90.45	90.36	90.48	90.03	88.28	88.73	88.55	87.29
2018	89.74	90.40	89.07	89.76	92.13	91.20	92.45	92.05	90.47	90.02	89.80	89.19
2019	91.60	92.06	90.94	91.09	94.39	93.92	93.84	93.53	92.65	91.60	91.51	91.22
2020	93.62	93.60	92.70	93.24	97.01	95.95	95.58	95.44	93.92	92.78	93.77	92.57
2021	95.39	95.66	93.89	95.15	98.49	97.60	96.93	97.53	95.75	94.57	96.10	94.54
2022	97.45	97.30	95.07	97.11	100.59	99.39	98.86	98.82	97.53	96.35	98.02	96.33
2023	99.63	99.12	96.80	99.23	102.10	101.24	100.83	100.40	99.42	98.06	100.07	98.77
2024	101.12	101.30	99.00	101.37	104.56	103.37	103.24	102.93	102.71	99.91	101.09	101.24
2025	103.08	103.46	100.90	103.65	107.68	106.30	105.19	105.34	104.38	101.76	103.12	102.71
2026	105.82	105.43	103.73	106.28	111.48	107.41	107.42	107.89	107.56	103.98	106.12	105.02
2027	107.80	107.29	105.36	107.84	114.81	109.45	109.02	110.70	109.35	106.05	107.56	107.00
2028	109.98	108.76	106.39	110.32	116.80	111.12	111.95	111.96	110.94	108.59	109.84	108.93
2029	111.96	111.69	108.59	112.53	124.19	114.22	114.30	114.31	114.36	110.45	111.39	111.26
2030	114.25	113.91	111.26	114.62	127.63	118.35	115.84	115.70	117.31	112.51	113.16	113.22
2031	116.21	115.63	113.74	117.63	129.93	122.00	117.86	118.95	119.20	114.76	116.04	115.54

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SCHEDULE 211 (Continued)

PRICING FOR STANDARD RENEWABLE PPA (Continued)

TABLE 2												
Renewable Avoided Costs												
Fixed Price Option for an In System Variable Resource												
Off-Peak Forecast (\$/MWH)												
Year	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
2012	20.90	18.10	15.81	13.51	5.36	0.00	13.51	18.86	20.91	21.92	23.70	26.51
2013	25.84	24.82	22.27	16.66	7.49	0.36	19.98	25.84	28.39	28.13	27.87	30.68
2014	26.79	25.74	23.10	17.30	7.82	0.44	20.74	26.79	29.44	29.16	28.90	31.80
2015	68.65	68.48	68.69	66.21	57.93	51.15	60.63	63.14	66.56	68.34	68.07	68.35
2016	69.79	69.19	69.90	69.06	63.29	60.75	64.83	65.23	68.41	69.48	68.73	70.18
2017	70.61	70.01	71.24	71.76	66.91	67.20	68.02	67.49	70.04	70.24	69.67	72.07
2018	71.42	70.94	72.36	72.44	68.12	69.55	68.88	68.23	71.55	71.05	71.47	73.02
2019	72.98	72.77	74.74	73.81	69.12	71.14	69.89	70.32	72.72	72.98	73.23	74.38
2020	73.87	74.18	76.00	74.53	70.53	70.81	71.16	72.53	73.59	75.03	74.80	75.32
2021	76.16	75.24	77.24	75.62	72.22	72.27	73.04	73.44	74.80	77.19	74.34	76.34
2022	77.17	76.78	79.42	76.74	73.18	73.61	75.38	74.23	76.16	78.56	75.48	77.68
2023	78.09	78.15	80.90	78.76	73.57	74.94	76.57	75.92	77.43	80.09	76.55	79.18
2024	78.88	78.95	82.66	78.70	74.11	77.33	75.95	76.38	78.14	80.55	79.08	79.82
2025	80.19	80.17	84.07	79.57	73.83	77.46	77.28	78.44	78.57	82.03	81.43	80.71
2026	80.51	81.57	84.39	80.05	74.56	78.49	78.29	79.11	78.30	83.04	81.56	81.61
2027	83.19	83.17	85.31	82.06	74.30	79.86	80.25	79.52	80.00	85.42	82.45	83.04
2028	84.48	85.20	88.14	84.27	73.74	81.80	81.99	80.43	82.05	86.25	83.54	85.81
2029	84.76	85.72	89.43	85.59	67.84	81.86	83.12	81.52	83.30	86.86	85.73	86.97
2030	86.00	87.06	91.18	85.68	67.48	82.48	83.80	83.99	83.77	88.42	87.68	88.69
2031	87.79	89.17	92.31	86.03	68.79	82.15	85.50	85.69	83.89	89.80	89.60	88.72

Under the Fixed Price Option, the Company will pay Seller the Off-Peak Avoided Cost pursuant to Table 2 for: (a) all Net Output delivered prior to the Commercial Operation Date; (b) all Net Output deliveries greater than Maximum Net Output in any PPA Year; (c) any generation subject to and as adjusted by the provisions of Section 4.3 of the Standard PPA; and (d) Net Output delivered in the Off-Peak Period. The Company will pay the Seller the On-Peak Avoided Cost pursuant to Table 1 for all other delivered Net Output. (See the Standard Renewable PPA for defined terms.)

2) Renewable Fixed Price for a Non-variable Resource or an Off System Integrated Variable Resource

The Renewable Fixed Price for a Firm Resource or an Integrated Variable Resource is based on Renewable Avoided Costs plus avoided integration costs. This option is available for non-variable resources and variable resources for which the QF provides or pays a third party to provide integration to the Company's service territory

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SCHEDULE 211 (Continued)

PRICING FOR STANDARD RENEWABLE PPA (Continued)

This option is available for a maximum period of 15 years immediately following the effective date of the Standard Renewable PPA. Sellers with a PPA term exceeding 15 years will make a one time election at execution to select a Market-Based Option from Schedule 201 for all years up to five in excess of the initial 15 years immediately following the effective date of the Standard Renewable PPA. Under the Renewable Fixed Price for a Firm Resource or an Integrated Variable Resource, prices will be as established at the time the Standard Renewable PPA is executed and will be equal to the Renewable Avoided Costs in Tables 3 and 4 effective at execution for a period of up to 15 years immediately following the effective date of the Standard Renewable PPA.

TABLE 3												
Renewable Avoided Costs												
Fixed Price Option for a Non-variable Resource or an Off System Integrated Variable Resource												
On-Peak Forecast (\$/MWH)												
Year	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
2012	33.04	30.74	28.71	28.20	25.14	21.83	34.56	38.39	36.61	34.82	37.11	40.68
2013	40.17	39.15	37.11	33.55	30.23	27.69	44.50	48.83	46.80	43.23	43.74	47.56
2014	43.03	41.93	39.74	35.91	32.34	29.61	47.69	52.35	50.17	46.32	46.86	50.98
2015	90.10	90.50	90.70	92.10	99.81	103.92	96.32	95.40	91.82	90.34	91.34	90.34
2016	92.89	92.87	92.13	92.88	98.38	99.40	97.08	95.75	93.39	93.15	93.13	91.92
2017	94.98	95.06	93.78	94.12	97.14	97.05	97.18	96.70	94.81	95.30	95.10	93.75
2018	96.39	97.09	95.66	96.40	98.95	97.95	99.29	98.86	97.16	96.68	96.45	95.79
2019	98.37	98.86	97.65	97.82	101.36	100.85	100.77	100.43	99.49	98.37	98.27	97.96
2020	100.53	100.51	99.55	100.12	104.17	103.04	102.64	102.49	100.86	99.63	100.69	99.41
2021	102.43	102.72	100.82	102.18	105.76	104.81	104.08	104.73	102.82	101.55	103.19	101.52
2022	104.64	104.48	102.09	104.28	108.02	106.73	106.16	106.11	104.73	103.47	105.26	103.44
2023	106.98	106.44	103.95	106.56	109.64	108.71	108.28	107.81	106.76	105.30	107.45	106.06
2024	108.59	108.77	106.31	108.85	112.28	111.00	110.86	110.53	110.30	107.29	108.55	108.71
2025	110.69	111.10	108.35	111.30	115.63	114.15	112.95	113.12	112.09	109.27	110.73	110.29
2026	113.63	113.21	111.38	114.12	119.71	115.34	115.35	115.85	115.50	111.66	113.95	112.77
2027	115.76	115.22	113.14	115.80	123.29	117.53	117.07	118.87	117.42	113.88	115.50	114.90
2028	118.10	116.79	114.25	118.46	125.42	119.32	120.21	120.23	119.13	116.60	117.95	116.98
2029	120.23	119.93	116.60	120.83	133.35	122.65	122.74	122.75	122.80	118.60	119.62	119.48
2030	122.69	122.32	119.47	123.09	137.05	127.08	124.39	124.24	125.97	120.81	121.52	121.57
2031	124.79	124.17	122.13	126.32	139.52	131.01	126.56	127.74	128.00	123.23	124.61	124.07

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SCHEDULE 211 (Continued)

PRICING FOR STANDARD RENEWABLE PPA (Continued)

TABLE 4												
Renewable Avoided Costs												
Fixed Price Option for a Non-variable Resource or an Off System Integrated Variable Resource												
Off-Peak Forecast (\$/MWH)												
Year	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
2012	29.72	26.92	24.63	22.34	14.18	6.80	22.34	27.69	29.73	30.74	32.53	35.33
2013	34.82	33.80	31.25	25.65	16.48	9.34	28.96	34.82	37.38	37.11	36.86	39.66
2014	35.94	34.89	32.25	26.45	16.97	9.59	29.89	35.94	38.59	38.31	38.05	40.95
2015	73.74	73.57	73.78	71.12	62.23	54.94	65.13	67.82	71.50	73.42	73.12	73.42
2016	74.95	74.31	75.08	74.17	67.98	65.25	69.63	70.06	73.47	74.62	73.82	75.37
2017	75.84	75.19	76.52	77.07	71.86	72.17	73.06	72.49	75.23	75.44	74.83	77.41
2018	76.71	76.19	77.72	77.80	73.17	74.70	73.98	73.28	76.85	76.31	76.76	78.43
2019	78.37	78.15	80.25	79.26	74.23	76.40	75.05	75.51	78.09	78.37	78.64	79.87
2020	79.33	79.65	81.61	80.03	75.74	76.04	76.41	77.88	79.02	80.57	80.32	80.88
2021	81.78	80.79	82.94	81.21	77.55	77.61	78.43	78.86	80.33	82.89	79.82	81.98
2022	82.87	82.45	85.28	82.40	78.58	79.04	80.94	79.71	81.79	84.36	81.05	83.41
2023	83.86	83.92	86.88	84.58	79.00	80.47	82.22	81.53	83.15	86.00	82.20	85.03
2024	84.70	84.78	88.76	84.51	79.58	83.03	81.56	82.02	83.91	86.50	84.92	85.71
2025	86.11	86.09	90.28	85.44	79.28	83.18	82.98	84.24	84.37	88.08	87.45	86.67
2026	86.45	87.59	90.62	85.96	80.06	84.29	84.07	84.95	84.08	89.18	87.58	87.64
2027	89.34	89.31	91.61	88.12	79.79	85.76	86.18	85.39	85.90	91.73	88.53	89.17
2028	90.72	91.49	94.65	90.49	79.18	87.84	88.04	86.37	88.11	92.61	89.71	92.14
2029	91.02	92.04	96.04	91.91	72.84	87.90	89.26	87.53	89.45	93.27	92.06	93.40
2030	92.35	93.49	97.91	92.01	72.46	88.57	89.99	90.19	89.96	94.94	94.16	95.24
2031	94.27	95.75	99.12	92.38	73.86	88.22	91.82	92.02	90.08	96.43	96.21	95.27

Under the Fixed Price Option, the Company will pay Seller the Off-Peak Avoided Cost pursuant to Table 4 for: (a) all Net Output delivered prior to the Commercial Operation Date; (b) all Net Output deliveries greater than Maximum Net Output in any PPA Year; (c) any generation subject to and as adjusted by the provisions of Section 4.3 of the Standard PPA; and (d) Net Output delivered in the Off-Peak Period. The Company will pay the Seller the On-Peak Avoided Cost pursuant to Table 3 for all other delivered Net Output. (See the Standard Renewable PPA for defined terms.)

RENEWABLE ENERGY CERTIFICATES

The QF must provide the bundled energy and all Environmental Attributes, including RECs, to the Company from January 1, 2015 through the end of the PPA.

MONTHLY SERVICE CHARGE

Each separately metered QF not associated with a retail Customer account will be charged \$10.00 per month.

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SCHEDULE 211 (Continued)

INSURANCE REQUIREMENTS

The following insurance requirements are applicable to Sellers with a Standard Renewable PPA:

- 1) QFs with nameplate capacity ratings greater than 200 kW are required to secure and maintain a prudent amount of general liability insurance. The Seller must certify to the Company that it is maintaining general liability insurance coverage for each QF at prudent amounts. A prudent amount will be deemed to mean liability insurance coverage for both bodily injury and property damage liability in the amount of not less than \$1,000,000 each occurrence combined single limit, which limits may be required to be increased or decreased by the Company as the Company determines in its reasonable judgment economic conditions or claims experience may warrant.
- 2) Such insurance will include an endorsement naming the Company as an additional insured insofar as liability arising out of operations under this schedule and a provision that such liability policies will not be canceled or their limits reduced without 30 days' written notice to the Company. The Seller will furnish the Company with certificates of insurance together with the endorsements required herein. The Company will have the right to inspect the original policies of such insurance.
- 3) QFs with a design capacity of 200 kW or less are encouraged to pursue liability insurance on his/her own. The Oregon Public Utility Commission in Order No. 05-584 determined that it is inappropriate to require QFs that have a design capacity of 200 kW or less to obtain general liability insurance.

TRANSMISSION AGREEMENTS

If the QF is located outside the Company's service territory, the Seller is responsible for the transmission of power to the Company's service territory, including third party charges for ancillary services such as imbalance service or integration, as applicable.

INTERCONNECTION REQUIREMENTS

Except as otherwise provided in a generation Interconnection Agreement between the Company and Seller, if the QF is located within the Company's service territory, switching equipment capable of isolating the QF from the Company's system must be accessible to the Company at all times. At the Company's option, the Company may operate the switching equipment described above if, in the sole opinion of the Company, continued operation of the QF in connection with the utility's system may create or contribute to a system emergency.

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SCHEDULE 211 (Continued)

INTERCONNECTION REQUIREMENTS (Continued)

The QF owner interconnecting with the Company's distribution system must comply with all requirements for interconnection as established pursuant to Commission rule, in the Company's Rules and Regulations (Rule C) or the Company's Interconnection Procedures contained in its FERC Open Access Transmission Tariff (OATT), as applicable. The Seller will bear full responsibility for the installation and safe operation of the interconnection facilities.

METERING DATA

Seller shall maintain a minimum of two years records of scheduled and metered Net Output and shall allow PGE to have access to such records and imbalance information kept by the Transmission Provider as applicable. Seller shall take all required actions and grant permissions as necessary to allow PGE access to such information.

**DEFINITION OF A SMALL POWER PRODUCTION FACILITY ELIGIBLE TO RECEIVE
THE STANDARD RENEWABLE RATES AND STANDARD RENEWABLE PPA**

A QF will be eligible to receive the applicable standard rates and Standard Renewable PPA if the nameplate capacity of the QF, together with any other electric generating facility using the same motive force, owned or controlled by the same person(s) or affiliated person(s), and located at the same site, does not exceed 10 MW. In addition, post January 1, 2015, the QF must provide all environmental attributes, including RECs that the may be used to satisfy Oregon's Renewable Portfolio Standard (RPS).

Definition of Person(s) or Affiliated Person(s)

As used above, the term "same person(s)" or "affiliated person(s)" means a natural person or persons or any legal entity or entities sharing common ownership, management or acting jointly or in concert with or exercising influence over the policies or actions of another person or entity. However, two facilities will not be held to be owned or controlled by the same person(s) or affiliated person(s) solely because they are developed by a single entity.

Furthermore, two facilities will not be held to be owned or controlled by the same person(s) or affiliated person(s) if such common person or persons is a "passive investor" whose ownership interest in the QF is primarily related to utilizing production tax credits and MACRS depreciation as the primary ownership benefit. A unit of Oregon local government may also be a "passive investor" if the local governmental unit demonstrates that it will not have an equity ownership interest in or exercise any control over the management of the QF and that its only interest is a share of the cash flow from the QF, which share will not exceed 20%. The 20% cash flow share limit may only be exceeded for good cause shown and only with the prior approval of the Commission.

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SCHEDULE 211 (Continued)

**DEFINITION OF A SMALL COGENERATION FACILITY OR SMALL POWER
PRODUCTION FACILITY ELIGIBLE TO RECEIVE THE STANDARD RATES
AND STANDARD PPA (Continued)**

Definition of Same Site

For purposes of the foregoing, generating facilities are considered to be located at the same site as the QF for which qualification for the standard rates and Standard Renewable PPA is sought if they are located within a five-mile radius of any generating facilities or equipment providing fuel or motive force associated with the QF for which qualification for the standard rates and standard PPA is sought.

Shared Interconnection and Infrastructure

QFs otherwise meeting the above-described separate ownership test and thereby qualified for entitlement to the standard rate and Standard Renewable PPA will not be disqualified by utilizing an interconnection or other infrastructure not providing motive force or fuel that is shared with other QFs qualifying for the standard rate and Standard Renewable PPA so long as the use of the shared interconnection complies with the interconnecting utility's safety and reliability standards, interconnection agreement requirements and Prudent Electrical Practices as that term is defined in the interconnecting utility's approved Standard PPA.

Definition of Environmental Attributes

As used in this schedule, Environmental Attributes shall mean means any and all current or future credits, benefits, emissions reductions, environmental air quality credits, emissions reduction credits, offsets and allowances, howsoever entitled, resulting from the avoidance of the emission of any gas, chemical or other substance attributable to the Facility during the Term, or otherwise attributable to the generation, purchase, sale or use of energy from or by the Facility during the Term, including without limitation any of the same arising out of legislation or regulation concerned with oxides of nitrogen, sulfur or carbon, with particulate matter, soot or mercury, or implementing the United Nations Framework Convention on Climate Change (the "UNFCCC") or the Kyoto Protocol to the UNFCCC or crediting "early action" emissions reduction, or laws or regulations involving or administered by the Clean Air Markets Division of the Environmental Protection Agency or successor administrator, or any State or federal entity given jurisdiction over a program involving transferability of Environmental Attributes, including the Oregon Renewable Portfolio Standards, and any Green Tag Reporting Rights to such Environmental Attributes.

**Portland General Electric Company
Effective**

SCHEDULE 211 (Concluded)

DISPUTE RESOLUTION

Upon request, the QF will provide the purchasing utility with documentation verifying the ownership, management and financial structure of the QF in reasonably sufficient detail to allow the utility to make an initial determination of whether or not the QF meets the above-described criteria for entitlement to the standard rates and Standard Renewable PPA. Any dispute concerning a QF's entitlement to the standard rates and Standard Renewable PPA may be presented to the Commission for resolution.

SPECIAL CONDITIONS

1. Delivery of energy by Seller will be at a voltage, phase, frequency, and power factor as specified by the Company.
2. If the Seller also receives retail Electricity Service from the Company at the same location, any payments under this schedule will be credited to the Seller's retail Electricity Service bill. At the option of the Customer, any net credit over \$10.00 will be paid by check to the Customer.
3. The Seller may enter into only one PPA at any given time per facility with the Company for power sales. All sales must commence within 12 months of execution of a PPA.
4. PPAs entered into pursuant to this schedule will not terminate prior to the Standard or Negotiated PPA's termination date if the 1978 Public Utility Regulatory Policies Act (PURPA) is repealed.

TERM OF AGREEMENT

Not less than one year and not to exceed 20 years.

**Portland General Electric Company
Effective**

**SCHEDULE 212
QUALIFYING FACILITIES GREATER THAN 10MW
RENEWABLE AVOIDED COST POWER PURCHASE INFORMATION**

PURPOSE

To provide information regarding procedures and timelines leading to a power purchase agreement (PPA) between the Company and a Qualifying Facility (QF) with an aggregate nameplate capacity greater than 10,000 kW.

AVAILABLE

To owners of QFs making sales of electricity and environmental attributes, including renewable energy certificates (REC) to the Company in the State of Oregon (Seller).

APPLICABLE

To qualifying cogeneration facilities or qualifying small power production facilities within the meaning of section 201 and 210 of the Public Utility Regulatory Act of 1978 (PURPA), 16 U.S.C. 796 and 824a-3.

A QF with nameplate capacity greater than 10,000 kW will be required to enter into a Negotiated Renewable PPA with the Company.

A QF with nameplate capacity less than 10,000 kW or less may elect the option of a Standard Renewable PPA with terms and pricing as defined in Schedule 211.

POWER PURCHASE INFORMATION

A QF may call the Power Production Coordinator at (503) 464-8000 to obtain more information about being a Seller or how to apply for service under this schedule.

GUIDELINES

In accordance with terms set out in this schedule and the Commission's Rules as applicable, the Company will purchase Net Output from Seller. Net Output shall mean the Energy no greater than the Nameplate Rating expressed in kWhs produced by the Facility, less station and other onsite use and less transformation and transmission losses. Net Output does not include any environmental attributes, imbalance power, or power from an integrating entity. The Negotiated PPA will comply with the requirements of the Federal Energy Regulatory Commission (FERC) and the guidelines established by Commission Order No. 07-360.

The Negotiated PPA may have a term of up to 20 years, as selected by the Seller.

**Portland General Electric Company
Effective**

SCHEDULE 212 (Continued)

PROCEDURES TO DEVELOP A NEGOTIATED PPA

1. The Seller may request indicative power purchase prices. To obtain an indicative pricing proposal for a proposed project, the Seller must provide in writing, general project information reasonably required for the development of indicative pricing, including, but not limited to:
 - Demonstration of ability to obtain QF status.
 - Design capacity (MW), station service requirements, and net amount of power to be delivered to the Company's electric system.
 - Generation technology and other related technology applicable to the site.
 - Quantity and timing of monthly power deliveries (including project ability to respond to dispatch orders from the Company).
 - Proposed site location and electrical interconnection point.
 - Status of interconnection and transmission arrangements.
 - Proposed on-line date and outstanding permitting requirements.
 - Motive force or fuel plan consisting of fuel type(s) and source(s).
 - Proposed PPA term and pricing provisions.

2. The Company will not be obligated to provide an indicative pricing proposal until all the information described above has been received in writing from the Seller. Within 30 business days following receipt of all required information, the Company will provide the Seller with an indicative pricing proposal, which may include other terms and conditions, tailored to the individual characteristics of the proposed project. Such proposal may be used by the Seller to make determinations regarding project planning, financing and feasibility. However, such prices are indicative and are not final and binding. Prices and other terms and conditions are only final and binding to the extent contained in Negotiated PPA, once executed by both parties. The Company will provide with the indicative prices a description of the methodology used to develop the prices.

**Portland General Electric Company
Effective**

SCHEDULE 212 (Continued)

PROCEDURES TO DEVELOP A NEGOTIATED RENEWABLE PPA (Continued)

3. The Avoided Cost Prices specified in Schedule 211 provide a starting point for indicative prices, and will be modified to address the following specific factors established in OPUC Order No. 07-360 and FERC 18 § CFR 292.304(e):
 - (e) *Factors affecting rates for purchases. In determining avoided costs, the following factors will, to the extent practicable, be taken into account.*
 - (1) *The data provided pursuant to 18 CFR § 292.302(b), (c), or (d), including State review of any such data;*
 - (2) *The availability of capacity or energy from a qualifying facility during the system daily and seasonal peak periods, including:*
 - (i) *The ability of the Company to dispatch the qualifying facility;*
 - (ii) *The expected or demonstrated reliability of the qualifying facility;*
 - (iii) *The terms of any contract or other legally enforceable obligation, including the duration of the obligation, termination notice requirement and sanctions for non-compliance;*
 - (iv) *The extent to which scheduled outages of the qualifying facility can be usefully coordinated with scheduled outages of the Company's facilities;*
 - (v) *The usefulness of energy and capacity supplied from a qualifying facility during system emergencies, including its ability to separate its load from its generation;*
 - (vi) *The individual and aggregate value of energy and capacity from qualifying facilities on the Company's system; and*
 - (vii) *The smaller capacity increments and the shorter lead time available with additions of capacity from qualifying facilities; and*
 - (3) *The relationship of the availability of energy or capacity from the qualifying facility as derived in part (e) (2) of this section, to the ability of the Company to avoid costs, including the deferral of capacity additions and the reduction of fossil fuel use; and*
 - (4) *The costs or savings resulting from variations in line losses from those that would have existed in the absence of purchases from a qualifying facility, if the Company generated an equivalent amount of energy itself or purchased an equivalent amount of electric energy or capacity.*

**Portland General Electric Company
Effective**

SCHEDULE 212 (Continued)

PROCEDURES TO DEVELOP A NEGOTIATED RENEWABLE PPA (Continued)

4. If the Seller desires to proceed with negotiations after reviewing the Company's indicative price proposal, the Seller must request in writing that the Company prepare a draft Negotiated Renewable PPA to serve as the basis for negotiations between the parties. In connection with such request, the Seller must provide the Company with any additional project information that the Company reasonably determines to be necessary for the preparation of the Negotiated Renewable PPA, which may include, but will not be limited to:
 - Updated information for the project information listed above in paragraphs 1 and 3.
 - Evidence of adequate control of proposed site.
 - Timelines for obtaining any necessary governmental permits, approvals or authorizations.
 - Assurance of fuel supply or motive force.
 - Anticipated timelines for completion of key project milestones.
 - Evidence that any necessary interconnection studies have been completed and assurance that the necessary interconnection arrangements have been executed or are under negotiation.
5. Within 30 days following receipt of updated information required by the Company, the Company will provide the Seller with a draft Negotiated Renewable PPA. The draft agreement will contain proposed terms and conditions in addition to indicative pricing. The draft agreement is not binding; however; it will serve as the basis for subsequent negotiations.
6. After reviewing the draft Negotiated Renewable PPA, the Seller will notify the Company in writing of its intent to proceed with negotiations. The Seller may prepare an initial set of written comments and proposals regarding the agreement and forward them to the Company. The Company will not be obligated to begin negotiations with a Seller until the Company has received an initial set of written comments. After the Company's receipt of comments and proposals, the Seller may contact the Company to schedule contract negotiations at such times and places as are mutually agreeable to the parties. In connection with such negotiations, the Company:
 - Will not unreasonably delay negotiations and will respond in good faith to any additions, deletions or modifications to the draft Negotiated Renewable PPA that are proposed by the Seller.
 - May request to visit the site of the proposed project if such a visit has not previously occurred.
 - Will update its pricing proposals at appropriate intervals to accommodate any changes to the Company's avoided-cost calculations, the proposed project or proposed terms of the draft Negotiated Renewable PPA.
 - May request any additional information from the Seller necessary to finalize the terms of the Negotiated Renewable PPA and satisfy the Company's due diligence regarding the QF project.

**Portland General Electric Company
Effective**

SCHEDULE 212 (Concluded)

PROCEDURES TO DEVELOP A NEGOTIATED RENEWABLE PPA (Continued)

7. When both parties are in full agreement as to all terms and conditions of the draft Negotiated Renewable PPA, the Company will prepare and forward to the Seller a final, executable version of the agreement within 15 business days. Prices and other terms and conditions in the Negotiated Renewable PPA will not be final and binding until the agreement has been executed by both parties.
8. If parties are not in full agreement within 60 days from the date of written notice, the Seller may file a complaint with the Commission asking the Commission to adjudicate the disputed contract terms.

RENEWABLE ENERGY CERTIFICATES

The QF must provide the bundled energy and all Environmental Attributes, including RECs, to the Company from January 1, 2015 through the end of the PPA.

OFF SYSTEM RENEWABLE POWER PURCHASE AGREEMENT

A Seller with a facility that interconnects with an electric system other than the Company's electric system may enter into a Renewable PPA with the Company after following the applicable Negotiated PPA guidelines and making the arrangements necessary for transmission of power to the Company's system. Off System PPAs are available for non-variable resources and variable resources for which the QF provides or pays a third party to provide integration to the Company's service territory. PGE is not responsible for Seller's transmission costs, including ancillary services such as imbalance service or integration costs provided by Seller or a third party.

Standard Renewable In System Non-Variable Power Purchase Agreement

**STANDARD RENEWABLE IN SYSTEM NON-VARIABLE POWER PURCHASE
AGREEMENT**

THIS AGREEMENT, entered into this _____ day, _____ 201____, is between _____ ("Seller") and Portland General Electric Company ("PGE") (hereinafter each a "Party" or collectively, "Parties").

RECITALS

Seller intends to construct, own, operate and maintain a _____ facility for the generation of electric power located in _____ County, _____ with a Nameplate Capacity Rating of _____ kilowatt ("kW"), as further described in Exhibit B ("Facility"); and

Seller intends to operate the Facility as a "Qualifying Facility," as such term is defined in Section 3.1.3, below.

Seller shall sell and PGE shall purchase the entire Net Output, as such term is defined in Section 1.19, below, from the Facility in accordance with the terms and conditions of this Agreement.

AGREEMENT

NOW, THEREFORE, the Parties mutually agree as follows:

SECTION 1: DEFINITIONS

When used in this Agreement, the following terms shall have the following meanings:

1.1. "As-built Supplement" means the supplement to Exhibit B provided by Seller in accordance with Section 4.4 following completion of construction of the Facility, describing the Facility as actually built.

1.2. "Billing Period" means a period between PGE's readings of its power purchase billing meter at the Facility in the normal course of PGE's business. Such periods typically vary and may not coincide with calendar months.

1.3. "Cash Escrow" means an agreement by two parties to place money into the custody of a third party for delivery to a grantee only after the fulfillment of the conditions specified.

1.4. "Commercial Operation Date" means the date that the Facility is deemed by PGE to be fully operational and reliable. PGE may, at its discretion, require, among other things, that all of the following events have occurred:

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1.4.1. (facilities with nameplate under 500 kW exempt from following requirement) PGE has received a certificate addressed to PGE from a Licensed Professional Engineer ("LPE") acceptable to PGE in its reasonable judgment stating that the Facility is able to generate electric power reliably in amounts required by this Agreement and in accordance with all other terms and conditions of this Agreement (certifications required under this Section 1.4 can be provided by one or more LPEs);

1.4.2. (facilities with nameplate under 500 kW exempt from following requirement) Start-Up Testing of the Facility has been completed in accordance with Section 1.28;

1.4.3. (facilities with nameplate under 500 kW exempt from following requirement) After PGE has received notice of completion of Start-Up Testing, PGE has received a certificate addressed to PGE from an LPE stating that the Facility has operated for testing purposes under this Agreement uninterrupted for a Test Period at a rate in kW of at least 75 percent of average annual Net Output divided by 8,760 based upon any sixty (60) minute period for the entire testing period. The Facility must provide ten (10) working days written notice to PGE prior to the start of the initial testing period. If the operation of the Facility is interrupted during this initial testing period or any subsequent testing period, the Facility shall promptly start a new Test Period and provide PGE forty-eight (48) hours written notice prior to the start of such testing period;

1.4.4. (facilities with nameplate under 500 kW exempt from following requirement) PGE has received a certificate addressed to PGE from an LPE stating that in accordance with the Generation Interconnection Agreement, all required interconnection facilities have been constructed, all required interconnection tests have been completed; and the Facility is physically interconnected with PGE's electric system.

1.4.5. (facilities with nameplate under 500 kW exempt from following requirement) PGE has received a certificate addressed to PGE from an LPE stating that Seller has obtained all Required Facility Documents and if requested by PGE in writing, has provided copies of any or all such requested Required Facility Documents;

1.5. "Contract Price" means the applicable price, including on-peak and off-peak prices, as selected by Seller in Section 5 and as specified in the Schedule.

1.6. "Contract Year" means each twelve (12) month period during the Term commencing upon the Commercial Operation Date or its anniversary during the Term, except the final contract year will be the period from the last anniversary of the Commercial Operation Date during the Term until the end of the Term.

1.7. "Effective Date" has the meaning set forth in Section 2.1.

Standard Renewable In System Non-Variable Power Purchase Agreement
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1.8. "Environmental Attributes" means any and all current or future credits, benefits, emissions reductions, environmental air quality credits, emissions reduction credits, offsets and allowances, howsoever entitled, resulting from the avoidance of the emission of any gas, chemical or other substance attributable to the Facility during the Term, or otherwise attributable to the generation, purchase, sale or use of energy from or by the Facility during the Term, including without limitation any of the same arising out of legislation or regulation concerned with oxides of nitrogen, sulfur or carbon, with particulate matter, soot or mercury, or implementing the United Nations Framework Convention on Climate Change (the "UNFCCC") or the Kyoto Protocol to the UNFCCC or crediting "early action" emissions reduction, or laws or regulations involving or administered by the Clean Air Markets Division of the Environmental Protection Agency or successor administrator, or any State or federal entity given jurisdiction over a program involving transferability of Environmental Attributes, including the Oregon Renewable Portfolio Standards, and any Green Tag Reporting Rights to such Environmental Attributes.

1.9. "Facility" has the meaning set forth in the Recitals.

1.10. "Forward Replacement Price" means the price at which PGE, acting in a commercially reasonable manner, purchases for delivery at the Point of Delivery a replacement for any Net Output that Seller is required to deliver under this Agreement plus (i) costs reasonably incurred by PGE in purchasing such replacement Net Output, and (ii) additional transmission charges, if any, reasonably incurred by PGE in causing replacement energy to be delivered to the Point of Delivery.

1.11. "Generation Interconnection Agreement" means the generation interconnection agreement to be entered into separately between Seller and PGE, providing for the construction, operation, and maintenance of PGE's interconnection facilities required to accommodate deliveries of Seller's Net Output.

1.12. "Letter of Credit" means an engagement by a bank or other person made at the request of a customer that the issuer will honor drafts or other demands for payment upon compliance with the conditions specified in the letter of credit.

1.13. "Licensed Professional Engineer" or "LPE" means a person who is licensed to practice engineering in the state where the Facility is located, who has no economic relationship, association, or nexus with the Seller, and who is not a representative of a consulting engineer, contractor, designer or other individual involved in the development of the Facility, or of a manufacturer or supplier of any equipment installed in the Facility. Such Licensed Professional Engineer shall be licensed in an appropriate engineering discipline for the required certification being made and be acceptable to PGE in its reasonable judgment.

1.14. "Lost Energy Value" means for a Contract Year: zero, unless the Net Output is less than Minimum Net Output and the mean Dow Jones Mid C Index Price is greater than the Contract Price, in which case Lost Energy Value equals: (Minimum Net Output - Net Output) X (the lower of the mean Contract Price or the Mean Dow Jones Mid C Index Price - mean Contract Price).

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1.15. "Mid-Columbia" means an area which includes points at any of the switchyards associated with the following four hydro projects: Rocky Reach, Rock Island, Wanapum and Priest Rapids. These switchyards include: Rocky Reach, Rock Island, Wanapum, McKenzie, Valhalla, Columbia, Midway and Vantage. Mid-Columbia shall also include points in the "Northwest Hub," as defined by Bonneville Power Administration. For scheduling purposes, the footprint described above shall dictate the delivery point name for the then current Western Electricity Coordinating Council ("WECC") scheduling protocols. If the footprint changes during the Term, a mutually agreed upon footprint that describes an area containing the most liquidity for trading purposes shall apply.

1.16. "Minimum Net Output" shall have the meaning provided in Section 4.2 of this Agreement.

1.17. "Nameplate Capacity Rating" means the maximum capacity of the Facility as stated by the manufacturer, expressed in kW, which shall not exceed 10,000 kW.

1.18. "Net Dependable Capacity" means the maximum capacity the Facility can sustain over a specified period modified for seasonal limitations, if any, and reduced by the capacity required for station service or auxiliaries.

1.19. "Net Output" means all energy expressed in kWhs produced by the Facility, less station and other onsite use and less transformation and transmission losses. Net Output does not include any environmental attributes imbalance power, or power from an integrating entity.

1.20. "Off-Peak Hours" has the meaning provided in the Schedule.

1.21. "On-Peak Hours" has the meaning provided in the Schedule.

1.22. "Point of Delivery" means the high side of the generation step up transformer(s) located at the point of interconnection between the Facility and PGE's distribution or transmission system, as specified in the Generation Interconnection Agreement.

1.23. "Prime Rate" means the publicly announced prime rate or reference rate for commercial loans to large businesses with the highest credit rating in the United States in effect from time to time quoted by Citibank, N.A. If a Citibank, N.A. prime rate is not available, the applicable Prime Rate shall be the announced prime rate or reference rate for commercial loans in effect from time to time quoted by a bank with \$10 billion or more in assets in New York City, N.Y., selected by the Party to whom interest based on the prime rate is being paid.

1.24. "Prudent Electrical Practices" means those practices, methods, standards and acts engaged in or approved by a significant portion of the electric power industry in the Western Electricity Coordinating Council that at the relevant time period, in the exercise of reasonable judgment in light of the facts known or that should reasonably have been known at the time a decision was made, would have been expected to

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accomplish the desired result in a manner consistent with good business practices, reliability, economy, safety and expedition, and which practices, methods, standards and acts reflect due regard for operation and maintenance standards recommended by applicable equipment suppliers and manufacturers, operational limits, and all applicable laws and regulations. Prudent Electrical Practices are not intended to be limited to the optimum practice, method, standard or act to the exclusion of all others, but rather to those practices, methods and acts generally acceptable or approved by a significant portion of the electric power generation industry in the relevant region, during the relevant period, as described in the immediate preceding sentence.

1.25. "Required Facility Documents" means all licenses, permits, authorizations, and agreements necessary for construction, operation, interconnection, and maintenance of the Facility including without limitation those set forth in Exhibit C.

1.26. "Senior Lien" means a prior lien which has precedence as to the property under the lien over another lien or encumbrance.

1.27. "Start-Up Testing" means the completion of applicable required factory and start-up tests as set forth in Exhibit D.

1.28. "Step-in Rights" means the right of one party to assume an intervening position to satisfy all terms of an agreement in the event the other party fails to perform its obligations under the agreement.

1.29. "Schedule" shall mean PGE Schedule 211 filed with the Oregon Public Utilities Commission ("Commission") in effect on the Effective Date of this Agreement and attached hereto as Exhibit E, the terms of which are hereby incorporated by reference. In the event of a conflict between this Agreement and the Schedule, this Agreement shall apply.

1.30. "Term" shall mean the period beginning on the Effective Date and ending on the Termination Date.

1.31. "Test Period" shall mean a period of sixty (60) days or a commercially reasonable period determined by the Seller.

1.32. References to Recitals, Sections, and Exhibits are to be the recitals, sections and exhibits of this Agreement.

SECTION 2: TERM; COMMERCIAL OPERATION DATE

2.1 This Agreement shall become effective upon execution by both Parties ("Effective Date").

2.2 Time is of the essence of this Agreement, and Seller's ability to meet certain requirements prior to the Commercial Operation Date and to complete all requirements to establish the Commercial Operation Date is critically important. Therefore,

Standard Renewable In System Non-Variable Power Purchase Agreement
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2.2.1 By _____ [date to be determined by the Seller] Seller shall begin initial deliveries of Net Output; and

2.2.2 By _____ [date to be determined by the Seller] Seller shall have completed all requirements under Section 1.4 and shall have established the Commercial Operation Date.

2.2.3 In the event Seller is unable to meet the requirements of Sections 2.2.1 and 2.2.2, Seller shall pay damages equal to the Lost Energy Value. In calculating the Lost Energy Value for use in this section, the Minimum Net Output shall be prorated and applied to the period of time between the Commercial Operation Date and the date specified in 2.2.1.

2.3 This Agreement shall terminate on _____, ____ [date to be chosen by Seller], up to 20 years from the Effective Date, or the date the Agreement is terminated in accordance with Section 10 or 12.2, whichever is earlier ("Termination Date").

SECTION 3: REPRESENTATIONS AND WARRANTIES

3.1 Seller and PGE represent, covenant, and warrant as follows:

3.1.1 Seller warrants it is a _____ duly organized under the laws of _____.

3.1.2 Seller warrants that the execution and delivery of this Agreement does not contravene any provision of, or constitute a default under, any indenture, mortgage, or other material agreement binding on Seller or any valid order of any court, or any regulatory agency or other body having authority to which Seller is subject.

3.1.3 Seller warrants that the Facility is and shall for the Term of this Agreement continue to be a "Qualifying Facility" ("QF") as that term is defined in the version of 18 C.F.R. Part 292 in effect on the Effective Date. Seller has provided the appropriate QF certification, which may include a Federal Energy Regulatory Commission ("FERC") self-certification to PGE prior to PGE's execution of this Agreement. At any time during the Term of this Agreement, PGE may require Seller to provide PGE with evidence satisfactory to PGE in its reasonable discretion that the Facility continues to qualify as a QF under all applicable requirements.

3.1.4 Seller warrants that it has not within the past two (2) years been the debtor in any bankruptcy proceeding, and Seller is and will continue to be for the Term of this Agreement current on all of its financial obligations.

3.1.5 Seller warrants that during the Term of this Agreement, all of Seller's right, title and interest in and to the Facility shall be free and clear of all liens and encumbrances other than liens and encumbrances arising from third-

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party financing of the Facility other than workers', mechanics', suppliers' or similar liens, or tax liens, in each case arising in the ordinary course of business that are either not yet due and payable or that have been released by means of a performance bond acceptable to PGE posted within eight (8) calendar days of the commencement of any proceeding to foreclose the lien.

3.1.6 Seller warrants that it will design and operate the Facility consistent with Prudent Electrical Practices.

3.1.7 Seller warrants that the Facility has a Nameplate Capacity Rating not greater than 10,000 kW.

3.1.8 Seller warrants that Net Dependable Capacity of the Facility is _____ kW.

3.1.9 Seller estimates that the average annual Net Output to be delivered by the Facility to PGE is _____ kilowatt-hours ("kWh"), which amount PGE will include in its resource planning.

3.1.10 Seller will deliver from the Facility to PGE at the Point of Delivery Net Output not to exceed a maximum of _____ kWh of Net Output during each Contract Year ("Maximum Net Output").

3.1.11 Seller has entered into a Generation Interconnection Agreement for a term not less than the term of this Agreement.

3.1.12 PGE warrants that it has not within the past two (2) years been the debtor in any bankruptcy proceeding, and PGE is and will continue to be for the Term of this Agreement current on all of its financial obligations.

3.1.13 Seller warrants that the Facility satisfies the eligibility requirements specified in the Definition of a Small Cogeneration Facility or Small Power Production Facility Eligible to Receive the Standard Renewable Rates and Standard Renewable PPA in PGE's Schedule and Seller will not make any changes in its ownership, control or management during the term of this Agreement that would cause it to not be in compliance with the Definition of a Small Cogeneration Facility or Small Power Production Facility Eligible to Receive the Standard Renewable Rates and Standard Renewable PPA in PGE's Schedule. Seller will provide, upon request by Buyer not more frequently than every 36 months, such documentation and information as may be reasonably required to establish Seller's continued compliance with such Definition. Buyer agrees to take reasonable steps to maintain the confidentiality of any portion of the above described documentation and information that the Seller identifies as confidential except Buyer will provide all such confidential information to the Commission upon the Commission's request.

3.1.14 Seller warrants that it will comply with all requirements necessary for all renewable energy credits associated with Net Output to be issued, monitored, accounted for, and transferred by and through the Western

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Renewable Energy Generation System consistent with the provisions of OAR 330-160-0005 through OAR 330-160-0050.

SECTION 4: DELIVERY OF POWER AND ENVIRONMENTAL ATTRIBUTES

4.1 Commencing on the Effective Date and continuing through the Term of this Agreement, Seller shall sell to PGE the entire Net Output delivered from the Facility at the Point of Delivery.

4.2 Provided Seller has elected the Contract Price options in Section 5.1, 5.2, or 5.3, Seller shall deliver to PGE from the Facility for each Contract Year Net Output equal to or greater than the Minimum Net Output (either (a) if Seller does not select the Alternative Minimum Amount as defined in Exhibit A of this Agreement, a minimum of seventy-five percent (75%) of its average annual Net Output or (b) if selected by Seller, the Alternative Minimum Amount), provided that such Minimum Net Output for the final Contract Year shall be reduced pro rata to reflect the Commercial Operation Date, and further provided that such Minimum Net Output shall be reduced on a pro-rata basis for any periods during a Contract Year that the Facility was prevented from generating electricity for reasons of Force Majeure. PGE shall pay Seller the Contract Price for all delivered Net Output.

4.3 Provided Seller has elected the Contract Price options in Section 5.1, 5.2, or 5.3, Seller agrees that if Seller does not deliver the Minimum Net Output each Contract Year, PGE will suffer losses equal to the Lost Energy Value. As damages for Seller's failure to deliver the Minimum Net Output (subject to adjustment for reasons of Force Majeure as provided in Section 4.2) in any Contract Year, notwithstanding any other provision of this Agreement, the purchase price payable by PGE for future deliveries shall be reduced until Lost Energy Value is recovered. PGE and Seller shall work together in good faith to establish the period, in monthly amounts, of such reduction so as to avoid Seller's default on its commercial or financing agreements necessary for its continued operation of the Facility. For QF Facilities sized at 100 kW or smaller, the provisions of this section shall not apply.

4.4 Upon completion of construction of the Facility, Seller shall provide PGE an As-built Supplement to specify the actual Facility as built. Seller shall not increase the Nameplate Capacity Rating above that specified in Exhibit B or increase the ability of the Facility to deliver Net Output in quantities in excess of the Net Dependable Capacity, or the Maximum Net Output as described in Section 3.1.10 above, through any means including, but not limited to, replacement, modification, or addition of existing equipment, except with prior written notice to PGE. In the event Seller increases the Nameplate Capacity Rating of the Facility to no more than 10,000 kW pursuant to this section, PGE shall pay the Contract Price for the additional delivered Net Output. In the event Seller increases the Nameplate Capacity Rating to greater than 10,000 kW, then Seller shall be required to enter into a new power purchase agreement for all delivered Net Output proportionally related to the increase of Nameplate Capacity above 10,000 kW.

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4.5 To the extent not otherwise provided in the Generation Interconnection Agreement, all costs associated with the modifications to PGE's interconnection facilities or electric system occasioned by or related to the interconnection of the Facility with PGE's system, or any increase in generating capability of the Facility, or any increase of delivery of Net Dependable Capacity from the Facility, shall be borne by Seller.

4.6 Commencing on the Effective Date and continuing through the Term of this Agreement, Seller shall provide and PGE shall acquire the Environmental Attributes for the Contract Years specified in the Schedule. The Contract Price includes full payment for the Net Output and any Environmental Attributes transferred to PGE under this Agreement. With respect to Environmental Attributes not transferred to PGE under this Agreement ("Seller-Retained RECs") Seller may report under §1605(b) of the Energy Policy Act of 1992 or under any applicable program as belonging to Seller any of the Seller-Retained RECs, and PGE shall not report under such program that such Seller-Retained RECs belong to it. With respect to Environmental Attributes transferred to PGE under this Agreement ("Transferred RECs"), PGE may report under §1605(b) of the Energy Policy Act of 1992 or under any applicable program as belonging to it any of the Transferred RECs, and Seller shall not report under such program that such Transferred RECs belong to it.

SECTION 5: CONTRACT PRICE

PGE shall pay Seller for the price options 5.1, 5.2, 5.3 or 5.4, as selected below, pursuant to the Schedule. Seller shall indicate which price option it chooses by marking its choice below with an X. If Seller chooses the option in Section 5.1, it must mark below with a second X, a single second option from Section 5.2, 5.3, or 5.4 for all Contract Years in excess of 15 until the end of the Term. Except as provided herein, Seller's selection is for the Term and shall not be changed during the Term.

- 5.1 Renewable Fixed Price for Non-Variable Resources
- 5.2 Deadband Index Gas Price
- 5.3 Index Gas Price
- 5.4 Mid-C Index Rate Price

SECTION 6: OPERATION AND CONTROL

6.1 Seller shall operate and maintain the Facility in a safe manner in accordance with the Generation Interconnection Agreement, and Prudent Electrical Practices. PGE shall have no obligation to purchase Net Output from the Facility to the extent the interconnection of the Facility to PGE's electric system is disconnected, suspended or interrupted, in whole or in part, pursuant to the Generation Interconnection Agreement, or to the extent generation curtailment is required as a result of Seller's noncompliance with the Generation Interconnection Agreement. Seller is solely responsible for the operation and maintenance of the Facility. PGE shall not, by reason of its decision to inspect or not to inspect the Facility, or by any action or inaction

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taken with respect to any such inspection, assume or be held responsible for any liability or occurrence arising from the operation and maintenance by Seller of the Facility.

6.2 Seller agrees to provide sixty (60) days advance written notice of any scheduled maintenance that would require shut down of the Facility for any period of time.

6.3 If the Facility ceases operation for unscheduled maintenance, Seller immediately shall notify PGE of the necessity of such unscheduled maintenance, the time when such maintenance has occurred or will occur, and the anticipated duration of such maintenance. Seller shall take all reasonable measures and exercise its best efforts to avoid unscheduled maintenance, to limit the duration of such unscheduled maintenance, and to perform unscheduled maintenance during Off-Peak hours.

SECTION 7: CREDITWORTHINESS

In the event Seller: a) is unable to represent or warrant as required by Section 3 that it has not been a debtor in any bankruptcy proceeding within the past two (2) years; b) becomes such a debtor during the Term; or c) is not or will not be current on all its financial obligations, Seller shall immediately notify PGE and shall promptly (and in no less than 10 days after notifying PGE) provide default security in an amount reasonably acceptable to PGE in one of the following forms: Senior Lien, Step-in Rights, a Cash Escrow or Letter of Credit. The amount of such default security that shall be acceptable to PGE shall be equal to: (annual On Peak Hours) X (On Peak Price – Off Peak Price) X (Minimum Net Output / 8760). Notwithstanding the foregoing, in the event Seller is not current on construction related financial obligations, Seller shall notify PGE of such delinquency and PGE may, in its discretion, grant an exception to the requirements to provide default security if the QF has negotiated financial arrangements with the construction loan lender that mitigate Seller's financial risk to PGE.

SECTION 8: METERING

8.1 PGE shall design, furnish, install, own, inspect, test, maintain and replace all metering equipment at Seller's cost and as required pursuant to the Generation Interconnection Agreement.

8.2 Metering shall be performed at the location and in a manner consistent with this Agreement and as specified in the Generation Interconnection Agreement. All Net Output purchased hereunder shall be adjusted to account for electrical losses, if any, between the point of metering and the Point of Delivery, so that the purchased amount reflects the net amount of power flowing into PGE's system at the Point of Delivery.

8.3 PGE shall periodically inspect, test, repair and replace the metering equipment as provided in the Generation Interconnection Agreement. If any of the inspections or tests discloses an error exceeding two (2%) percent of the actual energy

delivery, either fast or slow, proper correction, based upon the inaccuracy found, shall be made of previous readings for the actual period during which the metering equipment rendered inaccurate measurements if that period can be ascertained. If the actual period cannot be ascertained, the proper correction shall be made to the measurements taken during the time the metering equipment was in service since last tested, but not exceeding three (3) months, in the amount the metering equipment shall have been shown to be in error by such test. Any correction in billings or payments resulting from a correction in the meter records shall be made in the next monthly billing or payment rendered. Such correction, when made, shall constitute full adjustment of any claim between Seller and PGE arising out of such inaccuracy of metering equipment.

8.4 To the extent not otherwise provided in the Generation Interconnection Agreement, all of PGE's costs relating to all metering equipment installed to accommodate Seller's Facility shall be borne by Seller.

SECTION 9: BILLINGS, COMPUTATIONS AND PAYMENTS

9.1 On or before the thirtieth (30th) day following the end of each Billing Period, PGE shall send to Seller payment for Seller's deliveries of Net Output to PGE, together with computations supporting such payment. PGE may offset any such payment to reflect amounts owing from Seller to PGE pursuant to this Agreement, the Generation Interconnection Agreement, and any other agreement related to the Facility between the Parties or otherwise.

9.2 Any amounts owing after the due date thereof shall bear interest at the Prime Rate plus two percent (2%) from the date due until paid; provided, however, that the interest rate shall at no time exceed the maximum rate allowed by applicable law.

SECTION 10: DEFAULT, REMEDIES AND TERMINATION

10.1 In addition to any other event that may constitute a default under this Agreement, the following events shall constitute defaults under this Agreement:

10.1.1 Breach by Seller or PGE of a representation or warranty, except for Section 3.1.4, set forth in this Agreement.

10.1.2 Seller's failure to provide default security, if required by Section 7, prior to delivery of any Net Output to PGE or within 10 days of notice.

10.1.3 Seller's failure to deliver the Minimum Net Output for two consecutive Contract Years.

10.1.4 If Seller is no longer a Qualifying Facility.

10.1.5 Failure of PGE to make any required payment pursuant to Section 9.1.

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10.2 In the event of a default hereunder, the non-defaulting party may immediately terminate this Agreement at its sole discretion by delivering written notice to the other Party, and, except for damages related to a default pursuant to Section 10.1.3 by a QF sized at 100 kW or smaller, may pursue any and all legal or equitable remedies provided by law or pursuant to this Agreement including damages related to the need to procure replacement power. Such termination shall be effective upon the date of delivery of notice, as provided in Section 21.1. The rights provided in this Section 10 are cumulative such that the exercise of one or more rights shall not constitute a waiver of any other rights.

10.3 If this Agreement is terminated as provided in this Section 10 PGE shall make all payments, within thirty (30) days, that, pursuant to the terms of this Agreement, are owed to Seller as of the time of receipt of notice of default. PGE shall not be required to pay Seller for any Net Output delivered by Seller after such notice of default.

10.4 If this Agreement is terminated as a result of Seller's default, Seller shall pay PGE the positive difference, if any, obtained by subtracting the Contract Price from the sum of the Forward Replacement Price for the Minimum Net Output that Seller was otherwise obligated to provide for a period of twenty-four (24) months from the date of termination. Accounts owed by Seller pursuant to this paragraph shall be due within five (5) business days after any invoice from PGE for the same.

10.5 In the event PGE terminates this Agreement pursuant to this Section 10, and Seller wishes to again sell Net Output to PGE following such termination, PGE in its sole discretion may require that Seller shall do so subject to the terms of this Agreement, including but not limited to the Contract Price until the Term of this Agreement (as set forth in Section 2.3) would have run in due course had the Agreement remained in effect. At such time Seller and PGE agree to execute a written document ratifying the terms of this Agreement.

10.6 Sections 10.1 10.3 10.4 10.5, 11, and 20.2 shall survive termination of this Agreement.

SECTION 11: INDEMNIFICATION AND LIABILITY

11.1 Seller agrees to defend, indemnify and hold harmless PGE, its directors, officers, agents, and representatives against and from any and all loss, claims, actions or suits, including costs and attorney's fees, both at trial and on appeal, resulting from, or arising out of or in any way connected with Seller's delivery of electric power to PGE or with the facilities at or prior to the Point of Delivery, or otherwise arising out of this Agreement, including without limitation any loss, claim, action or suit, for or on account of injury, bodily or otherwise, to, or death of, persons, or for damage to, or destruction or economic loss of property belonging to PGE, Seller or others, excepting to the extent such loss, claim, action or suit may be caused by the negligence of PGE, its directors, officers, employees, agents or representatives.

11.2 PGE agrees to defend, indemnify and hold harmless Seller, its directors, officers, agents, and representatives against and from any and all loss, claims, actions

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or suits, including costs and attorney's fees, both at trial and on appeal, resulting from, or arising out of or in any way connected with PGE's receipt of electric power from Seller or with the facilities at or after the Point of Delivery, or otherwise arising out of this Agreement, including without limitation any loss, claim, action or suit, for or on account of injury, bodily or otherwise, to, or death of, persons, or for damage to, or destruction or economic loss of property belonging to PGE, Seller or others, excepting to the extent such loss, claim, action or suit may be caused by the negligence of Seller, its directors, officers, employees, agents or representatives.

11.3 Nothing in this Agreement shall be construed to create any duty to, any standard of care with reference to, or any liability to any person not a Party to this Agreement. No undertaking by one Party to the other under any provision of this Agreement shall constitute the dedication of that Party's system or any portion thereof to the other Party or to the public, nor affect the status of PGE as an independent public utility corporation or Seller as an independent individual or entity.

11.4 NEITHER PARTY SHALL BE LIABLE TO THE OTHER FOR SPECIAL, PUNITIVE, INDIRECT OR CONSEQUENTIAL DAMAGES, WHETHER ARISING FROM CONTRACT, TORT (INCLUDING NEGLIGENCE), STRICT LIABILITY OR OTHERWISE.

SECTION 12: INSURANCE

12.1 Prior to the connection of the Facility to PGE's electric system, provided such Facility has a design capacity of 200 kW or more, Seller shall secure and continuously carry for the Term hereof, with an insurance company or companies rated not lower than "B+" by the A. M. Best Company, insurance policies for bodily injury and property damage liability. Such insurance shall include provisions or endorsements naming PGE, its directors, officers and employees as additional insureds; provisions that such insurance is primary insurance with respect to the interest of PGE and that any insurance maintained by PGE is excess and not contributory insurance with the insurance required hereunder; a cross-liability or severability of insurance interest clause; and provisions that such policies shall not be canceled or their limits of liability reduced without thirty (30) days' prior written notice to PGE. Initial limits of liability for all requirements under this section shall be \$1,000,000 million single limit, which limits may be required to be increased or decreased by PGE as PGE determines in its reasonable judgment economic conditions or claims experience may warrant.

12.2 Prior to the connection of the Facility to PGE's electric system, provided such facility has a design capacity of 200 kW or more, Seller shall secure and continuously carry for the Term hereof, in an insurance company or companies rated not lower than "B+" by the A. M. Best Company, insurance acceptable to PGE against property damage or destruction in an amount not less than the cost of replacement of the Facility. Seller promptly shall notify PGE of any loss or damage to the Facility. Unless the Parties agree otherwise, Seller shall repair or replace the damaged or destroyed Facility, or if the facility is destroyed or substantially destroyed, it may terminate this Agreement. Such termination shall be effective upon receipt by PGE of

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written notice from Seller. Seller shall waive its insurers' rights of subrogation against PGE regarding Facility property losses.

12.3 Prior to the connection of the Facility to PGE's electric system and at all other times such insurance policies are renewed or changed, Seller shall provide PGE with a copy of each insurance policy required under this Section, certified as a true copy by an authorized representative of the issuing insurance company or, at the discretion of PGE, in lieu thereof, a certificate in a form satisfactory to PGE certifying the issuance of such insurance. If Seller fails to provide PGE with copies of such currently effective insurance policies or certificates of insurance, PGE at its sole discretion and without limitation of other remedies, may upon ten (10) days advance written notice by certified or registered mail to Seller either withhold payments due Seller until PGE has received such documents, or purchase the satisfactory insurance and offset the cost of obtaining such insurance from subsequent power purchase payments under this Agreement.

SECTION 13: FORCE MAJEURE

13.1 As used in this Agreement, "Force Majeure" or "an event of Force Majeure" means any cause beyond the reasonable control of the Seller or of PGE which, despite the exercise of due diligence, such Party is unable to prevent or overcome. By way of example, Force Majeure may include but is not limited to acts of God, fire, flood, storms, wars, hostilities, civil strife, strikes, and other labor disturbances, earthquakes, fires, lightning, epidemics, sabotage, restraint by court order or other delay or failure in the performance as a result of any action or inaction on behalf of a public authority which by the exercise of reasonable foresight such Party could not reasonably have been expected to avoid and by the exercise of due diligence, it shall be unable to overcome, subject, in each case, to the requirements of the first sentence of this paragraph. Force Majeure, however, specifically excludes the cost or availability of resources to operate the Facility, changes in market conditions that affect the price of energy or transmission, wind or water droughts, and obligations for the payment of money when due.

13.2 If either Party is rendered wholly or in part unable to perform its obligation under this Agreement because of an event of Force Majeure, that Party shall be excused from whatever performance is affected by the event of Force Majeure to the extent and for the duration of the Force Majeure, after which such Party shall recommence performance of such obligation, provided that:

13.2.1 the non-performing Party, shall, promptly, but in any case within one (1) week after the occurrence of the Force Majeure, give the other Party written notice describing the particulars of the occurrence; and

13.2.2 the suspension of performance shall be of no greater scope and of no longer duration than is required by the Force Majeure; and

13.2.3 the non-performing Party uses its best efforts to remedy its inability to perform its obligations under this Agreement.

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13.3 No obligations of either Party which arose before the Force Majeure causing the suspension of performance shall be excused as a result of the Force Majeure.

13.4 Neither Party shall be required to settle any strike, walkout, lockout or other labor dispute on terms which, in the sole judgment of the Party involved in the dispute, are contrary to the Party's best interests.

SECTION 14: SEVERAL OBLIGATIONS

Nothing contained in this Agreement shall ever be construed to create an association, trust, partnership or joint venture or to impose a trust or partnership duty, obligation or liability between the Parties. If Seller includes two or more parties, each such party shall be jointly and severally liable for Seller's obligations under this Agreement.

SECTION 15: CHOICE OF LAW

This Agreement shall be interpreted and enforced in accordance with the laws of the state of Oregon, excluding any choice of law rules which may direct the application of the laws of another jurisdiction.

SECTION 16: PARTIAL INVALIDITY AND PURPA REPEAL

It is not the intention of the Parties to violate any laws governing the subject matter of this Agreement. If any of the terms of the Agreement are finally held or determined to be invalid, illegal or void as being contrary to any applicable law or public policy, all other terms of the Agreement shall remain in effect. If any terms are finally held or determined to be invalid, illegal or void, the Parties shall enter into negotiations concerning the terms affected by such decision for the purpose of achieving conformity with requirements of any applicable law and the intent of the Parties to this Agreement.

In the event the Public Utility Regulatory Policies Act (PURPA) is repealed, this Agreement shall not terminate prior to the Termination Date, unless such termination is mandated by state or federal law.

SECTION 17: WAIVER

Any waiver at any time by either Party of its rights with respect to a default under this Agreement or with respect to any other matters arising in connection with this Agreement must be in writing, and such waiver shall not be deemed a waiver with respect to any subsequent default or other matter.

SECTION 18: GOVERNMENTAL JURISDICTION AND AUTHORIZATIONS

This Agreement is subject to the jurisdiction of those governmental agencies having control over either Party or this Agreement. Seller shall at all times maintain in effect all local, state and federal licenses, permits and other approvals as then may be

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required by law for the construction, operation and maintenance of the Facility, and shall provide upon request copies of the same to PGE.

SECTION 19: SUCCESSORS AND ASSIGNS

This Agreement and all of the terms hereof shall be binding upon and inure to the benefit of the respective successors and assigns of the Parties. No assignment hereof by either Party shall become effective without the written consent of the other Party being first obtained and such consent shall not be unreasonably withheld. Notwithstanding the foregoing, either Party may assign this Agreement without the other Party's consent as part of (a) a sale of all or substantially all of the assigning Party's assets, or (b) a merger, consolidation or other reorganization of the assigning Party.

SECTION 20: ENTIRE AGREEMENT

20.1 This Agreement supersedes all prior agreements, proposals, representations, negotiations, discussions or letters, whether oral or in writing, regarding PGE's purchase of Net Output from the Facility. No modification of this Agreement shall be effective unless it is in writing and signed by both Parties.

20.2 By executing this Agreement, Seller releases PGE from any third party claims related to the Facility, known or unknown, which may have arisen prior to the Effective Date.

SECTION 21: NOTICES

21.1 All notices except as otherwise provided in this Agreement shall be in writing, shall be directed as follows and shall be considered delivered if delivered in person or when deposited in the U.S. Mail, postage prepaid by certified or registered mail and return receipt requested:

To Seller: _____

with a copy to: _____

To PGE: Contracts Manager
QF Contracts, 3WTCBR06
PGE - 121 SW Salmon St.
Portland, Oregon 97204

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21.2 The Parties may change the person to whom such notices are addressed, or their addresses, by providing written notices thereof in accordance with this Section 21.

IN WITNESS WHEREOF, the Parties hereto have caused this Agreement to be executed in their respective names as of the Effective Date.

PGE

By: _____
Name: _____
Title: _____
Date: _____

(Name Seller)

By: _____
Name: _____
Title: _____
Date: _____

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EXHIBIT A
MINIMUM NET OUTPUT

In this Exhibit, Seller may designate an alternative Minimum Net Output to seventy-five (75%) percent of annual average Net Output specified in Section 3.1.9 of the Agreement ("Alternative Minimum Amount"). Such Alternative Minimum Amount, if provided, shall exceed zero, and shall be established in accordance with Prudent Electrical Practices and documentation supporting such a determination shall be provided to PGE upon execution of the Agreement. Such documentation shall be commercially reasonable, and may include, but is not limited to, documents used in financing the project, and data on output of similar projects operated by seller, PGE or others.

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EXHIBIT B
DESCRIPTION OF SELLER'S FACILITY

[Seller to Complete]

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EXHIBIT C
REQUIRED FACILITY DOCUMENTS

[Seller list all permits and authorizations required for this project]

Sellers Generation Interconnection Agreement

EXHIBIT D START-UP TESTING

[Seller identify appropriate tests]

Required factory testing includes such checks and tests necessary to determine that the equipment systems and subsystems have been properly manufactured and installed, function properly, and are in a condition to permit safe and efficient start-up of the Facility, which may include but are not limited to (as applicable):

1. Pressure tests of all steam system equipment;
2. Calibration of all pressure, level, flow, temperature and monitoring instruments;
3. Operating tests of all valves, operators, motor starters and motor;
4. Alarms, signals, and fail-safe or system shutdown control tests;
5. Insulation resistance and point-to-point continuity tests;
6. Bench tests of all protective devices;
7. Tests required by manufacturer of equipment; and
8. Complete pre-parallel checks with PGE.

Required start-up test are those checks and tests necessary to determine that all features and equipment, systems, and subsystems have been properly designed, manufactured, installed and adjusted, function properly, and are capable of operating simultaneously in such condition that the Facility is capable of continuous delivery into PGE's electrical system, which may include but are not limited to (as applicable):

1. Turbine/generator mechanical runs including shaft, vibration, and bearing temperature measurements;
2. Running tests to establish tolerances and inspections for final adjustment of bearings, shaft run-outs;
3. Brake tests;
4. Energization of transformers;
5. Synchronizing tests (manual and auto);
6. Stator windings dielectric test;
7. Armature and field windings resistance tests;
8. Load rejection tests in incremental stages from 5, 25, 50, 75 and 100 percent load;
9. Heat runs;
10. Tests required by manufacturer of equipment;
11. Excitation and voltage regulation operation tests;
12. Open circuit and short circuit; saturation tests;
13. Governor system steady state stability test;
14. Phase angle and magnitude of all PT and CT secondary voltages and currents to protective relays, indicating instruments and metering;
15. Auto stop/start sequence;
16. Level control system tests; and
17. Completion of all state and federal environmental testing requirements.

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EXHIBIT E
SCHEDULE
[Attach currently in-effect Schedule 211]

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**STANDARD RENEWABLE OFF SYSTEM NON-VARIABLE POWER PURCHASE
AGREEMENT**

THIS AGREEMENT, entered into this _____ day, _____ 201____, is between _____ ("Seller") and Portland General Electric Company ("PGE") (hereinafter each a "Party" or collectively, "Parties").

RECITALS

Seller intends to construct, own, operate and maintain a _____ facility for the generation of electric power located in _____ County, _____ with a Nameplate Capacity Rating of _____ kilowatt ("kW"), as further described in Exhibit B ("Facility"); and

Seller intends to operate the Facility as a "Qualifying Facility," as such term is defined in Section 3.1.3, below.

Seller shall sell and PGE shall purchase the entire Net Output, as such term is defined in Section 1.19, below, from the Facility in accordance with the terms and conditions of this Agreement.

AGREEMENT

NOW, THEREFORE, the Parties mutually agree as follows:

SECTION 1: DEFINITIONS

When used in this Agreement, the following terms shall have the following meanings:

1.1. "As-built Supplement" means the supplement to Exhibit B provided by Seller in accordance with Section 4.4 following completion of construction of the Facility, describing the Facility as actually built.

1.2. "Billing Period" means a period between PGE's readings of its power purchase billing meter at the Facility in the normal course of PGE's business. Such periods typically vary and may not coincide with calendar months.

1.3. "Cash Escrow" means an agreement by two parties to place money into the custody of a third party for delivery to a grantee only after the fulfillment of the conditions specified.

1.4. "Commercial Operation Date" means the date that the Facility is deemed by PGE to be fully operational and reliable. PGE may, at its discretion require, among other things, that all of the following events have occurred:

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1.4.1. (facilities with nameplate under 500 kW exempt from following requirement) PGE has received a certificate addressed to PGE from a Licensed Professional Engineer ("LPE") acceptable to PGE in its reasonable judgment stating that the Facility is able to generate electric power reliably in amounts required by this Agreement and in accordance with all other terms and conditions of this Agreement (certifications required under this Section 1.4 can be provided by one or more LPEs);

1.4.2. Start-Up Testing of the Facility has been completed in accordance with Section 1.27;

1.4.3. (facilities with nameplate under 500 kW exempt from following requirement) After PGE has received notice of completion of Start-Up Testing, PGE has received a certificate addressed to PGE from an LPE stating that the Facility has operated for testing purposes under this Agreement uninterrupted for a Test Period at a rate in kW of at least 75 percent of average annual Net Output divided by 8,760 based upon any sixty (60) minute period for the entire testing period. The Facility must provide ten (10) working days written notice to PGE prior to the start of the initial testing period. If the operation of the Facility is interrupted during this initial testing period or any subsequent testing period, the Facility shall promptly start a new Test Period and provide PGE forty-eight (48) hours written notice prior to the start of such testing period;

1.4.4. (facilities with nameplate under 500 kW exempt from following requirement) PGE has received a certificate addressed to PGE from an LPE stating that all required interconnection facilities have been constructed and all required interconnection tests have been completed;

1.4.5. (facilities with nameplate under 500 kW exempt from following requirement) PGE has received a certificate addressed to PGE from an LPE stating that Seller has obtained all Required Facility Documents and, if requested by PGE in writing, has provided copies of any or all such requested Required Facility Documents;

1.4.6. PGE has received a copy of the Transmission Agreement.

1.5. "Contract Price" means the applicable price, including on-peak and off-peak prices, as selected by Seller in Section 5 and as specified in the Schedule.

1.6. "Contract Year" means each twelve (12) month period commencing upon the Commercial Operation Date or its anniversary during the Term, except the final contract year will be the period from the last anniversary of the Commercial Operation Date during the Term until the end of the Term.

1.7. "Effective Date" has the meaning set forth in Section 2.1.

1.8. "Environmental Attributes" means any and all current or future credits, benefits, emissions reductions, environmental air quality credits, emissions reduction

credits, offsets and allowances, howsoever entitled, resulting from the avoidance of the emission of any gas, chemical or other substance attributable to the Facility during the Term, or otherwise attributable to the generation, purchase, sale or use of energy from or by the Facility during the Term, including without limitation any of the same arising out of legislation or regulation concerned with oxides of nitrogen, sulfur or carbon, with particulate matter, soot or mercury, or implementing the United Nations Framework Convention on Climate Change (the "UNFCCC") or the Kyoto Protocol to the UNFCCC or crediting "early action" emissions reduction, or laws or regulations involving or administered by the Clean Air Markets Division of the Environmental Protection Agency or successor administrator, or any State or federal entity given jurisdiction over a program involving transferability of Environmental Attributes, including the Oregon Renewable Portfolio Standard, and any Green Tag Reporting Rights to such Environmental Attributes.

1.9. "Facility" has the meaning set forth in the Recitals.

1.10. "Forward Replacement Price" means the price at which PGE, acting in a commercially reasonable manner, purchases for delivery at the Point of Delivery a replacement for any Net Output that Seller is required to deliver under this Agreement plus (i) costs reasonably incurred by PGE in purchasing such replacement Net Output, and (ii) additional transmission charges, if any, reasonably incurred by PGE in causing replacement energy to be delivered to the Point of Delivery. If PGE elects not to make such a purchase, costs of purchasing replacement Net Output shall be Dow Jones Mid C Index Price for such energy not delivered, plus any additional cost or expense incurred as a result of Seller's failure to deliver, as determined by PGE in a commercially reasonable manner (but not including any penalties, ratcheted demand or similar charges).

1.11. "Generation Interconnection Agreement" means an agreement governing the interconnection of the Facility with _____ electric system.

1.12. "Letter of Credit" means an engagement by a bank or other person made at the request of a customer that the issuer will honor drafts or other demands for payment upon compliance with the conditions specified in the letter of credit.

1.13. "Licensed Professional Engineer" or "LPE" means a person who is licensed to practice engineering in the state where the Facility is located, who has no economic relationship, association, or nexus with the Seller, and who is not a representative of a consulting engineer, contractor, designer or other individual involved in the development of the Facility, or of a manufacturer or supplier of any equipment installed in the Facility. Such Licensed Professional Engineer shall be licensed in an appropriate engineering discipline for the required certification being made and be acceptable to PGE in its reasonable judgment.

1.14. "Lost Energy Value" means for a Contract Year: zero, unless the Net Output is less than Minimum Net Output and the mean Dow Jones Mid C Index Price is greater than the Contract Price, in which case Lost Energy Value equals: (Minimum Net Output - Net Output) X (the lower of the mean Contract Price or the mean Dow Jones

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Mid C Index Price – mean Contract Price) minus Transmission Curtailment Replacement Energy Cost if any for like period.

1.15. "Mid-Columbia" means an area which includes points at any of the switchyards associated with the following four hydro projects: Rocky Reach, Rock Island, Wanapum and Priest Rapids. These switchyards include: Rocky Reach, Rock Island, Wanapum, McKenzie, Valhalla, Columbia, Midway and Vantage. Mid-Columbia shall also include points in the "Northwest Hub," as defined by Bonneville Power Administration. For scheduling purposes, the footprint described above shall dictate the delivery point name for the then current Western Electricity Coordinating Council ("WECC") scheduling protocols. If the footprint changes during the Term, a mutually agreed upon footprint that describes an area containing the most liquidity for trading purposes shall apply.

1.16. "Minimum Net Output" shall have the meaning provided in Section 4.2 of this Agreement.

1.17. "Nameplate Capacity Rating" means the maximum capacity of the Facility as stated by the manufacturer, expressed in kW, which shall not exceed 10,000 kW.

1.18. "Net Dependable Capacity" means the maximum capacity the Facility can sustain over a specified period modified for seasonal limitations, if any, and reduced by the capacity required for station service or auxiliaries.

1.19. "Net Output" means all energy expressed in kWhs produced by the Facility, less station and other onsite use and less transformation and transmission losses. Net Output does not include any environmental attributes imbalance power, or power from an integrating entity.

1.20. "Off-Peak Hours" has the meaning provided in the Schedule.

1.21. "On-Peak Hours" has the meaning provided in the Schedule.

1.22. "Point of Delivery" means the PGE System.

1.23. "Prime Rate" means the publicly announced prime rate or reference rate for commercial loans to large businesses with the highest credit rating in the United States in effect from time to time quoted by Citibank, N.A. If a Citibank, N.A. prime rate is not available, the applicable Prime Rate shall be the announced prime rate or reference rate for commercial loans in effect from time to time quoted by a bank with \$10 billion or more in assets in New York City, N.Y., selected by the Party to whom interest based on the prime rate is being paid.

1.24. "Prudent Electrical Practices" means those practices, methods, standards and acts engaged in or approved by a significant portion of the electric power industry in the Western Electricity Coordinating Council that at the relevant time period, in the exercise of reasonable judgment in light of the facts known or that should reasonably have been known at the time a decision was made, would have been expected to

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accomplish the desired result in a manner consistent with good business practices, reliability, economy, safety and expedition, and which practices, methods, standards and acts reflect due regard for operation and maintenance standards recommended by applicable equipment suppliers and manufacturers, operational limits, and all applicable laws and regulations. Prudent Electrical Practices are not intended to be limited to the optimum practice, method, standard or act to the exclusion of all others, but rather to those practices, methods and acts generally acceptable or approved by a significant portion of the electric power generation industry in the relevant region, during the relevant period, as described in the immediate preceding sentence.

1.25. "Required Facility Documents" means all licenses, permits, authorizations, and agreements necessary for construction, operation, interconnection, and maintenance of the Facility including without limitation those set forth in Exhibit C.

1.26. "Senior Lien" means a prior lien which has precedence as to the property under the lien over another lien or encumbrance.

1.27. "Start-Up Testing" means the completion of applicable required factory and start-up tests as set forth in Exhibit D.

1.28. "Step-in Rights" means the right of one party to assume an intervening position to satisfy all terms of an agreement in the event the other party fails to perform its obligations under the agreement.

1.29. "Schedule" shall mean PGE Schedule 211 filed with the Oregon Public Utilities Commission ("Commission") in effect on the Effective Date of this Agreement and attached hereto as Exhibit E, the terms of which are hereby incorporated by reference. In the event of a conflict between this Agreement and the Schedule, this Agreement shall apply.

1.30. "Term" shall mean the period beginning on the Effective Date and ending on the Termination Date.

1.31. "Test Period" shall mean a period of sixty (60) days or a commercially reasonable period determined by the Seller.

1.32. "Transmission Agreement" means an agreement executed by the Seller and the Transmission Provider(s) for Transmission Services.

1.33. "Transmission Curtailment" means a limitation on Seller's ability to deliver any portion of the scheduled energy to PGE due to the unavailability of transmission to the Point of Delivery or a generating facility limitation by a Transmission Provider (for any reason other than Force Majeure).

1.34. "Transmission Curtailment Replacement Energy Cost" means the greater of zero or the difference between Dow Jones Mid C Index Price – Contract Price X curtailed energy for periods of Transmission Curtailment.

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1.35. "Transmission Provider(s)" means the signatory (other than the Seller) to the Transmission Agreement.

1.36. "Transmission Services" means any and all services (including but not limited to ancillary services and control area services) required for the firm transmission and delivery of Energy from the Facility to the Point of Delivery for a term not less than the Term of this Agreement.

1.37. References to Recitals, Sections, and Exhibits are to be the recitals, sections and exhibits of this Agreement.

SECTION 2: TERM; COMMERCIAL OPERATION DATE

2.1 This Agreement shall become effective upon execution by both Parties ("Effective Date").

2.2 Time is of the essence of this Agreement, and Seller's ability to meet certain requirements prior to the Commercial Operation Date and to complete all requirements to establish the Commercial Operation Date is critically important. Therefore,

2.2.1 By _____ [date to be determined by the Seller] Seller shall begin initial deliveries of Net Output; and

2.2.2 By _____ [date to be determined by the Seller] Seller shall have completed all requirements under Section 1.4 and shall have established the Commercial Operation Date.

2.2.3 In the event Seller is unable to meet the requirements of Sections 2.2.1 and 2.2.2, Seller shall pay damages equal to the Lost Energy Value. In calculating the Lost Energy Value for use in this section, the Minimum Net Output shall be prorated and applied to the period of time between the Commercial Operation date and the date specified in 2.2.1.

2.3 This Agreement shall terminate on _____, _____ [date to be chosen by Seller], up to 20 years from the Effective Date, or the date the Agreement is terminated in accordance with Section 9 or 12.2, whichever is earlier ("Termination Date").

SECTION 3: REPRESENTATIONS AND WARRANTIES

3.1 Seller and PGE represent, covenant, and warrant as follows:

3.1.1 Seller warrants it is a _____ duly organized under the laws of _____.

3.1.2 Seller warrants that the execution and delivery of this Agreement does not contravene any provision of, or constitute a default under, any indenture, mortgage, or other material agreement binding on Seller or any valid

order of any court, or any regulatory agency or other body having authority to which Seller is subject.

3.1.3 Seller warrants that the Facility is and shall for the Term of this Agreement continue to be a "Qualifying Facility" ("QF") as that term is defined in the version of 18 C.F.R. Part 292 in effect on the Effective Date. Seller has provided the appropriate QF certification, which may include a Federal Energy Regulatory Commission ("FERC") self-certification to PGE prior to PGE's execution of this Agreement. At any time during the Term of this Agreement, PGE may require Seller to provide PGE with evidence satisfactory to PGE in its reasonable discretion that the Facility continues to qualify as a QF under all applicable requirements.

3.1.4 Seller warrants that it has not within the past two (2) years been the debtor in any bankruptcy proceeding, and Seller is and will continue to be for the Term of this Agreement current on all of its financial obligations.

3.1.5 Seller warrants that during the Term of this Agreement, all of Seller's right, title and interest in and to the Facility shall be free and clear of all liens and encumbrances other than liens and encumbrances arising from third-party financing of the Facility other than workers', mechanics', suppliers' or similar liens, or tax liens, in each case arising in the ordinary course of business that are either not yet due and payable or that have been released by means of a performance bond acceptable to PGE posted within eight (8) calendar days of the commencement of any proceeding to foreclose the lien.

3.1.6 Seller warrants that it will design and operate the Facility consistent with Prudent Electrical Practices.

3.1.7 Seller warrants that the Facility has a Nameplate Capacity Rating not greater than 10,000 kW.

3.1.8 Seller warrants that Net Dependable Capacity of the Facility is _____ kW.

3.1.9 Seller estimates that the average annual Net Output to be delivered by the Facility to PGE is _____ kilowatt-hours ("kWh"), which amount PGE will include in its resource planning.

3.1.10 Seller will schedule and deliver from the Facility to PGE at the Point of Delivery Net Output not to exceed a maximum of _____ kWh of Net Output during each Contract Year ("Maximum Net Output"). The cost of delivering energy from the Facility to PGE is the sole responsibility of the Seller.

3.1.11 Seller has entered into a Generation Interconnection Agreement for a term not less than the term of this Agreement.

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3.1.12 PGE warrants that it has not within the past two (2) years been the debtor in any bankruptcy proceeding, and PGE is and will continue to be for the Term of this Agreement current on all of its financial obligations.

3.1.13 Seller warrants that (i) the Facility satisfies the eligibility requirements specified in the Definition of a Small Cogeneration Facility or Small Power Production Facility Eligible to Receive the Standard Renewable Rates and Standard Renewable PPA in PGE's Schedule and (ii) Seller will not make any changes in its ownership, control or management during the term of this Agreement that would cause it to not be in compliance with the Definition of a Small Cogeneration Facility or Small Power Production Facility Eligible to Receive the Standard Renewable Rates and Standard Renewable PPA in PGE's Schedule. Seller will provide, upon request by Buyer not more frequently than every 36 months, such documentation and information as may be reasonably required to establish Seller's continued compliance with such Definition. Buyer agrees to take reasonable steps to maintain the confidentiality of any portion of the above described documentation and information that the Seller identifies as confidential except Buyer will provide all such confidential information to the Public Utility Commission of Oregon upon the Commission's request.

3.1.14 Seller warrants that it will comply with all requirements necessary for all renewable energy credits associated with Net Output to be issued, monitored, accounted for, and transferred by and through the Western Renewable Energy Generation System consistent with the provisions of OAR 330-160-0005 through OAR 330-160-0050.

SECTION 4: DELIVERY OF POWER AND ENVIRONMENTAL ATTRIBUTES

4.1 Commencing on the Effective Date and continuing through the Term of this Agreement, Seller shall sell to PGE the entire Net Output from the Facility. Seller's Net Output shall be scheduled and delivered to PGE at the Point of Delivery in accordance with Section 4.5.

4.2 Provided Seller has elected the Contract Price options in Section 5.1, 5.2, or 5.3, Seller shall schedule and deliver to PGE from the Facility for each Contract Year Net Output equal to or greater than the Minimum Net Output (either (a) if Seller does not select the Alternative Minimum Amount as defined in Exhibit A of this Agreement, a minimum of seventy-five percent (75%) of its average annual Net Output or (b) if selected by Seller, the Alternative Minimum Amount), provided that such Minimum Net Output for the final Contract Year shall be reduced pro rata to reflect the Commercial Operation Date, and further provided that such Minimum Net Output shall be reduced on a pro-rata basis for any periods during a Contract Year that the Facility was prevented from generating electricity for reasons of Force Majeure. PGE shall pay Seller the Contract Price for all scheduled and delivered Net Output.

4.3 Provided Seller has elected the Contract Price options in Section 5.1, 5.2, or 5.3, Seller agrees that if Seller does not deliver the Minimum Net Output each

Contract Year for reasons other than Transmission Curtailment, PGE will suffer losses equal to the Lost Energy Value. As damages for Seller's failure to deliver the Minimum Net Output (subject to adjustment for reasons of Force Majeure as provided in Section 4.2) in any Contract Year, notwithstanding any other provision of this Agreement the purchase price payable by PGE for future deliveries shall be reduced until Lost Energy Value is recovered. PGE and Seller shall work together in good faith to establish the period, in monthly amounts, of such reduction so as to avoid Seller's default on its commercial or financing agreements necessary for its continued operation of the Facility for QF Facilities sized at 100 kW or smaller, the provisions of this section shall not apply.

4.4 Upon completion of construction of the Facility, Seller shall provide PGE an As-built Supplement to specify the actual Facility as built. Seller shall not increase the Nameplate Capacity Rating above that specified in Exhibit B or increase the ability of the Facility to deliver Net Output in quantities in excess of the Net Dependable Capacity, or the Maximum Net Output as described in Section 3.1.10 above, through any means including, but not limited to, replacement, modification, or addition of existing equipment, except with prior written notice to PGE. In the event Seller increases the Nameplate Capacity Rating of the Facility to no more than 10,000 kW pursuant to this section, PGE shall pay the Contract Price for the additional delivered Net Output. In the event Seller increases the Nameplate Capacity Rating of the Facility to greater than 10,000 kW, then Seller shall be required to enter into a new power purchase agreement for all delivered Net Output proportionally related to the increase of Nameplate Capacity above 10,000 kW.

4.5 All energy shall be scheduled according to the most current North America Energy Reliability Corporation (NERC) and Western Electricity Coordinating Council (WECC) scheduling rules and practices. The Parties' respective representatives shall maintain hourly real-time schedule coordination; provided, however, that in the absence of such coordination, the hourly schedule established by the exchange of preschedules shall be considered final. Seller and PGE shall maintain records of hourly energy schedules for accounting and operating purposes. Deliveries shall not be made on a dynamic basis, and Seller shall insure that all deliveries of energy under this Agreement will be equal on an hourly basis to the amounts scheduled in the final schedule. Seller shall bear the cost of any transmission services, including but not limited to imbalance services, necessary to insure that energy deliveries under this Agreement are equal on an hourly basis to the amount of energy scheduled for each hour in the final schedule. The final schedule shall be provided by Seller to PGE no later than 20 minutes prior to delivery for the first 30 minutes of an hour (e.g., 1:00 to 1:30) and 15 minutes prior to delivery for the second 30 minutes of the hour (e.g., 1:30 to 2:00). The final E-Tag shall be the controlling evidence of the Parties' final schedule. Seller shall make commercially reasonable efforts to schedule in any hour an amount equal to its expected Net Output for such hour. Seller shall maintain a minimum of two years records of Net Output and shall agree to allow PGE to have access to such records and to imbalance information kept by the Transmission Provider.

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4.6 Commencing on the Effective Date and continuing through the Term of this Agreement, Seller shall provide and PGE shall acquire the Environmental Attributes for the Contract Years specified in the Schedule. The Contract Price includes full payment for the Net Output and any Environmental Attributes transferred to PGE under this Agreement. With respect to Environmental Attributes not transferred to PGE under this Agreement ("Seller-Retained RECs") Seller may report under §1605(b) of the Energy Policy Act of 1992 or under any applicable program as belonging to Seller any of the Seller-Retained RECs, and PGE shall not report under such program that such Seller-Retained RECs belong to it. With respect to Environmental Attributes transferred to PGE under this Agreement ("Transferred RECs"), PGE may report under §1605(b) of the Energy Policy Act of 1992 or under any applicable program as belonging to it any of the Transferred RECs, and Seller shall not report under such program that such Transferred RECs belong to it.

SECTION 5: CONTRACT PRICE

PGE shall pay Seller for the price options 5.1, 5.2, 5.3 or 5.4, as selected below, pursuant to the Schedule. Seller shall indicate which price option it chooses by marking its choice below with an X. If Seller chooses the option in Section 5.1, it must mark below with a second X a single second option from Section 5.2, 5.3, or 5.4 for all Contract Years in excess of 15 until the end of the Term. Except as provided herein, Sellers selection is for the Term and shall not be changed during the Term.

- 5.1 Renewable Fixed Price Non Variable or Integrated Variable Resource
- 5.2 Deadband Index Gas Price
- 5.3 Index Gas Price
- 5.4 Mid-C Index Rate Price

SECTION 6: OPERATION AND CONTROL

6.1 Seller shall operate and maintain the Facility in a safe manner in accordance with the Generation Interconnection Agreement, and Prudent Electrical Practices. PGE shall have no obligation to purchase Net Output from the Facility to the extent the interconnection of the Facility or transmission to PGE's electric system is curtailed, disconnected, suspended or interrupted, in whole or in part. Seller is solely responsible for the operation and maintenance of the Facility. PGE shall not, by reason of its decision to inspect or not to inspect the Facility, or by any action or inaction taken with respect to any such inspection, assume or be held responsible for any liability or occurrence arising from the operation and maintenance by Seller of the Facility.

6.2 Seller agrees to provide sixty (60) days advance written notice of any scheduled maintenance that would require shut down of the Facility for any period of time.

6.3 If the Facility ceases operation for unscheduled maintenance, Seller immediately shall notify PGE of the necessity of such unscheduled maintenance that could affect the generation, scheduling or delivery of energy to PGE, the time when such maintenance has occurred or will occur, and the anticipated duration of such maintenance. Seller shall take all reasonable measures and exercise its best efforts to avoid unscheduled maintenance, to limit the duration of such unscheduled maintenance, and to perform unscheduled maintenance during Off-Peak hours.

SECTION 7: CREDITWORTHINESS

In the event Seller: a) is unable to represent or warrant as required by Section 3 that it has not been a debtor in any bankruptcy proceeding within the past two (2) years; b) becomes such a debtor during the Term; or c) is not or will not be current on all its financial obligations, Seller shall immediately notify PGE and shall promptly (and in no less than ten (10) days after notifying PGE) provide default security in an amount reasonably acceptable to PGE in one of the following forms: Senior Lien, Step in Rights, a Cash Escrow or Letter of Credit. The amount of such default security that shall be acceptable to PGE shall be equal to: (annual On Peak Hours) X (On Peak Price – Off Peak Price) X (Minimum Net Output / 8760). Notwithstanding the foregoing, in the event Seller is not current on construction related financial obligations, Seller shall notify PGE of such delinquency and PGE may, in its discretion, grant an exception to the requirements to provide default security if the QF has negotiated financial arrangements with the construction loan lender that mitigate Seller's financial risk to PGE.

SECTION 8: BILLINGS, COMPUTATIONS AND PAYMENTS

8.1 On or before the thirtieth (30th) day following the end of each Billing Period, PGE shall send to Seller payment for Seller's deliveries of Net Output to PGE, together with computations supporting such payment. PGE may offset any such payment to reflect amounts owing from Seller to PGE pursuant to this Agreement and any other agreement related to the Facility between the Parties or otherwise.

8.2 Any amounts owing after the due date thereof shall bear interest at the Prime Rate plus two percent (2%) from the date due until paid; provided, however, that the interest rate shall at no time exceed the maximum rate allowed by applicable law.

SECTION 9: DEFAULT, REMEDIES AND TERMINATION

9.1 In addition to any other event that may constitute a default under this Agreement, the following events shall constitute defaults under this Agreement:

9.1.1 Breach by Seller or PGE of a representation or warranty, except for Section 3.1.4, set forth in this Agreement.

9.1.2 Seller's failure to provide default security, if required by Section 7, prior to delivery of any Net Output to PGE or within ten (10) days of notice.

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9.1.3 Seller's failure to deliver the Minimum Net Output for two consecutive Contract Years.

9.1.4 If Seller is no longer a Qualifying Facility.

9.1.5 Failure of PGE to make any required payment pursuant to Section 8.1.

9.1.6 Seller's failure to accurately schedule Net Output, as required by Section 4.5, where there is a demonstrated pattern of scheduling errors. Scheduling errors may include: scheduled energy that differs from Net Output by more than 10% for multiple monthly periods, or in cases where net deviations result in demonstrated excess payments by PGE to the Seller.

9.2 In the event of a default hereunder, the non-defaulting party may immediately terminate this Agreement at its sole discretion by delivering written notice to the other Party, and, except for damages related to a default pursuant to Section 9.1.3, by a QF sized at 100 kW or smaller, may pursue any and all legal or equitable remedies provided by law or pursuant to this Agreement including damages related to the need to procure replacement power. Such termination shall be effective upon the date of delivery of notice, as provided in Section 21.1. The rights provided in this Section 9 are cumulative such that the exercise of one or more rights shall not constitute a waiver of any other rights.

9.3 If this Agreement is terminated as provided in this Section 9, PGE shall make all payments, within thirty (30) days, that, pursuant to the terms of this Agreement, are owed to Seller as of the time of receipt of notice of default. PGE shall not be required to pay Seller for any Net Output delivered by Seller after such notice of default.

9.4 If this Agreement is terminated as a result of Seller's default, Seller shall pay PGE the positive difference, if any, obtained by subtracting the Contract Price from the sum of the Forward Replacement Price for the Minimum Net Output that Seller was otherwise obligated to provide for a period of twenty-four (24) months from the date of termination plus any cost incurred for transmission purchased by PGE to deliver the replacement power to the Point of Delivery and the estimated administrative cost to the utility to acquire replacement power. Accounts owed by Seller pursuant to this paragraph shall be due within five (5) business days after any invoice from PGE for the same.

9.5 In the event PGE terminates this Agreement pursuant to this Section 9, and Seller wishes to again sell Net Output to PGE following such termination, PGE in its sole discretion may require that Seller shall do so subject to the terms of this Agreement, including but not limited to the Contract Price until the Term of this Agreement (as set forth in Section 2.3) would have run in due course had the Agreement remained in effect. At such time Seller and PGE agree to execute a written document ratifying the terms of this Agreement.

9.6 Sections 9.1, 9.3, 9.4, 9.5, 11, and 20.2 shall survive termination of this Agreement.

SECTION 10: TRANSMISSION CURTAILMENTS

10.1 Seller shall give PGE notice as soon as reasonably practicable of any Transmission Curtailment that is likely to affect Seller's ability to deliver any portion of energy scheduled pursuant to Sections 4.5 of this Agreement.

10.2 If as the result of a Transmission Curtailment, Seller does not deliver any portion of energy (including real-time adjustments), scheduled pursuant to Section 4.5 of this Agreement, Seller shall pay PGE the Transmission Curtailment Replacement Energy Cost for the number of MWh of energy reasonably determined by PGE as the difference between (i) the scheduled energy that would have been delivered to PGE under this Agreement during the period of Transmission Curtailment and (ii) the actual energy, if any, that was delivered to PGE for the period.

SECTION 11: INDEMNIFICATION AND LIABILITY

11.1 Seller agrees to defend, indemnify and hold harmless PGE, its directors, officers, agents, and representatives against and from any and all loss, claims, actions or suits, including costs and attorney's fees, both at trial and on appeal, resulting from, or arising out of or in any way connected with Seller's delivery of electric power to PGE or with the facilities at or prior to the Point of Delivery, or otherwise arising out of this Agreement, including without limitation any loss, claim, action or suit, for or on account of injury, bodily or otherwise, to, or death of, persons, or for damage to, or destruction or economic loss of property belonging to PGE, Seller or others, excepting to the extent such loss, claim, action or suit may be caused by the negligence of PGE, its directors, officers, employees, agents or representatives.

11.2 PGE agrees to defend, indemnify and hold harmless Seller, its directors, officers, agents, and representatives against and from any and all loss, claims, actions or suits, including costs and attorney's fees, both at trial and on appeal, resulting from, or arising out of or in any way connected with PGE's receipt of electric power from Seller or with the facilities at or after the Point of Delivery, or otherwise arising out of this Agreement, including without limitation any loss, claim, action or suit, for or on account of injury, bodily or otherwise, to, or death of, persons, or for damage to, or destruction or economic loss of property belonging to PGE, Seller or others, excepting to the extent such loss, claim, action or suit may be caused by the negligence of Seller, its directors, officers, employees, agents or representatives.

11.3 Nothing in this Agreement shall be construed to create any duty to, any standard of care with reference to, or any liability to any person not a Party to this Agreement. No undertaking by one Party to the other under any provision of this Agreement shall constitute the dedication of that Party's system or any portion thereof to the other Party or to the public, nor affect the status of PGE as an independent public utility corporation or Seller as an independent individual or entity.

11.4 NEITHER PARTY SHALL BE LIABLE TO THE OTHER FOR SPECIAL, PUNITIVE, INDIRECT OR CONSEQUENTIAL DAMAGES, WHETHER ARISING FROM CONTRACT, TORT (INCLUDING NEGLIGENCE), STRICT LIABILITY OR OTHERWISE.

SECTION 12: INSURANCE

12.1 Prior to the connection of the Facility to PGE's electric system, provided such Facility has a design capacity of 200 kW or more, Seller shall secure and continuously carry for the Term hereof, with an insurance company or companies rated not lower than "B+" by the A. M. Best Company, insurance policies for bodily injury and property damage liability. Such insurance shall include provisions or endorsements naming PGE, its directors, officers and employees as additional insureds; provisions that such insurance is primary insurance with respect to the interest of PGE and that any insurance maintained by PGE is excess and not contributory insurance with the insurance required hereunder; a cross-liability or severability of insurance interest clause; and provisions that such policies shall not be canceled or their limits of liability reduced without thirty (30) days' prior written notice to PGE. Initial limits of liability for all requirements under this section shall be \$1,000,000 million single limit, which limits may be required to be increased or decreased by PGE as PGE determines in its reasonable judgment economic conditions or claims experience may warrant.

12.2 Prior to the connection of the Facility to PGE's electric system, provided such facility has a design capacity of 200 kW or more, Seller shall secure and continuously carry for the Term hereof, in an insurance company or companies rated not lower than "B+" by the A. M. Best Company, insurance acceptable to PGE against property damage or destruction in an amount not less than the cost of replacement of the Facility. Seller promptly shall notify PGE of any loss or damage to the Facility. Unless the Parties agree otherwise, Seller shall repair or replace the damaged or destroyed Facility, or if the facility is destroyed or substantially destroyed, it may terminate this Agreement. Such termination shall be effective upon receipt by PGE of written notice from Seller. Seller shall waive its insurers' rights of subrogation against PGE regarding Facility property losses.

12.3 Prior to the connection of the Facility to PGE's electric system and at all other times such insurance policies are renewed or changed, Seller shall provide PGE with a copy of each insurance policy required under this Section, certified as a true copy by an authorized representative of the issuing insurance company or, at the discretion of PGE, in lieu thereof, a certificate in a form satisfactory to PGE certifying the issuance of such insurance. If Seller fails to provide PGE with copies of such currently effective insurance policies or certificates of insurance, PGE at its sole discretion and without limitation of other remedies, may upon ten (10) days advance written notice by certified or registered mail to Seller either withhold payments due Seller until PGE has received such documents, or purchase the satisfactory insurance and offset the cost of obtaining such insurance from subsequent power purchase payments under this Agreement.

SECTION 13: FORCE MAJEURE

13.1 As used in this Agreement, "Force Majeure" or "an event of Force Majeure" means any cause beyond the reasonable control of the Seller or of PGE which, despite the exercise of due diligence, such Party is unable to prevent or overcome. By way of example, Force Majeure may include but is not limited to acts of God, fire, flood, storms, wars, hostilities, civil strife, strikes, and other labor disturbances, earthquakes, fires, lightning, epidemics, sabotage, restraint by court order or other delay or failure in the performance as a result of any action or inaction on behalf of a public authority which by the exercise of reasonable foresight such Party could not reasonably have been expected to avoid and by the exercise of due diligence, it shall be unable to overcome, subject, in each case, to the requirements of the first sentence of this paragraph. Force Majeure, however, specifically excludes Transmission Curtailment, the cost or availability of resources to operate the Facility, changes in market conditions that affect the price of energy or transmission, wind or water droughts, and obligations for the payment of money when due.

13.2 If either Party is rendered wholly or in part unable to perform its obligation under this Agreement because of an event of Force Majeure, that Party shall be excused from whatever performance is affected by the event of Force Majeure to the extent and for the duration of the Force Majeure, after which such Party shall recommence performance of such obligation, provided that:

13.2.1 the non-performing Party, shall, promptly, but in any case within one (1) week after the occurrence of the Force Majeure, give the other Party written notice describing the particulars of the occurrence; and

13.2.2 the suspension of performance shall be of no greater scope and of no longer duration than is required by the Force Majeure; and

13.2.3 the non-performing Party uses its best efforts to remedy its inability to perform its obligations under this Agreement.

13.3 No obligations of either Party which arose before the Force Majeure causing the suspension of performance shall be excused as a result of the Force Majeure.

13.4 Neither Party shall be required to settle any strike, walkout, lockout or other labor dispute on terms which, in the sole judgment of the Party involved in the dispute, are contrary to the Party's best interests.

SECTION 14: SEVERAL OBLIGATIONS

Nothing contained in this Agreement shall ever be construed to create an association, trust, partnership or joint venture or to impose a trust or partnership duty, obligation or liability between the Parties. If Seller includes two or more parties, each such party shall be jointly and severally liable for Seller's obligations under this Agreement.

SECTION 15: CHOICE OF LAW

This Agreement shall be interpreted and enforced in accordance with the laws of the state of Oregon, excluding any choice of law rules which may direct the application of the laws of another jurisdiction.

SECTION 16: PARTIAL INVALIDITY AND PURPA REPEAL

It is not the intention of the Parties to violate any laws governing the subject matter of this Agreement. If any of the terms of the Agreement are finally held or determined to be invalid, illegal or void as being contrary to any applicable law or public policy, all other terms of the Agreement shall remain in effect. If any terms are finally held or determined to be invalid, illegal or void, the Parties shall enter into negotiations concerning the terms affected by such decision for the purpose of achieving conformity with requirements of any applicable law and the intent of the Parties to this Agreement.

In the event the Public Utility Regulatory Policies Act (PURPA) is repealed, this Agreement shall not terminate prior to the Termination Date, unless such termination is mandated by state or federal law.

SECTION 17: WAIVER

Any waiver at any time by either Party of its rights with respect to a default under this Agreement or with respect to any other matters arising in connection with this Agreement must be in writing, and such waiver shall not be deemed a waiver with respect to any subsequent default or other matter.

SECTION 18: GOVERNMENTAL JURISDICTION AND AUTHORIZATIONS

This Agreement is subject to the jurisdiction of those governmental agencies having control over either Party or this Agreement. Seller shall at all times maintain in effect all local, state and federal licenses, permits and other approvals as then may be required by law for the construction, operation and maintenance of the Facility, and shall provide upon request copies of the same to PGE.

SECTION 19: SUCCESSORS AND ASSIGNS

This Agreement and all of the terms hereof shall be binding upon and inure to the benefit of the respective successors and assigns of the Parties. No assignment hereof by either Party shall become effective without the written consent of the other Party being first obtained and such consent shall not be unreasonably withheld. Notwithstanding the foregoing, either Party may assign this Agreement without the other Party's consent as part of (a) a sale of all or substantially all of the assigning Party's assets, or (b) a merger, consolidation or other reorganization of the assigning Party.

SECTION 20: ENTIRE AGREEMENT

20.1 This Agreement supersedes all prior agreements, proposals, representations, negotiations, discussions or letters, whether oral or in writing, regarding

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PGE's purchase of Net Output from the Facility. No modification of this Agreement shall be effective unless it is in writing and signed by both Parties.

20.2 By executing this Agreement, Seller releases PGE from any third party claims related to the Facility, known or unknown, which may have arisen prior to the Effective Date.

SECTION 21: NOTICES

21.1 All notices except as otherwise provided in this Agreement shall be in writing, shall be directed as follows and shall be considered delivered if delivered in person or when deposited in the U.S. Mail, postage prepaid by certified or registered mail and return receipt requested:

To Seller: _____

with a copy to: _____

To PGE: Contracts Manager
QF Contracts, 3WTCBR06
PGE - 121 SW Salmon St.
Portland, Oregon 97204

21.2 The Parties may change the person to whom such notices are addressed, or their addresses, by providing written notices thereof in accordance with this Section 21.

IN WITNESS WHEREOF, the Parties hereto have caused this Agreement to be executed in their respective names as of the Effective Date.

PGE

By: _____
Name: _____
Title: _____
Date: _____

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(Name Seller)

By: _____

Name: _____

Title: _____

Date: _____

EXHIBIT A MINIMUM NET OUTPUT

In this Exhibit, Seller may designate an alternative Minimum Net Output to seventy-five (75%) percent of annual average Net Output specified in Section 3.1.9 of the Agreement ("Alternative Minimum Amount"). Such Alternative Minimum Amount, if provided, shall exceed zero, and shall be established in accordance with Prudent Electrical Practices and documentation supporting such a determination shall be provided to PGE upon execution of the Agreement. Such documentation shall be commercially reasonable, and may include, but is not limited to, documents used in financing the project, and data on output of similar projects operated by seller, PGE or others.

EXHIBIT B
DESCRIPTION OF SELLER'S FACILITY

[Seller to Complete]

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EXHIBIT C
REQUIRED FACILITY DOCUMENTS

[Seller list all permits and authorizations required for this project]

Sellers Generation Interconnection Agreement with interconnecting utility

Firm Transmission Agreement between Seller and Transmission Provider

EXHIBIT D START-UP TESTING

[Seller identify appropriate tests]

Required factory testing includes such checks and tests necessary to determine that the equipment systems and subsystems have been properly manufactured and installed, function properly, and are in a condition to permit safe and efficient start-up of the Facility, which may include but are not limited to (as applicable):

1. Pressure tests of all steam system equipment;
2. Calibration of all pressure, level, flow, temperature and monitoring instruments;
3. Operating tests of all valves, operators, motor starters and motor;
4. Alarms, signals, and fail-safe or system shutdown control tests;
5. Insulation resistance and point-to-point continuity tests;
6. Bench tests of all protective devices;
7. Tests required by manufacturer of equipment; and
8. Complete pre-parallel checks with PGE.

Required start-up test are those checks and tests necessary to determine that all features and equipment, systems, and subsystems have been properly designed, manufactured, installed and adjusted, function properly, and are capable of operating simultaneously in such condition that the Facility is capable of continuous delivery into PGE's electrical system, which may include but are not limited to (as applicable):

1. Turbine/generator mechanical runs including shaft, vibration, and bearing temperature measurements;
2. Running tests to establish tolerances and inspections for final adjustment of bearings, shaft run-outs;
3. Brake tests;
4. Energization of transformers;
5. Synchronizing tests (manual and auto);
6. Stator windings dielectric test;
7. Armature and field windings resistance tests;
8. Load rejection tests in incremental stages from 5, 25, 50, 75 and 100 percent load;
9. Heat runs;
10. Tests required by manufacturer of equipment;
11. Excitation and voltage regulation operation tests;
12. Open circuit and short circuit; saturation tests;
13. Governor system steady state stability test;
14. Phase angle and magnitude of all PT and CT secondary voltages and currents to protective relays, indicating instruments and metering;
15. Auto stop/start sequence;
16. Level control system tests; and
17. Completion of all state and federal environmental testing requirements.

Standard Renewable Off System Non-Variable Power Purchase Agreement
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EXHIBIT E
SCHEDULE
[Attach currently in-effect Schedule 211]

STANDARD RENEWABLE IN SYSTEM VARIABLE RESOURCE POWER

PURCHASE AGREEMENT

THIS AGREEMENT, entered into this _____ day, _____ 201____, is between _____ ("Seller") and Portland General Electric Company ("PGE") (hereinafter each a "Party" or collectively, "Parties").

RECITALS

Seller intends to construct, own, operate and maintain a _____ facility for the generation of electric power located in _____ County, _____ with a Nameplate Capacity Rating of _____ kilowatt ("kW"), as further described in Exhibit A ("Facility"); and

Seller intends to operate the Facility as a "Qualifying Facility," as such term is defined in Section 3.1.3, below.

Seller shall sell and PGE shall purchase the entire Net Output, as such term is defined in Section 1.17, below, from the Facility in accordance with the terms and conditions of this Agreement.

AGREEMENT

NOW, THEREFORE, the Parties mutually agree as follows:

SECTION 1: DEFINITIONS

When used in this Agreement, the following terms shall have the following meanings:

1.1. "As-built Supplement" means the supplement to Exhibit A provided by Seller in accordance with Section 4.3 following completion of construction of the Facility, describing the Facility as actually built.

1.2. "Base Hours" is defined as the total number of hours in each Contract Year (8,760 or 8,784 for leap year).

1.3. "Billing Period" means a period between PGE's readings of its power purchase billing meter at the Facility in the normal course of PGE's business. Such periods typically vary and may not coincide with calendar months.

1.4. "Cash Escrow" means an agreement by two parties to place money into the custody of a third party for delivery to a grantee only after the fulfillment of the conditions specified.

1.5. "Commercial Operation Date" means the date that the Facility is deemed by PGE to be fully operational and reliable. PGE may, at its discretion, require, among other things, that all of the following events have occurred:

1.5.1. (facilities with nameplate under 500 kW exempt from following requirement) PGE has received a certificate addressed to PGE from a Licensed Professional Engineer ("LPE") acceptable to PGE in its reasonable judgment stating that the Facility is able to generate electric power reliably in accordance with the terms and conditions of this Agreement (certifications required under this Section 1.5 can be provided by one or more LPEs);

1.5.2. (facilities with nameplate under 500 kW exempt from following requirement) Start-Up Testing of the Facility has been completed in accordance with Section 1.26;

1.5.3. (facilities with nameplate under 500 kW exempt from following requirement) After PGE has received notice of completion of Start-Up Testing, PGE has received a certificate addressed to PGE from an LPE stating that the Facility has operated for testing purposes under this Agreement uninterrupted for a Test Period at a rate in kW of at least 75 percent of average annual Net Output divided by 8,760 based upon any sixty (60) minute period for the entire testing period. The Facility must provide ten (10) working days written notice to PGE prior to the start of the initial testing period. If the operation of the Facility is interrupted during this initial testing period or any subsequent testing period, the Facility shall promptly start a new Test Period and provide PGE forty-eight (48) hours written notice prior to the start of such testing period;

1.5.4. (facilities with nameplate under 500 kW exempt from following requirement) PGE has received a certificate addressed to PGE from an LPE stating that in accordance with the Generation Interconnection Agreement, all required interconnection facilities have been constructed all required interconnection tests have been completed; and the Facility is physically interconnected with PGE's electric system.

1.5.5. PGE has received a certificate addressed to PGE from an LPE stating that Seller has obtained all Required Facility Documents and, if requested by PGE in writing, has provided copies of any or all such requested Required Facility Documents;

1.6. "Contract Price" means the applicable price, including on-peak and off-peak prices, as selected by Seller in Section 5 and as specified in the Schedule.

1.7. "Contract Year" means each twelve (12) month period during the Term commencing upon the Commercial Operation Date or its anniversary during the Term, except the final contract year will be the period from the last anniversary of the Commercial Operation Date during the Term until the end of the Term.

1.8. "Effective Date" has the meaning set forth in Section 2.1.

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1.9. "Environmental Attributes" means any and all current or future credits, benefits, emissions reductions, environmental air quality credits, emissions reduction credits, offsets and allowances, howsoever entitled, resulting from the avoidance of the emission of any gas, chemical or other substance attributable to the Facility during the Term, or otherwise attributable to the generation, purchase, sale or use of energy from or by the Facility during the Term, including without limitation any of the same arising out of legislation or regulation concerned with oxides of nitrogen, sulfur or carbon, with particulate matter, soot or mercury, or implementing the United Nations Framework Convention on Climate Change (the "UNFCCC") or the Kyoto Protocol to the UNFCCC or crediting "early action" emissions reduction, or laws or regulations involving or administered by the Clean Air Markets Division of the Environmental Protection Agency or successor administrator, or any State or federal entity given jurisdiction over a program involving transferability of Environmental Attributes, including the Oregon Renewable Portfolio Standard, and any Green Tag Reporting Rights to such Environmental Attributes.

1.10. "Facility" has the meaning set forth in the Recitals.

1.11. "Generation Interconnection Agreement" means the generation interconnection agreement to be entered into separately between Seller and PGE, providing for the construction, operation, and maintenance of PGE's interconnection facilities required to accommodate deliveries of Seller's Net Output.

1.12. "Letter of Credit" means an engagement by a bank or other person made at the request of a customer that the issuer will honor drafts or other demands for payment upon compliance with the conditions specified in the letter of credit.

1.13. "Licensed Professional Engineer" or "LPE" means a person who is licensed to practice engineering in the state where the Facility is located, who has no economic relationship, association, or nexus with the Seller, and who is not a representative of a consulting engineer, contractor, designer or other individual involved in the development of the Facility, or of a manufacturer or supplier of any equipment installed in the Facility. Such Licensed Professional Engineer shall be licensed in an appropriate engineering discipline for the required certification being made and be acceptable to PGE in its reasonable judgment.

1.14. "Mechanical Availability Percentage" or "MAP" shall mean that percentage for any Contract Year for the Facility calculated in accordance with the following formula:

$$\text{MAP} = 100 \times (\text{Operational Hours}) / (\text{Base Hours})$$

1.15. "Nameplate Capacity Rating" means the maximum capacity of the Facility as stated by the manufacturer, expressed in kW, which shall not exceed 10,000 kW.

1.16. "Net Dependable Capacity" means the maximum capacity the Facility can sustain over a specified period modified for seasonal limitations, if any, and reduced by the capacity required for station service or auxiliaries.

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1.17. "Net Output" means all energy expressed in kWhs produced by the Facility, less station and other onsite use and less transformation and transmission losses. Net Output does not include any environmental attributes, imbalance power, or power from an integrating entity.

1.18. "Off-Peak Hours" has the meaning provided in the Schedule.

1.19. "On-Peak Hours" has the meaning provided in the Schedule.

1.20. "Operational Hours" for the Facility means the number of hours the Facility is potentially capable of producing power at its Nameplate Capacity Rating regardless of actual weather or seasonal conditions and the time of day or night, without any mechanical operating constraint or restriction, and potentially capable of delivering such power to the Point of Delivery. Hours during which an event of Force Majeure exists that prevent the Facility from producing or delivering power shall be considered Operational Hours.

1.21. "Point of Delivery" means the high side of the generation step up transformer(s) located at the point of interconnection between the Facility and PGE's distribution or transmission system, as specified in the Generation Interconnection Agreement.

1.22. "Prime Rate" means the publicly announced prime rate or reference rate for commercial loans to large businesses with the highest credit rating in the United States in effect from time to time quoted by Citibank, N.A. If a Citibank, N.A. prime rate is not available, the applicable Prime Rate shall be the announced prime rate or reference rate for commercial loans in effect from time to time quoted by a bank with \$10 billion or more in assets in New York City, N.Y., selected by the Party to whom interest based on the prime rate is being paid.

1.23. "Prudent Electrical Practices" means those practices, methods, standards and acts engaged in or approved by a significant portion of the electric power industry in the Western Electricity Coordinating Council that at the relevant time period, in the exercise of reasonable judgment in light of the facts known or that should reasonably have been known at the time a decision was made, would have been expected to accomplish the desired result in a manner consistent with good business practices, reliability, economy, safety and expedition, and which practices, methods, standards and acts reflect due regard for operation and maintenance standards recommended by applicable equipment suppliers and manufacturers, operational limits, and all applicable laws and regulations. Prudent Electrical Practices are not intended to be limited to the optimum practice, method, standard or act to the exclusion of all others, but rather to those practices, methods and acts generally acceptable or approved by a significant portion of the electric power generation industry in the relevant region, during the relevant period, as described in the immediate preceding sentence.

1.24. "Required Facility Documents" means all licenses, permits, authorizations, and agreements necessary for construction, operation, interconnection, and maintenance of the Facility including without limitation those set forth in Exhibit B.

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1.25. "Senior Lien" means a prior lien which has precedence as to the property under the lien over another lien or encumbrance.

1.26. "Start-Up Testing" means the completion of applicable required factory and start-up tests as set forth in Exhibit C.

1.27. "Step-in Rights" means the right of one party to assume an intervening position to satisfy all terms of an agreement in the event the other party fails to perform its obligations under the agreement.

1.28. "Schedule" shall mean PGE Schedule 211 filed with the Oregon Public Utilities Commission ("Commission") in effect on the Effective Date of this Agreement and attached hereto as Exhibit D, the terms of which are hereby incorporated by reference. In the event of a conflict between this Agreement and the Schedule, this Agreement shall apply.

1.29. "Term" shall mean the period beginning on the Effective Date and ending on the Termination Date.

1.30. "Test Period" shall mean a period of sixty (60) days or a commercially reasonable period determined by the Seller.

References to Recitals, Sections, and Exhibits are to be the recitals, sections and exhibits of this Agreement.

SECTION 2: TERM; COMMERCIAL OPERATION DATE

2.1 This Agreement shall become effective upon execution by both Parties ("Effective Date").

2.2 Time is of the essence of this Agreement, and Seller's ability to meet certain requirements prior to the Commercial Operation Date and to complete all requirements to establish the Commercial Operation Date is critically important. Therefore,

2.2.1 By _____ [date to be determined by the Seller] Seller shall begin initial deliveries of Net Output; and

2.2.2 By _____ [date to be determined by the Seller] Seller shall have completed all requirements under Section 1.5 and shall have established the Commercial Operation Date.

2.2.3 In the event Seller is unable to meet the requirements of Sections 2.2.1 and 2.2.2, PGE may terminate this agreement in accordance with Section 10.

2.3 This Agreement shall terminate on _____, _____ [date to be chosen by Seller], up to 20 years from the Effective Date, or the date the Agreement is

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terminated in accordance with Section 10 or 12, whichever is earlier ("Termination Date").

SECTION 3: REPRESENTATIONS AND WARRANTIES

3.1 Seller and PGE represent, covenant, and warrant as follows:

3.1.1 Seller warrants it is a _____ duly organized under the laws of _____.

3.1.2 Seller warrants that the execution and delivery of this Agreement does not contravene any provision of, or constitute a default under, any indenture, mortgage, or other material agreement binding on Seller or any valid order of any court, or any regulatory agency or other body having authority to which Seller is subject.

3.1.3 Seller warrants that the Facility is and shall for the Term of this Agreement continue to be a "Qualifying Facility" ("QF") as that term is defined in the version of 18 C.F.R. Part 292 in effect on the Effective Date. Seller has provided the appropriate QF certification, which may include a Federal Energy Regulatory Commission ("FERC") self-certification to PGE prior to PGE's execution of this Agreement. At any time during the Term of this Agreement, PGE may require Seller to provide PGE with evidence satisfactory to PGE in its reasonable discretion that the Facility continues to qualify as a QF under all applicable requirements.

3.1.4 Seller warrants that it has not within the past two (2) years been the debtor in any bankruptcy proceeding, and Seller is and will continue to be for the Term of this Agreement current on all of its financial obligations.

3.1.5 Seller warrants that during the Term of this Agreement, all of Seller's right, title and interest in and to the Facility shall be free and clear of all liens and encumbrances other than liens and encumbrances arising from third-party financing of the Facility other than workers', mechanics', suppliers' or similar liens, or tax liens, in each case arising in the ordinary course of business that are either not yet due and payable or that have been released by means of a performance bond acceptable to PGE posted within eight (8) calendar days of the commencement of any proceeding to foreclose the lien.

3.1.6 Seller warrants that it will design and operate the Facility consistent with Prudent Electrical Practices.

3.1.7 Seller warrants that the Facility has a Nameplate Capacity Rating not greater than 10,000 kW.

3.1.8 Seller warrants that Net Dependable Capacity of the Facility is _____ kW.

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3.1.9 Seller estimates that the average annual Net Output to be delivered by the Facility to PGE is _____ kilowatt-hours ("kWh"), which amount PGE will include in its resource planning.

3.1.10 Seller represents and warrants that the Facility shall achieve the following Mechanical Availability Percentages ("Guarantee of Mechanical Availability"):

3.1.10.1 Ninety-one percent (91%) for the first Contract Year;
and

3.1.10.2 Ninety-five percent (95%) beginning Contract Year two and extending throughout the remainder of the Term.

3.1.10.3 Annually, within 90 days of the end of each Contract Year Seller shall send to PGE a detailed written report demonstrating and providing evidence of the actual MAP for the previous Contract Year.

3.1.11 Seller will deliver from the Facility to PGE at the Point of Delivery Net Output not to exceed a maximum of _____ kWh of Net Output during each Contract Year ("Maximum Net Output").

3.1.12 Seller has entered into a Generation Interconnection Agreement for a term not less than the term of this Agreement.

3.1.13 PGE warrants that it has not within the past two (2) years been the debtor in any bankruptcy proceeding, and PGE is and will continue to be for the Term of this Agreement current on all of its financial obligations.

3.1.14 Seller warrants that (i) the Facility satisfies the eligibility requirements specified in the Definition of a Small Cogeneration Facility or Small Power Production Facility Eligible to Receive the Standard Renewable Rates and Standard Renewable PPA in PGE's Schedule and (ii) Seller will not make any changes in its ownership, control or management during the term of this Agreement that would cause it to not be in compliance with the Definition of a Small Cogeneration Facility or Small Power Production Facility Eligible to Receive the Standard Renewable Rates and Standard Renewable PPA in PGE's Schedule. Seller will provide, upon request by Buyer not more frequently than every 36 months, such documentation and information as may be reasonably required to establish Seller's continued compliance with such Definition. Buyer agrees to take reasonable steps to maintain the confidentiality of any portion of the above described documentation and information that the Seller identifies as confidential except Buyer will provide all such confidential information to the Public Utility Commission of Oregon upon the Commission's request.

3.1.15 Seller warrants that it will comply with all requirements necessary for all renewable energy credits associated with Net Output to be issued, monitored, accounted for, and transferred by and through the Western

Renewable Energy Generation Information System consistent with the provisions of OAR 330-160-0005 through OAR 330-160-0050.

SECTION 4: DELIVERY OF POWER AND ENVIRONMENTAL ATTRIBUTES

4.1 Commencing on the Effective Date and continuing through the Term of this Agreement, Seller shall sell to PGE the entire Net Output delivered from the Facility at the Point of Delivery.

4.2 PGE shall pay Seller the Contract Price for all delivered Net Output.

4.3 Upon completion of construction of the Facility, Seller shall provide PGE an As-built Supplement to specify the actual Facility as built. Seller shall not increase the Nameplate Capacity Rating above that specified in Exhibit A or increase the ability of the Facility to deliver Net Output in quantities in excess of the Net Dependable Capacity, or the Maximum Net Output as described in Section 3.1.11 above, through any means including, but not limited to, replacement, modification, or addition of existing equipment, except with prior written notice to PGE. In the event Seller increases the Nameplate Capacity Rating of the Facility to no more than 10,000 kW pursuant to this section, PGE shall pay the Contract Price for the additional delivered Net Output. In the event Seller increases the Nameplate Capacity Rating to greater than 10,000 kW, then Seller shall be required to enter into a new power purchase agreement for all delivered Net Output proportionally related to the increase of Nameplate Capacity above 10,000 kW.

4.4 All energy shall be scheduled according to the most current North America Energy Reliability Corporation (NERC) and Western Electricity Coordinating Council (WECC) scheduling rules and practices. The Parties' respective representatives shall maintain accurate dynamic schedule coordination; provided, however, that in the absence of such coordination, the schedule established by the exchange of preschedules shall be considered final. The final schedule shall be provided by Seller to PGE no later than 20 minutes prior to delivery for the first 30 minutes of an hour (e.g., 1:00 to 1:30) and 15 minutes prior to delivery for the second 30 minutes of the hour (e.g., 1:30 to 2:00). Seller and PGE shall maintain records of energy schedules for delivery for accounting and operating purposes. The final E-Tag shall be the controlling evidence of the Parties' schedule. Seller shall be obligated to meet a certain minimum scheduling accuracy level which shall measure the level of variation between the final schedule(s) for the applicable interval and the Net Output delivered for that same interval. The actual final schedules provided by Seller shall meet or exceed the scheduling accuracy level of 30-Minute Persistence Scheduling. For purposes of this section, the accuracy level of 30-Minute Persistence Scheduling is the accuracy level that would be achieved if Seller's final schedule(s) for the next schedule interval is the Seller's instantaneous actual generation from the Facility 30 minutes prior. For example, under 30-Minute Persistence Scheduling, the Seller's schedule for 2:00 to 2:30 is the Seller's Facility's actual instantaneous generation at 1:30 and the Seller's schedule for 2:30 to 3:00 is the Seller's Facility's actual instantaneous generation at 2:00. Seller shall maintain a minimum of two years records of Net Output and shall agree to allow PGE to have access to such records.

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4.5 To the extent not otherwise provided in the Generation Interconnection Agreement, all costs associated with the modifications to PGE's interconnection facilities or electric system occasioned by or related to the interconnection of the Facility with PGE's system, or any increase in generating capability of the Facility, or any increase of delivery of Net Dependable Capacity from the Facility, shall be borne by Seller.

4.6 Commencing on the Effective Date and continuing through the Term of this Agreement, Seller shall provide and PGE shall acquire the Environmental Attributes for the Contract Years specified in the Schedule. The Contract Price includes full payment for the Net Output and any Environmental Attributes transferred to PGE under this Agreement. With respect to Environmental Attributes not transferred to PGE under this Agreement ("Seller-Retained RECs") Seller may report under §1605(b) of the Energy Policy Act of 1992 or under any applicable program as belonging to Seller any of the Seller-Retained RECs, and PGE shall not report under such program that such Seller-Retained RECs belong to it. With respect to Environmental Attributes transferred to PGE under this Agreement ("Transferred RECs"), PGE may report under §1605(b) of the Energy Policy Act of 1992 or under any applicable program as belonging to it any of the Transferred RECs, and Seller shall not report under such program that such Transferred RECs belong to it.

SECTION 5: CONTRACT PRICE

PGE shall pay Seller for the price options 5.1, 5.2, 5.3 or 5.4, as selected below, pursuant to the Schedule. Seller shall indicate which price option it chooses by marking its choice below with an X. If Seller chooses the option in Section 5.1, it must mark below with a second X a single second option from Section 5.2, 5.3, or 5.4 for all Contract Years in excess of 15 until the end of the Term. Except as provided herein, Sellers selection is for the Term and shall not be changed during the Term.

- 5.1 Renewable Fixed Price for Variable Resources
- 5.2 Deadband Index Gas Price
- 5.3 Index Gas Price
- 5.4 Mid-C Index Rate Price

SECTION 6: OPERATION AND CONTROL

6.1 Seller shall operate and maintain the Facility in a safe manner in accordance with the Generation Interconnection Agreement, and Prudent Electrical Practices. PGE shall have no obligation to purchase Net Output from the Facility to the extent the interconnection of the Facility to PGE's electric system is disconnected, suspended or interrupted, in whole or in part, pursuant to the Generation Interconnection Agreement, or to the extent generation curtailment is required as a result of Seller's noncompliance with the Generation Interconnection Agreement. Seller is solely responsible for the operation and maintenance of the Facility. PGE shall not, by reason of its decision to inspect or not to inspect the Facility, or by any action or inaction taken with respect to any such inspection, assume or be held responsible for any liability or occurrence arising from the operation and maintenance by Seller of the Facility.

6.2 Seller agrees to provide sixty (60) days advance written notice of any scheduled maintenance that would require shut down of the Facility for any period of time.

6.3 If the Facility ceases operation for unscheduled maintenance, Seller immediately shall notify PGE of the necessity of such unscheduled maintenance, the time when such maintenance has occurred or will occur, and the anticipated duration of such maintenance. Seller shall take all reasonable measures and exercise its best efforts to avoid unscheduled maintenance, to limit the duration of such unscheduled maintenance, and to perform unscheduled maintenance during Off-Peak hours.

SECTION 7: CREDITWORTHINESS

In the event Seller: a) is unable to represent or warrant as required by Section 3 that it has not been a debtor in any bankruptcy proceeding within the past two (2) years; b) becomes such a debtor during the Term; or c) is not or will not be current on all its financial obligations, Seller shall immediately notify PGE and shall promptly (and in no less than 10 days after notifying PGE) provide default security in an amount reasonably acceptable to PGE in one of the following forms: Senior Lien, Step-in Rights, a Cash Escrow or Letter of Credit. The amount of such default security that shall be acceptable to PGE shall be equal to: (annual On Peak Hours) X (On Peak Price – Off Peak Price) X (Net Dependable Capacity). Notwithstanding the foregoing, in the event Seller is not current on construction related financial obligations, Seller shall notify PGE of such delinquency and PGE may, in its discretion, grant an exception to the requirements to provide default security if the QF has negotiated financial arrangements with the construction loan lender that mitigate Seller's financial risk to PGE.

SECTION 8: METERING

8.1 PGE shall design, furnish, install, own, inspect, test, maintain and replace all metering equipment at Seller's cost and as required pursuant to the Generation Interconnection Agreement.

8.2 Metering shall be performed at the location and in a manner consistent with this Agreement and as specified in the Generation Interconnection Agreement. All Net Output purchased hereunder shall be adjusted to account for electrical losses, if any, between the point of metering and the Point of Delivery, so that the purchased amount reflects the net amount of power flowing into PGE's system at the Point of Delivery.

8.3 PGE shall periodically inspect, test, repair and replace the metering equipment as provided in the Generation Interconnection Agreement. If any of the inspections or tests discloses an error exceeding two (2%) percent of the actual energy delivery, either fast or slow, proper correction, based upon the inaccuracy found, shall be made of previous readings for the actual period during which the metering equipment rendered inaccurate measurements if that period can be ascertained. If the actual period cannot be ascertained, the proper correction shall be made to the measurements taken during the time the metering equipment was in service since last tested, but not exceeding three (3) months, in the amount the metering equipment shall have been shown to be in error by such test. Any correction in billings or payments resulting from a correction in the meter records shall be made in the next monthly billing or payment rendered. Such correction, when made, shall constitute full adjustment of any claim between Seller and PGE arising out of such inaccuracy of metering equipment.

8.4 To the extent not otherwise provided in the Generation Interconnection Agreement, all of PGE's costs relating to all metering equipment installed to accommodate Seller's Facility shall be borne by Seller.

SECTION 9: BILLINGS, COMPUTATIONS AND PAYMENTS

9.1 On or before the thirtieth (30th) day following the end of each Billing Period, PGE shall send to Seller payment for Seller's deliveries of Net Output to PGE, together with computations supporting such payment. PGE may offset any such payment to reflect amounts owing from Seller to PGE pursuant to this Agreement, the Generation Interconnection Agreement, and any other agreement related to the Facility between the Parties or otherwise.

9.2 Any amounts owing after the due date thereof shall bear interest at the Prime Rate plus two percent (2%) from the date due until paid; provided, however, that the interest rate shall at no time exceed the maximum rate allowed by applicable law.

SECTION 10: DEFAULT, REMEDIES AND TERMINATION

10.1 In addition to any other event that may constitute a default under this Agreement, the following events shall constitute defaults under this Agreement:

10.1.1 Breach by Seller or PGE of a representation or warranty, except for Section 3.1.4, set forth in this Agreement.

10.1.2 Seller's failure to provide default security, if required by Section 7, prior to delivery of any Net Output to PGE or within 10 days of notice.

10.1.3 Seller's failure to meet the MAP established in Section 3.1.10 – Guarantee of Mechanical Availability for any single Contract Year or Seller's failure to provide any written report required by that section.

10.1.4 If Seller is no longer a Qualifying Facility.

10.1.5 Failure of PGE to make any required payment pursuant to Section 9.1.

10.2 In the event of a default hereunder, the non-defaulting party may immediately terminate this Agreement at its sole discretion by delivering written notice to the other Party, and, except for damages related to a default pursuant to Section 10.1.3 by a QF sized at 100 kW or smaller, may pursue any and all legal or equitable remedies provided by law or pursuant to this Agreement including damages related to the need to procure replacement power. Such termination shall be effective upon the date of delivery of notice, as provided in Section 21. The rights provided in this Section 10 are cumulative such that the exercise of one or more rights shall not constitute a waiver of any other rights.

10.3 If this Agreement is terminated as provided in this Section 10 PGE shall make all payments, within thirty (30) days, that, pursuant to the terms of this Agreement, are owed to Seller as of the time of receipt of notice of default. PGE shall not be required to pay Seller for any Net Output delivered by Seller after such notice of default.

10.4 In the event PGE terminates this Agreement pursuant to this Section 10, and Seller wishes to again sell Net Output to PGE following such termination, PGE in its sole discretion may require that Seller shall do so subject to the terms of this Agreement, including but not limited to the Contract Price until the Term of this Agreement (as set forth in Section 2.3) would have run in due course had the Agreement remained in effect. At such time Seller and PGE agree to execute a written document ratifying the terms of this Agreement.

10.5 Sections 10.1, 10.3, 10.4, 11, and 20.2 shall survive termination of this Agreement.

SECTION 11: INDEMNIFICATION AND LIABILITY

11.1 Seller agrees to defend, indemnify and hold harmless PGE, its directors, officers, agents, and representatives against and from any and all loss, claims, actions or suits, including costs and attorney's fees, both at trial and on appeal, resulting from, or arising out of or in any way connected with Seller's delivery of electric power to PGE or with the facilities at or prior to the Point of Delivery, or otherwise arising out of this Agreement, including without limitation any loss, claim, action or suit, for or on account of injury, bodily or otherwise, to, or death of, persons, or for damage to, or destruction or economic loss of property belonging to PGE, Seller or others, excepting to the extent such loss, claim, action or suit may be caused by the negligence of PGE, its directors, officers, employees, agents or representatives.

11.2 PGE agrees to defend, indemnify and hold harmless Seller, its directors, officers, agents, and representatives against and from any and all loss, claims, actions or suits, including costs and attorney's fees, both at trial and on appeal, resulting from, or arising out of or in any way connected with PGE's receipt of electric power from Seller or with the facilities at or after the Point of Delivery, or otherwise arising out of this Agreement, including without limitation any loss, claim, action or suit, for or on account of injury, bodily or otherwise, to, or death of, persons, or for damage to, or destruction or economic loss of property belonging to PGE, Seller or others, excepting to the extent such loss, claim, action or suit may be caused by the negligence of Seller, its directors, officers, employees, agents or representatives.

11.3 Nothing in this Agreement shall be construed to create any duty to, any standard of care with reference to, or any liability to any person not a Party to this Agreement. No undertaking by one Party to the other under any provision of this Agreement shall constitute the dedication of that Party's system or any portion thereof to the other Party or to the public, nor affect the status of PGE as an independent public utility corporation or Seller as an independent individual or entity.

11.4 NEITHER PARTY SHALL BE LIABLE TO THE OTHER FOR SPECIAL, PUNITIVE, INDIRECT OR CONSEQUENTIAL DAMAGES, WHETHER ARISING FROM CONTRACT, TORT (INCLUDING NEGLIGENCE), STRICT LIABILITY OR OTHERWISE.

SECTION 12: INSURANCE

12.1 Prior to the connection of the Facility to PGE's electric system, provided such Facility has a design capacity of 200 kW or more, Seller shall secure and continuously carry for the Term hereof, with an insurance company or companies rated not lower than "B+" by the A. M. Best Company, insurance policies for bodily injury and property damage liability. Such insurance shall include provisions or endorsements naming PGE, its directors, officers and employees as additional insureds; provisions that such insurance is primary insurance with respect to the interest of PGE and that any insurance maintained by PGE is excess and not contributory insurance with the insurance required hereunder; a cross-liability or severability of insurance interest clause; and provisions that such policies shall not be canceled or their limits of liability reduced without thirty (30) days' prior written notice to PGE. Initial limits of liability for all requirements under this section shall be \$1,000,000 million single limit, which limits may

be required to be increased or decreased by PGE as PGE determines in its reasonable judgment economic conditions or claims experience may warrant.

12.2 Prior to the connection of the Facility to PGE's electric system, provided such facility has a design capacity of 200 kW or more, Seller shall secure and continuously carry for the Term hereof, in an insurance company or companies rated not lower than "B+" by the A. M. Best Company, insurance acceptable to PGE against property damage or destruction in an amount not less than the cost of replacement of the Facility. Seller promptly shall notify PGE of any loss or damage to the Facility. Unless the Parties agree otherwise, Seller shall repair or replace the damaged or destroyed Facility, or if the facility is destroyed or substantially destroyed, it may terminate this Agreement. Such termination shall be effective upon receipt by PGE of written notice from Seller. Seller shall waive its insurers' rights of subrogation against PGE regarding Facility property losses.

12.3 Prior to the connection of the Facility to PGE's electric system and at all other times such insurance policies are renewed or changed, Seller shall provide PGE with a copy of each insurance policy required under this Section, certified as a true copy by an authorized representative of the issuing insurance company or, at the discretion of PGE, in lieu thereof, a certificate in a form satisfactory to PGE certifying the issuance of such insurance. If Seller fails to provide PGE with copies of such currently effective insurance policies or certificates of insurance, PGE at its sole discretion and without limitation of other remedies, may upon ten (10) days advance written notice by certified or registered mail to Seller either withhold payments due Seller until PGE has received such documents, or purchase the satisfactory insurance and offset the cost of obtaining such insurance from subsequent power purchase payments under this Agreement.

SECTION 13: FORCE MAJEURE

13.1 As used in this Agreement, "Force Majeure" or "an event of Force Majeure" means any cause beyond the reasonable control of the Seller or of PGE which, despite the exercise of due diligence, such Party is unable to prevent or overcome. By way of example, Force Majeure may include but is not limited to acts of God, fire, flood, storms, wars, hostilities, civil strife, strikes, and other labor disturbances, earthquakes, fires, lightning, epidemics, sabotage, restraint by court order or other delay or failure in the performance as a result of any action or inaction on behalf of a public authority which by the exercise of reasonable foresight such Party could not reasonably have been expected to avoid and by the exercise of due diligence, it shall be unable to overcome, subject, in each case, to the requirements of the first sentence of this paragraph. Force Majeure, however, specifically excludes the cost or availability of resources to operate the Facility, changes in market conditions that affect the price of energy or transmission, wind or water droughts, and obligations for the payment of money when due.

13.2 If either Party is rendered wholly or in part unable to perform its obligation under this Agreement because of an event of Force Majeure, that Party shall be

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excused from whatever performance is affected by the event of Force Majeure to the extent and for the duration of the Force Majeure, after which such Party shall recommence performance of such obligation, provided that:

13.2.1 the non-performing Party shall, promptly, but in any case within one (1) week after the occurrence of the Force Majeure, give the other Party written notice describing the particulars of the occurrence; and

13.2.2 the suspension of performance shall be of no greater scope and of no longer duration than is required by the Force Majeure; and

13.2.3 the non-performing Party uses its best efforts to remedy its inability to perform its obligations under this Agreement.

13.3 No obligations of either Party which arose before the Force Majeure causing the suspension of performance shall be excused as a result of the Force Majeure.

13.4 Neither Party shall be required to settle any strike, walkout, lockout or other labor dispute on terms which, in the sole judgment of the Party involved in the dispute, are contrary to the Party's best interests.

SECTION 14: SEVERAL OBLIGATIONS

Nothing contained in this Agreement shall ever be construed to create an association, trust, partnership or joint venture or to impose a trust or partnership duty, obligation or liability between the Parties. If Seller includes two or more parties, each such party shall be jointly and severally liable for Seller's obligations under this Agreement.

SECTION 15: CHOICE OF LAW

This Agreement shall be interpreted and enforced in accordance with the laws of the state of Oregon, excluding any choice of law rules which may direct the application of the laws of another jurisdiction.

SECTION 16: PARTIAL INVALIDITY AND PURPA REPEAL

It is not the intention of the Parties to violate any laws governing the subject matter of this Agreement. If any of the terms of the Agreement are finally held or determined to be invalid, illegal or void as being contrary to any applicable law or public policy, all other terms of the Agreement shall remain in effect. If any terms are finally held or determined to be invalid, illegal or void, the Parties shall enter into negotiations concerning the terms affected by such decision for the purpose of achieving conformity with requirements of any applicable law and the intent of the Parties to this Agreement.

In the event the Public Utility Regulatory Policies Act (PURPA) is repealed, this Agreement shall not terminate prior to the Termination Date, unless such termination is mandated by state or federal law.

SECTION 17: WAIVER

Any waiver at any time by either Party of its rights with respect to a default under this Agreement or with respect to any other matters arising in connection with this Agreement must be in writing, and such waiver shall not be deemed a waiver with respect to any subsequent default or other matter.

SECTION 18: GOVERNMENTAL JURISDICTION AND AUTHORIZATIONS

This Agreement is subject to the jurisdiction of those governmental agencies having control over either Party or this Agreement. Seller shall at all times maintain in effect all local, state and federal licenses, permits and other approvals as then may be required by law for the construction, operation and maintenance of the Facility, and shall provide upon request copies of the same to PGE.

SECTION 19: SUCCESSORS AND ASSIGNS

This Agreement and all of the terms hereof shall be binding upon and inure to the benefit of the respective successors and assigns of the Parties. No assignment hereof by either Party shall become effective without the written consent of the other Party being first obtained and such consent shall not be unreasonably withheld. Notwithstanding the foregoing, either Party may assign this Agreement without the other Party's consent as part of (a) a sale of all or substantially all of the assigning Party's assets, or (b) a merger, consolidation or other reorganization of the assigning Party.

SECTION 20: ENTIRE AGREEMENT

20.1 This Agreement supersedes all prior agreements, proposals, representations, negotiations, discussions or letters, whether oral or in writing, regarding PGE's purchase of Net Output from the Facility. No modification of this Agreement shall be effective unless it is in writing and signed by both Parties.

20.2 By executing this Agreement, Seller releases PGE from any third party claims related to the Facility, known or unknown, which may have arisen prior to the Effective Date.

SECTION 21: NOTICES

All notices except as otherwise provided in this Agreement shall be in writing, shall be directed as follows and shall be considered delivered if delivered in person or when deposited in the U.S. Mail, postage prepaid by certified or registered mail and return receipt requested:

To Seller: _____

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with a copy to:

To PGE: Contracts Manager
 QF Contracts, 3WTGBR06
 PGE - 121 SW Salmon St.
 Portland, Oregon 97204

21.2 The Parties may change the person to whom such notices are addressed, or their addresses, by providing written notices thereof in accordance with this Section 21.

IN WITNESS WHEREOF, the Parties hereto have caused this Agreement to be executed in their respective names as of the Effective Date.

PGE

By: _____
Name: _____
Title: _____
Date: _____

(Name Seller)

By: _____
Name: _____
Title: _____
Date: _____

EXHIBIT A
DESCRIPTION OF SELLER'S FACILITY

[Seller to Complete]

EXHIBIT B
REQUIRED FACILITY DOCUMENTS

[Seller list all permits and authorizations required for this project]

Sellers Generation Interconnection Agreement

EXHIBIT C START-UP TESTING

[Seller identify appropriate tests]

Required factory testing includes such checks and tests necessary to determine that the equipment systems and subsystems have been properly manufactured and installed, function properly, and are in a condition to permit safe and efficient start-up of the Facility, which may include but are not limited to (as applicable):

1. Pressure tests of all steam system equipment;
2. Calibration of all pressure, level, flow, temperature and monitoring instruments;
3. Operating tests of all valves, operators, motor starters and motor;
4. Alarms, signals, and fail-safe or system shutdown control tests;
5. Insulation resistance and point-to-point continuity tests;
6. Bench tests of all protective devices;
7. Tests required by manufacturer of equipment; and
8. Complete pre-parallel checks with PGE.

Required start-up test are those checks and tests necessary to determine that all features and equipment, systems, and subsystems have been properly designed, manufactured, installed and adjusted, function properly, and are capable of operating simultaneously in such condition that the Facility is capable of continuous delivery into PGE's electrical system, which may include but are not limited to (as applicable):

1. Turbine/generator mechanical runs including shaft, vibration, and bearing temperature measurements;
2. Running tests to establish tolerances and inspections for final adjustment of bearings, shaft run-outs;
3. Brake tests;
4. Energization of transformers;
5. Synchronizing tests (manual and auto);
6. Stator windings dielectric test;
7. Armature and field windings resistance tests;
8. Load rejection tests in incremental stages from 5, 25, 50, 75 and 100 percent load;
9. Heat runs;
10. Tests required by manufacturer of equipment;
11. Excitation and voltage regulation operation tests;
12. Open circuit and short circuit; saturation tests;
13. Governor system steady state stability test;
14. Phase angle and magnitude of all PT and CT secondary voltages and currents to protective relays, indicating instruments and metering;
15. Auto stop/start sequence;
16. Level control system tests; and
17. Completion of all state and federal environmental testing requirements

EXHIBIT D
SCHEDULE
[Attach currently in-effect Schedule 211]

**STANDARD RENEWABLE OFF SYSTEM INTEGRATED VARIABLE RESOURCE
POWER PURCHASE AGREEMENT**

THIS AGREEMENT, entered into this _____ day, _____ 201____, is between _____ ("Seller") and Portland General Electric Company ("PGE") (hereinafter each a "Party" or collectively, "Parties").

RECITALS

Seller intends to construct, own, operate and maintain a _____ facility for the generation of electric power located in _____ County, _____ with a Nameplate Capacity Rating of _____ kilowatt ("kW"), as further described in Exhibit A ("Facility"); and

Seller intends to operate the Facility as a "Qualifying Facility," as such term is defined in Section 3.1.3, below.

Seller shall sell and PGE shall purchase the entire Net Output, as such term is defined in Section 1.17, below, from the Facility in accordance with the terms and conditions of this Agreement.

AGREEMENT

NOW, THEREFORE, the Parties mutually agree as follows:

SECTION 1: DEFINITIONS

When used in this Agreement, the following terms shall have the following meanings:

1.1. "As-built Supplement" means the supplement to Exhibit A provided by Seller in accordance with Section 4.3 following completion of construction of the Facility, describing the Facility as actually built.

1.2. "Base Hours" is defined as the total number of hours in each Contract Year (8,760 or 8,784 for leap year).

1.3. "Billing Period" means a period between PGE's readings of its power purchase billing meter at the Facility in the normal course of PGE's business. Such periods typically vary and may not coincide with calendar months.

1.4. "Cash Escrow" means an agreement by two parties to place money into the custody of a third party for delivery to a grantee only after the fulfillment of the conditions specified.

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1.5. "Commercial Operation Date" means the date that the Facility is deemed by PGE to be fully operational and reliable. PGE may, at its discretion require, among other things, that all of the following events have occurred:

1.5.1. (facilities with nameplate under 500 kW exempt from following requirement) PGE has received a certificate addressed to PGE from a Licensed Professional Engineer ("LPE") acceptable to PGE in its reasonable judgment stating that the Facility is able to generate electric power reliably in accordance with the terms and conditions of this Agreement (certifications required under this Section 1.5 can be provided by one or more LPEs);

1.5.2. Start-Up Testing of the Facility has been completed in accordance with Section 1.26;

1.5.3. (facilities with nameplate under 500 kW exempt from following requirement) After PGE has received notice of completion of Start-Up Testing, PGE has received a certificate addressed to PGE from an LPE stating that the Facility has operated for testing purposes under this Agreement uninterrupted for a Test Period at a rate in kW of at least 75 percent of average annual Net Output divided by 8,760 based upon any sixty (60) minute period for the entire testing period. The Facility must provide ten (10) working days written notice to PGE prior to the start of the initial testing period. If the operation of the Facility is interrupted during this initial testing period or any subsequent testing period, the Facility shall promptly start a new Test Period and provide PGE forty-eight (48) hours written notice prior to the start of such testing period;

1.5.4. (facilities with nameplate under 500 kW exempt from following requirement) PGE has received a certificate addressed to PGE from an LPE stating that all required interconnection facilities have been constructed and all required interconnection tests have been completed;

1.5.5. PGE has received a certificate addressed to PGE from an LPE stating that Seller has obtained all Required Facility Documents and, if requested by PGE in writing, has provided copies of any or all such requested Required Facility Documents;

1.5.6. PGE has received a copy of the Transmission Agreement.

1.6. "Contract Price" means the applicable price, including on-peak and off-peak prices, as selected by Seller in Section 5 and as specified in the Schedule.

1.7. "Contract Year" means each twelve (12) month period commencing upon the Commercial Operation Date or its anniversary during the Term, except the final contract year will be the period from the last anniversary of the Commercial Operation Date during the Term until the end of the Term.

1.8. "Effective Date" has the meaning set forth in Section 2.1.

1.9. "Environmental Attributes" means any and all current or future credits, benefits, emissions reductions, environmental air quality credits, emissions reduction credits, offsets and allowances, howsoever entitled, resulting from the avoidance of the emission of any gas, chemical or other substance attributable to the Facility during the Term, or otherwise attributable to the generation, purchase, sale or use of energy from or by the Facility during the Term, including without limitation any of the same arising out of legislation or regulation concerned with oxides of nitrogen, sulfur or carbon, with particulate matter, soot or mercury, or implementing the United Nations Framework Convention on Climate Change (the "UNFCCC") or the Kyoto Protocol to the UNFCCC or crediting "early action" emissions reduction, or laws or regulations involving or administered by the Clean Air Markets Division of the Environmental Protection Agency or successor administrator, or any State or federal entity given jurisdiction over a program involving transferability of Environmental Attributes, including the Oregon Renewable Portfolio Standard, and any Green Tag Reporting Rights to such Environmental Attributes.

1.10. "Facility" has the meaning set forth in the Recitals.

1.11. "Generation Interconnection Agreement" means an agreement governing the interconnection of the Facility with _____ electric system.

1.12. "Letter of Credit" means an engagement by a bank or other person made at the request of a customer that the issuer will honor drafts or other demands for payment upon compliance with the conditions specified in the letter of credit.

1.13. "Licensed Professional Engineer" or "LPE" means a person who is licensed to practice engineering in the state where the Facility is located, who has no economic relationship, association, or nexus with the Seller, and who is not a representative of a consulting engineer, contractor, designer or other individual involved in the development of the Facility, or of a manufacturer or supplier of any equipment installed in the Facility. Such Licensed Professional Engineer shall be licensed in an appropriate engineering discipline for the required certification being made and be acceptable to PGE in its reasonable judgment.

1.14. "Mechanical Availability Percentage" or "MAP" shall mean that percentage for any Contract Year for the Facility calculated in accordance with the following formula:

$$\text{MAP} = 100 \times (\text{Operational Hours}) / (\text{Base Hours})$$

1.15. "Nameplate Capacity Rating" means the maximum capacity of the Facility as stated by the manufacturer, expressed in kW, which shall not exceed 10,000 kW.

1.16. "Net Dependable Capacity" means the maximum capacity the Facility can sustain over a specified period modified for seasonal limitations, if any, and reduced by the capacity required for station service or auxiliaries.

1.17. "Net Output" means all energy expressed in kWhs produced by the Facility, less station and other onsite use and less transformation and transmission

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losses. Net Output does not include any environmental attributes, imbalance power, or power from an integrating entity.

1.18. "Off-Peak Hours" has the meaning provided in the Schedule.

1.19. "On-Peak Hours" has the meaning provided in the Schedule.

1.20. "Operational Hours" for the Facility means the number of hours the Facility is potentially capable of producing power at its Nameplate Capacity Rating regardless of actual weather conditions, season and the time of day or night, without any mechanical operating constraint or restriction, and potentially capable of delivering such power to the Point of Delivery. Hours during which an event of Force Majeure exists that prevent the Facility from producing or delivering power shall be considered Operational Hours.

1.21. "Point of Delivery" means the PGE System.

1.22. "Prime Rate" means the publicly announced prime rate or reference rate for commercial loans to large businesses with the highest credit rating in the United States in effect from time to time quoted by Citibank, N.A. If a Citibank, N.A. prime rate is not available, the applicable Prime Rate shall be the announced prime rate or reference rate for commercial loans in effect from time to time quoted by a bank with \$10 billion or more in assets in New York City, N.Y., selected by the Party to whom interest based on the prime rate is being paid.

1.23. "Prudent Electrical Practices" means those practices, methods, standards and acts engaged in or approved by a significant portion of the electric power industry in the Western Electricity Coordinating Council that at the relevant time period, in the exercise of reasonable judgment in light of the facts known or that should reasonably have been known at the time a decision was made, would have been expected to accomplish the desired result in a manner consistent with good business practices, reliability, economy, safety and expedition, and which practices, methods, standards and acts reflect due regard for operation and maintenance standards recommended by applicable equipment suppliers and manufacturers, operational limits, and all applicable laws and regulations. Prudent Electrical Practices are not intended to be limited to the optimum practice, method, standard or act to the exclusion of all others, but rather to those practices, methods and acts generally acceptable or approved by a significant portion of the electric power generation industry in the relevant region, during the relevant period, as described in the immediate preceding sentence.

1.24. "Required Facility Documents" means all licenses, permits, authorizations, and agreements necessary for construction, operation, interconnection, and maintenance of the Facility including without limitation those set forth in Exhibit B.

1.25. "Senior Lien" means a prior lien which has precedence as to the property under the lien over another lien or encumbrance.

1.26. "Start-Up Testing" means the completion of applicable required factory and start-up tests as set forth in Exhibit C.

1.27. "Step-in Rights" means the right of one party to assume an intervening position to satisfy all terms of an agreement in the event the other party fails to perform its obligations under the agreement.

1.28. "Schedule" shall mean PGE Schedule 211 filed with the Oregon Public Utilities Commission ("Commission") in effect on the Effective Date of this Agreement and attached hereto as Exhibit D, the terms of which are hereby incorporated by reference. In the event of a conflict between this Agreement and the Schedule, this Agreement shall apply.

1.29. "Term" shall mean the period beginning on the Effective Date and ending on the Termination Date.

1.30. "Test Period" shall mean a period of sixty (60) days or a commercially reasonable period determined by the Seller.

1.31. "Transmission Agreement" means an agreement executed by the Seller and the Transmission Provider(s) for Transmission Services.

1.32. "Transmission Curtailment" means a limitation on Seller's ability to deliver any portion of the scheduled energy to PGE due to the unavailability of transmission to the Point of Delivery or a generating facility limitation by a Transmission Provider (for any reason other than Force Majeure).

1.33. "Transmission Curtailment Replacement Energy Cost" means the greater of zero or the amount calculated as: ((Dow Jones Mid C Index Price – Contract Price) X curtailed energy) for periods of Transmission Curtailment.

1.34. "Transmission Provider(s)" means the signatory (other than the Seller) to the Transmission Agreement.

1.35. "Transmission Services" means any and all services (including but not limited to ancillary services and control area services) required for the firm transmission and delivery of Energy from the Facility to the Point of Delivery for a term not less than the Term of this Agreement.

References to Recitals, Sections, and Exhibits are to be the recitals, sections and exhibits of this Agreement.

SECTION 2: TERM; COMMERCIAL OPERATION DATE

2.1 This Agreement shall become effective upon execution by both Parties ("Effective Date").

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2.2 Time is of the essence of this Agreement, and Seller's ability to meet certain requirements prior to the Commercial Operation Date and to complete all requirements to establish the Commercial Operation Date is critically important. Therefore,

2.2.1 By _____ [date to be determined by the Seller] Seller shall begin initial deliveries of Net Output; and

2.2.2 By _____ [date to be determined by the Seller] Seller shall have completed all requirements under Section 1.5 and shall have established the Commercial Operation Date.

2.2.3 In the event Seller is unable to meet the requirements of Sections 2.2.1 and 2.2.2, PGE may terminate this agreement in accordance with Section 9.

2.3 This Agreement shall terminate on _____, _____ [date to be chosen by Seller], up to 20 years from the Effective Date, or the date the Agreement is terminated in accordance with Section 9 or 12, whichever is earlier ("Termination Date").

SECTION 3: REPRESENTATIONS AND WARRANTIES

3.1 Seller and PGE represent, covenant, and warrant as follows:

3.1.1 Seller warrants it is a _____ duly organized under the laws of _____.

3.1.2 Seller warrants that the execution and delivery of this Agreement does not contravene any provision of, or constitute a default under, any indenture, mortgage, or other material agreement binding on Seller or any valid order of any court, or any regulatory agency or other body having authority to which Seller is subject.

3.1.3 Seller warrants that the Facility is and shall for the Term of this Agreement continue to be a "Qualifying Facility" ("QF") as that term is defined in the version of 18 C.F.R. Part 292 in effect on the Effective Date. Seller has provided the appropriate QF certification, which may include a Federal Energy Regulatory Commission ("FERC") self-certification to PGE prior to PGE's execution of this Agreement. At any time during the Term of this Agreement, PGE may require Seller to provide PGE with evidence satisfactory to PGE in its reasonable discretion that the Facility continues to qualify as a QF under all applicable requirements.

3.1.4 Seller warrants that it has not within the past two (2) years been the debtor in any bankruptcy proceeding, and Seller is and will continue to be for the Term of this Agreement current on all of its financial obligations.

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3.1.5 Seller warrants that during the Term of this Agreement, all of Seller's right, title and interest in and to the Facility shall be free and clear of all liens and encumbrances other than liens and encumbrances arising from third-party financing of the Facility other than workers', mechanics', suppliers' or similar liens, or tax liens, in each case arising in the ordinary course of business that are either not yet due and payable or that have been released by means of a performance bond acceptable to PGE posted within eight (8) calendar days of the commencement of any proceeding to foreclose the lien.

3.1.6 Seller warrants that it will design and operate the Facility consistent with Prudent Electrical Practices.

3.1.7 Seller warrants that the Facility has a Nameplate Capacity Rating not greater than 10,000 kW.

3.1.8 Seller warrants that Net Dependable Capacity of the Facility is _____ kW.

3.1.9 Seller estimates that the average annual Net Output to be delivered by the Facility to PGE is _____ kilowatt-hours ("kWh"), which amount PGE will include in its resource planning.

3.1.10 Seller represents and warrants that the Facility shall achieve the following Mechanical Availability Percentages ("Guarantee of Mechanical Availability"):

3.1.10.1 Ninety-one percent (91%) for the first Contract Year;
and

3.1.10.2 Ninety-five percent (95%) beginning Contract Year two and extending throughout the remainder of the Term.

3.1.10.3 Annually, within 90 days of the end of each Contract Year, Seller shall send to PGE a detailed written report demonstrating and providing evidence of the actual MAP for the previous Contract Year.

3.1.11 Seller will deliver from the Facility to PGE at the Point of Delivery Net Output not to exceed a maximum of _____ kWh of Net Output during each Contract Year ("Maximum Net Output"). The cost of delivering energy from the Facility to PGE is the sole responsibility of the Seller.

3.1.12 Seller has entered into a Generation Interconnection Agreement for a term not less than the term of this Agreement.

3.1.13 PGE warrants that it has not within the past two (2) years been the debtor in any bankruptcy proceeding, and PGE is and will continue to be for the Term of this Agreement current on all of its financial obligations.

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3.1.14 Seller warrants that (i) the Facility satisfies the eligibility requirements specified in the Definition of a Small Cogeneration Facility or Small Power Production Facility Eligible to Receive the Standard Renewable Rates and Standard Renewable PPA in PGE's Schedule and (ii) Seller will not make any changes in its ownership, control or management during the term of this Agreement that would cause it to not be in compliance with the Definition of a Small Cogeneration Facility or Small Power Production Facility Eligible to Receive the Standard Renewable Rates and Standard Renewable PPA in PGE's Schedule. Seller will provide, upon request by Buyer not more frequently than every 36 months, such documentation and information as may be reasonably required to establish Seller's continued compliance with such Definition. Buyer agrees to take reasonable steps to maintain the confidentiality of any portion of the above described documentation and information that the Seller identifies as confidential except Buyer will provide all such confidential information to the Public Utility Commission of Oregon upon the Commission's request.

3.1.15 Seller warrants that it will comply with all requirements necessary for all renewable energy credits associated with Net Output to be issued, monitored, accounted for, and transferred by and through the Western Renewable Energy Generation Information System consistent with the provisions of OAR 330-160-0005 through OAR 330-160-0050.

SECTION 4: DELIVERY OF POWER AND ENVIRONMENTAL ATTRIBUTES

4.1 Commencing on the Effective Date and continuing through the Term of this Agreement, Seller shall sell to PGE the entire Net Output delivered from the Facility at the Point of Delivery.

4.2 PGE shall pay Seller the Contract Price for all delivered Net Output.

4.3 Upon completion of construction of the Facility, Seller shall provide PGE an As-built Supplement to specify the actual Facility as built. Seller shall not increase the Nameplate Capacity Rating above that specified in Exhibit A or increase the ability of the Facility to deliver Net Output in quantities in excess of the Net Dependable Capacity, or the Maximum Net Output as described in Section 3.1.11 above, through any means including, but not limited to, replacement, modification, or addition of existing equipment, except with prior written notice to PGE. In the event Seller increases the Nameplate Capacity Rating of the Facility to no more than 10,000 kW pursuant to this section, PGE shall pay the Contract Price for the additional delivered Net Output. In the event Seller increases the Nameplate Capacity Rating to greater than 10,000 kW, then Seller shall be required to enter into a new power purchase agreement for all delivered Net Output proportionally related to the increase of Nameplate Capacity above 10,000 kW.

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4.4 All energy shall be scheduled according to the most current North America Energy Reliability Corporation (NERC) and Western Electricity Coordinating Council (WECC) scheduling rules and practices. The Parties' respective representatives shall maintain hourly real-time schedule coordination; provided, however, that in the absence of such coordination, the schedule established by the exchange of preschedules shall be considered final. Seller and PGE shall maintain records of energy schedules for accounting and operating purposes. Deliveries shall not be made on a dynamic basis, and Seller shall insure that all deliveries of energy under this Agreement will be equal on an hourly basis to the amounts scheduled in the final schedule. Seller shall bear the cost of any transmission services, including but not limited to imbalance services, necessary to insure that energy deliveries under this Agreement are equal on an hourly basis to the amount of energy scheduled for each hour in the final schedule. The final schedule shall be provided by Seller to PGE no later than 20 minutes prior to delivery for the first 30 minutes of an hour (e.g., 1:00 to 1:30) and 15 minutes prior to delivery for the second 30 minutes of the hour (e.g. 1:30 to 2:00). The final E-Tag shall be the controlling evidence of the Parties' final schedule. Seller shall make commercially reasonable efforts to schedule in any hour an amount equal to its expected Net Output for such hour. Seller shall maintain a minimum of two years records of Net Output and shall agree to allow PGE to have access to such records and to imbalance information kept by the Transmission Provider.

4.5 Commencing on the Effective Date and continuing through the Term of this Agreement, Seller shall provide and PGE shall acquire the Environmental Attributes for the Contract Years specified in the Schedule. The Contract Price includes full payment for the Net Output and any Environmental Attributes transferred to PGE under this Agreement. With respect to Environmental Attributes not transferred to PGE under this Agreement ("Seller-Retained RECs") Seller may report under §1605(b) of the Energy Policy Act of 1992 or under any applicable program as belonging to Seller any of the Seller-Retained RECs, and PGE shall not report under such program that such Seller-Retained RECs belong to it. With respect to Environmental Attributes transferred to PGE under this Agreement ("Transferred RECs"), PGE may report under §1605(b) of the Energy Policy Act of 1992 or under any applicable program as belonging to it any of the Transferred RECs, and Seller shall not report under such program that such Transferred RECs belong to it.

SECTION 5: CONTRACT PRICE

PGE shall pay Seller for the price options 5.1, 5.2, 5.3 or 5.4, as selected below, pursuant to the Schedule. Seller shall indicate which price option it chooses by marking its choice below with an X. If Seller chooses the option in Section 5.1, it must mark below with a second X a single second option from Section 5.2, 5.3, or 5.4 for all Contract Years in excess of 15 until the end of the Term. Except as provided herein, Seller's selection is for the Term and shall not be changed during the Term.

5.1 Renewable Fixed Price for Non Variable or Integrated Variable Resources

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- 5.2 _____ Deadband Index Gas Price
- 5.3 _____ Index Gas Price
- 5.4 _____ Mid-C Index Rate Price

SECTION 6: OPERATION AND CONTROL

6.1 Seller shall operate and maintain the Facility in a safe manner in accordance with the Generation Interconnection Agreement, and Prudent Electrical Practices. PGE shall have no obligation to purchase Net Output from the Facility to the extent the interconnection of the Facility to PGE's electric system is disconnected, suspended or interrupted, in whole or in part, pursuant to the Generation Interconnection Agreement, or to the extent generation curtailment is required as a result of Seller's noncompliance with the Generation Interconnection Agreement. Seller is solely responsible for the operation and maintenance of the Facility. PGE shall not, by reason of its decision to inspect or not to inspect the Facility, or by any action or inaction taken with respect to any such inspection, assume or be held responsible for any liability or occurrence arising from the operation and maintenance by Seller of the Facility.

6.2 Seller agrees to provide sixty (60) days advance written notice of any scheduled maintenance that would require shut down of the Facility for any period of time.

6.3 If the Facility ceases operation for unscheduled maintenance, Seller immediately shall notify PGE of the necessity of such unscheduled maintenance, the time when such maintenance has occurred or will occur, and the anticipated duration of such maintenance. Seller shall take all reasonable measures and exercise its best efforts to avoid unscheduled maintenance, to limit the duration of such unscheduled maintenance, and to perform unscheduled maintenance during Off-Peak hours.

SECTION 7: CREDITWORTHINESS

In the event Seller: a) is unable to represent or warrant as required by Section 3 that it has not been a debtor in any bankruptcy proceeding within the past two (2) years; b) becomes such a debtor during the Term; or c) is not or will not be current on all its financial obligations, Seller shall immediately notify PGE and shall promptly (and in no less than 10 days after notifying PGE) provide default security in an amount reasonably acceptable to PGE in one of the following forms: Senior Lien, Step-in Rights, a Cash Escrow or Letter of Credit. The amount of such default security that shall be acceptable to PGE shall be equal to: (annual On Peak Hours) X (On Peak Price – Off Peak Price) X (Net Dependable Capacity). Notwithstanding the foregoing, in the event Seller is not current on construction related financial obligations, Seller shall notify PGE of such delinquency and PGE may, in its discretion, grant an exception to the requirements to provide default security if the QF has negotiated financial arrangements with the construction loan lender that mitigate Seller's financial risk to PGE.

SECTION 8: BILLINGS, COMPUTATIONS AND PAYMENTS

8.1 On or before the thirtieth (30th) day following the end of each Billing Period, PGE shall send to Seller payment for Seller's deliveries of Net Output to PGE, together with computations supporting such payment. PGE may offset any such payment to reflect amounts owing from Seller to PGE pursuant to this Agreement and any other agreement related to the Facility between the Parties or otherwise.

8.2 Any amounts owing after the due date thereof shall bear interest at the Prime Rate plus two percent (2%) from the date due until paid; provided, however, that the interest rate shall at no time exceed the maximum rate allowed by applicable law.

SECTION 9: DEFAULT, REMEDIES AND TERMINATION

9.1 In addition to any other event that may constitute a default under this Agreement, the following events shall constitute defaults under this Agreement:

9.1.1 Breach by Seller or PGE of a representation or warranty, except for Section 3.1.4, set forth in this Agreement.

9.1.2 Seller's failure to provide default security, if required by Section 7, prior to delivery of any Net Output to PGE or within 10 days of notice.

9.1.3 Seller's failure to meet the MAP established in Section 3.1.10 – Guarantee of Mechanical Availability for any single Contract Year or Seller's failure to provide any written report required by that section.

9.1.4 If Seller is no longer a Qualifying Facility.

9.1.5 Failure of PGE to make any required payment pursuant to Section 8.1.

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9.2 In the event of a default hereunder, the non-defaulting party may immediately terminate this Agreement at its sole discretion by delivering written notice to the other Party, and, except for damages related to a default pursuant to Section 9.1.3 by a QF sized at 100 kW or smaller, may pursue any and all legal or equitable remedies provided by law or pursuant to this Agreement including damages related to the need to procure replacement power. Such termination shall be effective upon the date of delivery of notice, as provided in Section 21. The rights provided in this Section 9 are cumulative such that the exercise of one or more rights shall not constitute a waiver of any other rights.

9.3 If this Agreement is terminated as provided in this Section 9, PGE shall make all payments, within thirty (30) days, that, pursuant to the terms of this Agreement, are owed to Seller as of the time of receipt of notice of default. PGE shall not be required to pay Seller for any Net Output delivered by Seller after such notice of default.

9.4 In the event PGE terminates this Agreement pursuant to this Section 9, and Seller wishes to again sell Net Output to PGE following such termination, PGE in its sole discretion may require that Seller shall do so subject to the terms of this Agreement, including but not limited to the Contract Price until the Term of this Agreement (as set forth in Section 2.3) would have run in due course had the Agreement remained in effect. At such time Seller and PGE agree to execute a written document ratifying the terms of this Agreement.

9.5 Sections 9.1, 9.3, 9.4, 11, and 20.2 shall survive termination of this Agreement.

SECTION 10: TRANSMISSION CURTAILMENTS

10.1 Seller shall give PGE notice as soon as reasonably practicable of any Transmission Curtailment that is likely to affect Seller's ability to deliver any portion of energy scheduled pursuant to Sections 4.4 of this Agreement.

10.2 If as the result of a Transmission Curtailment, Seller does not deliver any portion of energy (including real-time adjustments), scheduled pursuant to Section 4.4 of this Agreement, Seller shall pay PGE the Transmission Curtailment Replacement Energy Cost for the number of MWh of energy reasonably determined by PGE as the difference between (i) the scheduled energy that would have been delivered to PGE under this Agreement during the period of Transmission Curtailment and (ii) the actual energy, if any, that was delivered to PGE for the period.

SECTION 11: INDEMNIFICATION AND LIABILITY

11.1 Seller agrees to defend, indemnify and hold harmless PGE, its directors, officers, agents, and representatives against and from any and all loss, claims, actions or suits, including costs and attorney's fees, both at trial and on appeal, resulting from, or arising out of or in any way connected with Seller's delivery of electric power to PGE or with the facilities at or prior to the Point of Delivery, or otherwise arising out of this Agreement, including without limitation any loss, claim, action or suit, for or on account of injury, bodily or otherwise, to, or death of, persons, or for damage to, or destruction or economic loss of property belonging to PGE, Seller or others, excepting to the extent such loss, claim, action or suit may be caused by the negligence of PGE, its directors, officers, employees, agents or representatives.

11.2 PGE agrees to defend, indemnify and hold harmless Seller, its directors, officers, agents, and representatives against and from any and all loss, claims, actions or suits, including costs and attorney's fees, both at trial and on appeal, resulting from, or arising out of or in any way connected with PGE's receipt of electric power from Seller or with the facilities at or after the Point of Delivery, or otherwise arising out of this Agreement, including without limitation any loss, claim, action or suit, for or on account of injury, bodily or otherwise, to, or death of, persons, or for damage to, or destruction or economic loss of property belonging to PGE, Seller or others, excepting to the extent such loss, claim, action or suit may be caused by the negligence of Seller, its directors, officers, employees, agents or representatives.

11.3 Nothing in this Agreement shall be construed to create any duty to, any standard of care with reference to, or any liability to any person not a Party to this Agreement. No undertaking by one Party to the other under any provision of this Agreement shall constitute the dedication of that Party's system or any portion thereof to the other Party or to the public, nor affect the status of PGE as an independent public utility corporation or Seller as an independent individual or entity.

11.4 NEITHER PARTY SHALL BE LIABLE TO THE OTHER FOR SPECIAL, PUNITIVE, INDIRECT OR CONSEQUENTIAL DAMAGES, WHETHER ARISING FROM CONTRACT, TORT (INCLUDING NEGLIGENCE), STRICT LIABILITY OR OTHERWISE.

SECTION 12: INSURANCE

12.1 Prior to the connection of the Facility to PGE's electric system, provided such Facility has a design capacity of 200 kW or more, Seller shall secure and continuously carry for the Term hereof, with an insurance company or companies rated not lower than "B+" by the A. M. Best Company, insurance policies for bodily injury and property damage liability. Such insurance shall include provisions or endorsements naming PGE, its directors, officers and employees as additional insureds; provisions that such insurance is primary insurance with respect to the interest of PGE and that any insurance maintained by PGE is excess and not contributory insurance with the insurance required hereunder; a cross-liability or severability of insurance interest

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clause; and provisions that such policies shall not be canceled or their limits of liability reduced without thirty (30) days' prior written notice to PGE. Initial limits of liability for all requirements under this section shall be \$1,000,000 million single limit, which limits may be required to be increased or decreased by PGE as PGE determines in its reasonable judgment economic conditions or claims experience may warrant.

12.2 Prior to the connection of the Facility to PGE's electric system, provided such facility has a design capacity of 200 kW or more, Seller shall secure and continuously carry for the Term hereof, in an insurance company or companies rated not lower than "B+" by the A. M. Best Company, insurance acceptable to PGE against property damage or destruction in an amount not less than the cost of replacement of the Facility. Seller promptly shall notify PGE of any loss or damage to the Facility. Unless the Parties agree otherwise, Seller shall repair or replace the damaged or destroyed Facility, or if the facility is destroyed or substantially destroyed, it may terminate this Agreement. Such termination shall be effective upon receipt by PGE of written notice from Seller. Seller shall waive its insurers' rights of subrogation against PGE regarding Facility property losses.

12.3 Prior to the connection of the Facility to PGE's electric system and at all other times such insurance policies are renewed or changed, Seller shall provide PGE with a copy of each insurance policy required under this Section, certified as a true copy by an authorized representative of the issuing insurance company or, at the discretion of PGE, in lieu thereof, a certificate in a form satisfactory to PGE certifying the issuance of such insurance. If Seller fails to provide PGE with copies of such currently effective insurance policies or certificates of insurance, PGE at its sole discretion and without limitation of other remedies, may upon ten (10) days advance written notice by certified or registered mail to Seller either withhold payments due Seller until PGE has received such documents, or purchase the satisfactory insurance and offset the cost of obtaining such insurance from subsequent power purchase payments under this Agreement.

SECTION 13: FORCE MAJEURE

13.1 As used in this Agreement, "Force Majeure" or "an event of Force Majeure" means any cause beyond the reasonable control of the Seller or of PGE which, despite the exercise of due diligence, such Party is unable to prevent or overcome. By way of example, Force Majeure may include but is not limited to acts of God, fire, flood, storms, wars, hostilities, civil strife, strikes, and other labor disturbances, earthquakes, fires, lightning, epidemics, sabotage, restraint by court order or other delay or failure in the performance as a result of any action or inaction on behalf of a public authority which by the exercise of reasonable foresight such Party could not reasonably have been expected to avoid and by the exercise of due diligence, it shall be unable to overcome, subject, in each case, to the requirements of the first sentence of this paragraph. Force Majeure, however, specifically excludes the cost or availability of resources to operate the Facility, changes in market conditions that affect the price of energy or transmission, wind or water droughts, and obligations for the payment of money when due.

13.2 If either Party is rendered wholly or in part unable to perform its obligation under this Agreement because of an event of Force Majeure, that Party shall be excused from whatever performance is affected by the event of Force Majeure to the extent and for the duration of the Force Majeure, after which such Party shall recommence performance of such obligation, provided that:

13.2.1 the non-performing Party, shall, promptly, but in any case within one (1) week after the occurrence of the Force Majeure, give the other Party written notice describing the particulars of the occurrence; and

13.2.2 the suspension of performance shall be of no greater scope and of no longer duration than is required by the Force Majeure; and

13.2.3 the non-performing Party uses its best efforts to remedy its inability to perform its obligations under this Agreement.

13.3 No obligations of either Party which arose before the Force Majeure causing the suspension of performance shall be excused as a result of the Force Majeure.

13.4 Neither Party shall be required to settle any strike, walkout, lockout or other labor dispute on terms which, in the sole judgment of the Party involved in the dispute, are contrary to the Party's best interests.

SECTION 14: SEVERAL OBLIGATIONS

Nothing contained in this Agreement shall ever be construed to create an association, trust, partnership or joint venture or to impose a trust or partnership duty, obligation or liability between the Parties. If Seller includes two or more parties, each such party shall be jointly and severally liable for Seller's obligations under this Agreement.

SECTION 15: CHOICE OF LAW

This Agreement shall be interpreted and enforced in accordance with the laws of the state of Oregon, excluding any choice of law rules which may direct the application of the laws of another jurisdiction.

SECTION 16: PARTIAL INVALIDITY AND PURPA REPEAL

It is not the intention of the Parties to violate any laws governing the subject matter of this Agreement. If any of the terms of the Agreement are finally held or determined to be invalid, illegal or void as being contrary to any applicable law or public policy, all other terms of the Agreement shall remain in effect. If any terms are finally held or determined to be invalid, illegal or void, the Parties shall enter into negotiations concerning the terms affected by such decision for the purpose of achieving conformity with requirements of any applicable law and the intent of the Parties to this Agreement.

In the event the Public Utility Regulatory Policies Act (PURPA) is repealed, this Agreement shall not terminate prior to the Termination Date, unless such termination is mandated by state or federal law.

SECTION 17: WAIVER

Any waiver at any time by either Party of its rights with respect to a default under this Agreement or with respect to any other matters arising in connection with this Agreement must be in writing, and such waiver shall not be deemed a waiver with respect to any subsequent default or other matter.

SECTION 18: GOVERNMENTAL JURISDICTION AND AUTHORIZATIONS

This Agreement is subject to the jurisdiction of those governmental agencies having control over either Party or this Agreement. Seller shall at all times maintain in effect all local, state and federal licenses, permits and other approvals as then may be required by law for the construction, operation and maintenance of the Facility, and shall provide upon request copies of the same to PGE.

SECTION 19: SUCCESSORS AND ASSIGNS

This Agreement and all of the terms hereof shall be binding upon and inure to the benefit of the respective successors and assigns of the Parties. No assignment hereof by either Party shall become effective without the written consent of the other Party being first obtained and such consent shall not be unreasonably withheld. Notwithstanding the foregoing, either Party may assign this Agreement without the other Party's consent as part of (a) a sale of all or substantially all of the assigning Party's assets, or (b) a merger, consolidation or other reorganization of the assigning Party.

SECTION 20: ENTIRE AGREEMENT

20.1 This Agreement supersedes all prior agreements, proposals, representations, negotiations, discussions or letters, whether oral or in writing, regarding PGE's purchase of Net Output from the Facility. No modification of this Agreement shall be effective unless it is in writing and signed by both Parties.

20.2 By executing this Agreement, Seller releases PGE from any third party claims related to the Facility, known or unknown, which may have arisen prior to the Effective Date.

SECTION 21: NOTICES

All notices except as otherwise provided in this Agreement shall be in writing, shall be directed as follows and shall be considered delivered if delivered in person or when deposited in the U.S. Mail, postage prepaid by certified or registered mail and return receipt requested:

To Seller: _____

Standard Renewable Off System Integrated Variable Resource Power Purchase Agreement
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with a copy to:

To PGE: Contracts Manager
 QF Contracts, 3WTCBR06
 PGE - 121 SW Salmon St.
 Portland, Oregon 97204

21.2 The Parties may change the person to whom such notices are addressed, or their addresses, by providing written notices thereof in accordance with this Section 21.

IN WITNESS WHEREOF, the Parties hereto have caused this Agreement to be executed in their respective names as of the Effective Date.

PGE

By: _____
Name: _____
Title: _____
Date: _____

(Name Seller)

By: _____
Name: _____
Title: _____
Date: _____

Standard Renewable Off System Integrated Variable Power Purchase Agreement
Schedule 211
Effective _____

EXHIBIT A
DESCRIPTION OF SELLER'S FACILITY

[Seller to Complete]

Standard Renewable Off System Integrated Variable Resource Power Purchase Agreement

EXHIBIT B
REQUIRED FACILITY DOCUMENTS

[Seller list all permits and authorizations required for this project]

Sellers Generation Interconnection Agreement

EXHIBIT C START-UP TESTING

[Seller identify appropriate tests]

Required factory testing includes such checks and tests necessary to determine that the equipment systems and subsystems have been properly manufactured and installed, function properly, and are in a condition to permit safe and efficient start-up of the Facility, which may include but are not limited to (as applicable):

1. Pressure tests of all steam system equipment;
2. Calibration of all pressure, level, flow, temperature and monitoring instruments;
3. Operating tests of all valves, operators, motor starters and motor;
4. Alarms, signals, and fail-safe or system shutdown control tests;
5. Insulation resistance and point-to-point continuity tests;
6. Bench tests of all protective devices;
7. Tests required by manufacturer of equipment; and
8. Complete pre-parallel checks with PGE.

Required start-up test are those checks and tests necessary to determine that all features and equipment, systems, and subsystems have been properly designed, manufactured, installed and adjusted, function properly, and are capable of operating simultaneously in such condition that the Facility is capable of continuous delivery into PGE's electrical system, which may include but are not limited to (as applicable):

1. Turbine/generator mechanical runs including shaft, vibration, and bearing temperature measurements;
2. Running tests to establish tolerances and inspections for final adjustment of bearings, shaft run-outs;
3. Brake tests;
4. Energization of transformers;
5. Synchronizing tests (manual and auto);
6. Stator windings dielectric test;
7. Armature and field windings resistance tests;
8. Load rejection tests in incremental stages from 5, 25, 50, 75 and 100 percent load;
9. Heat runs;
10. Tests required by manufacturer of equipment;
11. Excitation and voltage regulation operation tests;
12. Open circuit and short circuit; saturation tests;
13. Governor system steady state stability test;
14. Phase angle and magnitude of all PT and CT secondary voltages and currents to protective relays, indicating instruments and metering;
15. Auto stop/start sequence;
16. Level control system tests; and
17. Completion of all state and federal environmental testing requirements.

Standard Renewable Off System Integrated Variable Resource Power Purchase Agreement

EXHIBIT D
SCHEDULE
[Attach currently in-effect Schedule 211]

**Portland General Electric Company
Effective**

**SCHEDULE 201
QUALIFYING FACILITY 10 MW or LESS
AVOIDED COST POWER PURCHASE INFORMATION**

PURPOSE

To provide information about Avoided Costs, Standard Power Purchase Agreements (PPA) and Negotiated PPAs, power purchase prices and price options for power delivered by a Qualifying Facility (QF) to the Company with nameplate capacity of 10,000 kW (10MW) or less.

AVAILABLE

To owners of QFs making sales of electricity to the Company in the State of Oregon (Seller).

APPLICABLE

For power purchased from small power production or cogeneration facilities that meet the definition of QF in 18 Code of Federal Regulations (CFR) Section 292, meet the eligibility requirements described herein and make energy available for Company purchase and deliver to the Company's system pursuant to a Standard PPA.

ESTABLISHING CREDITWORTHINESS

The Seller must establish creditworthiness prior to service under this schedule. For a Standard PPA, a Seller may establish creditworthiness with a written acknowledgment that it is current on all existing debt obligations and that it was not a debtor in a bankruptcy proceeding within the preceding 24 months. If the Seller is not able to establish creditworthiness, the Seller must provide security as deemed sufficient by the Company as set out in the Standard PPA.

POWER PURCHASE INFORMATION

A Seller may call the Power Production Coordinator at (503) 464-8000 to obtain more information about being a Seller or how to apply for service under this schedule.

PPA

In accordance with terms set out in this schedule and the Commission's Rules as applicable, the Company will purchase Net Output from Seller. Net Output shall mean the Energy no greater than the Nameplate Rating expressed in kWhs produced by the Facility, less station and other onsite use and less transformation and transmission losses. Net Output does not include any environmental attributes, imbalance power, or power from an integrating entity.

A Seller must execute a Power Purchase Agreement with the Company prior to delivery of power to the Company. The agreement will have a term of up to 20 years as selected by the QF.

A QF with a nameplate capacity rating of 10 MW or less as defined herein may elect the option of a Standard PPA.

**Portland General Electric Company
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SCHEDULE 201 (Continued)

PPA (Continued)

Any Seller may elect to negotiate a PPA with the Company. Such negotiation will comply with the requirements of the Federal Energy Regulatory Commission (FERC), and the Commission including the guidelines in Order No. 07-360, and Schedule 202. Negotiations for power purchase pricing may use the applicable filed Avoided Costs in effect at that time as a starting point for negotiations. Avoided Costs for Negotiated PPAs may be updated and will not be final until execution of a PPA.

STANDARD PPA (Nameplate capacity of 10 MW or less)

A Seller choosing a Standard PPA will complete all informational and price option selection requirements in the applicable Standard PPA and submit the executed Agreement to the Company prior to service under this schedule. The Standard PPA is available at www.portlandgeneral.com. The available Standard PPAs are: Standard In System Non-Variable Power Purchase Agreement, Standard Off System Non-Variable Power Purchase Agreement, Standard In System Variable Resource Power Purchase Agreement, and Standard Off System Integrated Variable Resource Power Purchase Agreement. The Standard PPAs applicable to Variable Resources are available only to QFs utilizing wind, solar or run of river hydro as the primary motive force.

GUIDELINES FOR 10 MW OR LESS FACILITIES ELECTING STANDARD PPA

In order to execute the Standard PPA the Seller must complete all of the general project information requested in the applicable Standard PPA.

When all information required in the Standard PPA has been received in writing from the Seller, the Company will respond within 15 business days with a draft Standard PPA.

The Seller may request in writing that the Company prepare a final draft Standard PPA. The Company will respond to this request within 15 business days. In connection with such request, the QF must provide the Company with any additional or clarified project information that the Company reasonably determines to be necessary for the preparation of a final draft Standard PPA.

When both parties are in full agreement as to all terms and conditions of the draft Standard PPA, the Company will prepare and forward to the Seller a final executable version of the agreement within 15 business days. Following the Company's execution, a completely executed copy will be returned to the Seller. Prices and other terms and conditions in the PPA will not be final and binding until the Standard PPA has been executed by both parties.

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SCHEDULE 201 (Continued)

OFF SYSTEM PPA

A Seller with a facility that interconnects with an electric system other than the Company's electric system may enter into a PPA with the Company after following the applicable Standard or Negotiated PPA guidelines set forth above and making the arrangements necessary for transmission of power to the Company's system. Off System PPAs are available for non-variable resources and variable resources for which the QF provides or pays a third party to provide integration to the Company's service territory. PGE is not responsible for Seller's transmission costs, including ancillary services such as imbalance service or integration costs provided by Seller or a third party.

BASIS FOR POWER PURCHASE PRICE

AVOIDED COST SUMMARY

The power purchase rates are based on the Company's Avoided Costs. Avoided Costs are defined in 18 CFR 292.101(6) as "the incremental costs to an electric utility of electric energy or capacity or both which, but for the purchase from the qualifying facility or qualifying facilities, such utility would generate itself or purchase from another source."

The Avoided Costs as listed in Tables 1a, 1b, 2a, and 2b below include monthly On- and Off-Peak prices.

ON-PEAK PERIOD

The On-Peak period is 6:00 a.m. until 10:00 p.m., Monday through Saturday.

OFF-PEAK PERIOD

The Off-Peak period is 10:00 p.m. until 6:00 a.m., Monday through Saturday, and all day on Sunday.

Avoided Costs are based on forward market price estimates through December 2014, the period of time during which the Company's Avoided Costs are associated with incremental purchases of Energy and capacity from the market. For the period 2015 through 2030, the Avoided Costs reflect the fully allocated costs of a natural gas fueled combined cycle combustion turbine (CCCT) including fuel and capital costs. The CCCT Avoided Costs are based on the variable cost of Energy plus capitalized Energy costs at a 93% capacity factor based on a natural gas price forecast, with prices modified for shrinkage and transportation costs.

PRICING OPTIONS FOR STANDARD PPA

Pricing options represent the purchase price per MWh the Company will pay for electricity delivered to a Point of Delivery (POD) within the Company's service territory pursuant to a Standard PPA up to the Net Output of the QF in any hour.

The Standard PPA pricing will be based on the Avoided Cost in effect at the time the agreement is executed.

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SCHEDULE 201 (Continued)

PRICING OPTIONS FOR STANDARD PPA (Continued)

Four pricing options are available for Standard PPAs. The pricing options include one Fixed Rate Option and three Market Based Options.

1) Fixed Price Option for a Non-variable Resource or an Off System Integrated Variable Resource

The Fixed Price Option is based on Avoided Costs including forecasted natural gas prices. This option is available for non-variable resources and variable resources for which the QF provides or pays a third party to provide integration to the Company's service territory

This option is available for a maximum period of 15 years immediately following the effective date of the Standard PPA. Sellers with a PPA term exceeding 15 years will make a one time election at execution to select a Market-Based Option for all years up to five after of the initial 15 years immediately following the effective date of the Standard PPA. Under the Fixed Price Option, prices will be as established at the time the Standard PPA is executed and will be equal to the Avoided Costs in Tables 1a and 1b effective at execution for a period of up to 15 years immediately following the effective date of the Standard PPA.

TABLE 1a												
Avoided Costs												
Fixed Price Option for Non-variable and Off System Integrated Variable Resources												
On-Peak Forecast (\$/MWH)												
Year	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
2012	33.04	30.74	28.71	28.20	25.14	21.83	34.56	38.39	36.61	34.82	37.11	40.68
2013	40.28	39.26	37.22	33.65	30.34	27.79	44.61	48.94	46.91	43.33	43.84	47.67
2014	43.18	42.08	39.89	36.06	32.49	29.76	47.84	52.50	50.32	46.48	47.02	51.13
2015	83.36	83.15	82.54	81.21	81.29	81.48	81.75	81.90	81.92	82.18	82.87	84.41
2016	86.95	86.74	86.11	84.74	84.82	85.02	85.30	85.46	85.51	85.77	86.60	88.26
2017	91.15	90.94	90.30	88.74	88.82	89.03	89.30	89.53	89.59	89.84	90.74	92.47
2018	95.32	95.09	94.40	92.71	92.79	93.02	93.31	93.56	93.63	93.90	94.88	96.75
2019	98.99	98.75	98.01	96.22	96.31	96.55	96.86	97.13	97.20	97.48	98.53	100.51
2020	103.47	103.21	102.41	100.48	100.57	100.84	101.17	101.46	101.54	101.84	102.97	105.11
2021	108.21	107.93	107.08	105.00	105.11	105.39	105.75	106.06	106.14	106.47	107.67	109.97
2022	112.94	112.63	111.72	109.51	109.62	109.92	110.30	110.63	110.72	111.07	112.36	114.82
2023	117.99	117.67	116.70	114.33	114.45	114.77	115.18	115.53	115.63	116.00	117.37	120.00
2024	122.66	122.31	121.28	118.76	118.89	119.23	119.67	120.04	120.14	120.54	122.00	124.80
2025	128.02	127.65	126.55	123.87	124.00	124.37	124.84	125.23	125.34	125.76	127.32	130.29
2026	130.37	129.99	128.88	126.15	126.28	126.66	127.13	127.53	127.64	128.07	129.66	132.68
2027	132.77	132.38	131.25	128.47	128.61	128.99	129.47	129.88	129.99	130.43	132.04	135.12
2028	135.22	134.83	133.67	130.84	130.98	131.37	131.86	132.28	132.39	132.83	134.48	137.62
2029	137.69	137.29	136.12	133.23	133.38	133.77	134.27	134.70	134.81	135.26	136.94	140.13
2030	140.22	139.82	138.62	135.68	135.83	136.23	136.74	137.17	137.29	137.75	139.46	142.71
2031	142.80	142.39	141.17	138.18	138.32	138.74	139.25	139.69	139.81	140.28	142.02	145.33

**Portland General Electric Company
Effective**

SCHEDULE 201 (Continued)

**PRICING OPTIONS FOR STANDARD PPA (Continued)
FIXED PRICE OPTION (Continued)**

TABLE 1b												
Avoided Costs												
Fixed Price Option for Non-variable and Off System Integrated Variable Resources												
Off-Peak Forecast (\$/MWH)												
Year	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
2012	29.72	26.92	24.63	22.34	14.18	6.80	22.34	27.69	29.73	30.74	32.53	35.33
2013	34.93	33.91	31.36	25.76	16.59	9.45	29.07	34.93	37.49	37.22	36.97	39.77
2014	36.09	35.04	32.40	26.60	17.12	9.74	30.04	36.09	38.74	38.47	38.20	41.11
2015	34.15	33.95	33.34	32.01	32.08	32.28	32.55	32.70	32.72	32.98	33.67	35.21
2016	37.00	36.79	36.17	34.80	34.87	35.07	35.35	35.51	35.56	35.83	36.65	38.31
2017	39.96	39.74	39.11	37.55	37.62	37.84	38.11	38.34	38.40	38.65	39.55	41.28
2018	43.35	43.12	42.43	40.74	40.82	41.05	41.35	41.60	41.66	41.93	42.91	44.78
2019	46.07	45.82	45.09	43.29	43.38	43.63	43.94	44.20	44.28	44.56	45.60	47.59
2020	49.75	49.48	48.69	46.75	46.85	47.11	47.45	47.73	47.81	48.12	49.24	51.39
2021	53.32	53.04	52.19	50.11	50.22	50.50	50.86	51.17	51.25	51.58	52.78	55.08
2022	57.04	56.73	55.82	53.61	53.72	54.02	54.40	54.73	54.82	55.17	56.46	58.92
2023	60.88	60.55	59.59	57.22	57.34	57.66	58.07	58.42	58.51	58.89	60.26	62.89
2024	64.87	64.52	63.49	60.97	61.10	61.44	61.88	62.25	62.35	62.75	64.21	67.00
2025	68.97	68.60	67.51	64.83	64.96	65.33	65.79	66.19	66.29	66.72	68.27	71.24
2026	70.24	69.86	68.75	66.02	66.15	66.53	67.00	67.40	67.51	67.94	69.53	72.55
2027	71.53	71.15	70.01	67.23	67.37	67.75	68.23	68.64	68.75	69.19	70.80	73.88
2028	72.86	72.47	71.31	68.48	68.62	69.01	69.50	69.91	70.03	70.47	72.12	75.25
2029	74.18	73.78	72.61	69.72	69.87	70.26	70.76	71.19	71.30	71.75	73.43	76.62
2030	75.54	75.14	73.94	71.01	71.15	71.55	72.06	72.49	72.61	73.07	74.78	78.03
2031	76.93	76.52	75.30	72.31	72.46	72.87	73.38	73.83	73.94	74.41	76.15	79.46

Under the Fixed Price Option, the Company will pay Seller the Off-Peak Avoided Cost pursuant to Table 1b for: (a) all Net Output delivered prior to the Commercial Operation Date; (b) all Net Output deliveries greater than Maximum Net Output in any PPA Year; (c) any generation subject to and as adjusted by the provisions of Section 4.3 of the Standard PPA; and (d) Net Output delivered in the Off-Peak Period. The Company will pay the Seller the On-Peak Avoided Cost pursuant to Table 1a for all other delivered Net Output. (See the Standard PPA for defined terms.)

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SCHEDULE 201 (Continued)

**PRICING OPTIONS FOR STANDARD PPA (Continued)
 FIXED PRICE OPTION (Continued)**

2) Fixed Price Option for an On System Variable Resource

The Fixed Price Option for an On System Variable Resource is based on Avoided Costs including forecasted natural gas prices minus integration costs.

This option is available for a maximum period of 15 years immediately following the effective date of the Standard PPA. Sellers with a PPA term exceeding 15 years will make a one time election at execution to select a Market-Based Option for all years up to five after of the initial 15 years immediately following the effective date of the Standard PPA. Under the Fixed Price Option, prices will be as established at the time the Standard PPA is executed and will be equal to the Avoided Costs in Tables 2a and 2b effective at execution for a period of up to 15 years immediately following the effective date of the Standard PPA.

TABLE 2a												
Avoided Costs												
Fixed Price Option for In System Variable Resources												
On-Peak Forecast (\$/MWH)												
Year	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
2012	24.21	21.92	19.88	19.37	16.32	13.01	25.74	29.56	27.79	26.00	28.29	31.86
2013	31.29	30.27	28.24	24.67	21.36	18.81	35.62	39.95	37.93	34.35	34.86	38.68
2014	34.03	32.93	30.74	26.91	23.34	20.61	38.69	43.35	41.17	37.33	37.87	41.98
2015	74.04	73.83	73.23	71.89	71.97	72.17	72.44	72.58	72.60	72.86	73.56	75.09
2016	77.46	77.25	76.62	75.25	75.33	75.53	75.81	75.97	76.02	76.28	77.11	78.77
2017	81.49	81.27	80.63	79.08	79.15	79.37	79.64	79.87	79.93	80.17	81.08	82.81
2018	85.48	85.24	84.55	82.86	82.95	83.18	83.47	83.72	83.79	84.05	85.04	86.91
2019	88.97	88.72	87.99	86.20	86.28	86.53	86.84	87.11	87.18	87.46	88.50	90.49
2020	93.27	93.00	92.21	90.27	90.37	90.63	90.97	91.25	91.33	91.63	92.76	94.91
2021	97.82	97.53	96.68	94.61	94.71	95.00	95.35	95.66	95.74	96.07	97.28	99.58
2022	102.35	102.04	101.14	98.92	99.03	99.33	99.72	100.04	100.13	100.48	101.77	104.23
2023	107.21	106.88	105.92	103.55	103.67	103.99	104.40	104.75	104.84	105.22	106.59	109.21
2024	111.68	111.33	110.30	107.78	107.91	108.25	108.69	109.06	109.16	109.56	111.02	113.82
2025	116.83	116.46	115.37	112.69	112.82	113.19	113.65	114.05	114.16	114.58	116.13	119.10
2026	118.98	118.61	117.49	114.76	114.90	115.27	115.74	116.15	116.25	116.68	118.27	121.29
2027	121.17	120.78	119.65	116.87	117.01	117.39	117.87	118.28	118.39	118.83	120.44	123.52
2028	123.41	123.02	121.86	119.03	119.17	119.56	120.05	120.47	120.58	121.02	122.67	125.80
2029	125.66	125.27	124.09	121.21	121.35	121.75	122.24	122.67	122.78	123.24	124.91	128.10
2030	127.97	127.57	126.37	123.43	123.58	123.98	124.49	124.92	125.04	125.50	127.21	130.46
2031	130.33	129.91	128.69	125.70	125.85	126.26	126.78	127.22	127.34	127.81	129.55	132.86

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SCHEDULE 201 (Continued)

**PRICING OPTIONS FOR STANDARD PPA (Continued)
FIXED PRICE OPTION (Continued)**

TABLE 2b												
Avoided Costs												
Fixed Price Option for In System Variable Resources												
Off-Peak Forecast (\$/MWH)												
Year	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
2012	20.90	18.10	15.81	13.51	5.36	(2.03)	13.51	18.86	20.91	21.92	23.70	26.51
2013	25.94	24.92	22.38	16.77	7.60	0.47	20.08	25.94	28.50	28.24	27.98	30.78
2014	26.94	25.89	23.25	17.45	7.97	0.59	20.89	26.94	29.59	29.32	29.05	31.96
2015	24.84	24.63	24.02	22.69	22.77	22.96	23.23	23.38	23.40	23.66	24.35	25.89
2016	27.51	27.30	26.68	25.31	25.38	25.58	25.86	26.02	26.07	26.34	27.16	28.82
2017	30.29	30.08	29.44	27.88	27.96	28.18	28.44	28.67	28.74	28.98	29.89	31.61
2018	33.51	33.28	32.59	30.90	30.98	31.21	31.50	31.75	31.82	32.09	33.07	34.94
2019	36.05	35.80	35.07	33.27	33.36	33.61	33.92	34.18	34.25	34.54	35.58	37.57
2020	39.54	39.27	38.48	36.54	36.64	36.91	37.24	37.53	37.60	37.91	39.03	41.18
2021	42.93	42.64	41.79	39.72	39.82	40.11	40.46	40.77	40.85	41.18	42.39	44.68
2022	46.45	46.14	45.24	43.02	43.13	43.43	43.82	44.14	44.23	44.58	45.87	48.33
2023	50.10	49.77	48.80	46.44	46.56	46.88	47.29	47.64	47.73	48.11	49.48	52.10
2024	53.89	53.54	52.51	49.99	50.12	50.46	50.90	51.27	51.37	51.77	53.23	56.02
2025	57.79	57.42	56.33	53.65	53.78	54.15	54.61	55.01	55.11	55.53	57.09	60.06
2026	58.85	58.48	57.36	54.63	54.77	55.14	55.61	56.02	56.12	56.55	58.14	61.16
2027	59.93	59.55	58.41	55.64	55.77	56.16	56.63	57.04	57.15	57.59	59.21	62.29
2028	61.05	60.65	59.50	56.67	56.81	57.20	57.69	58.10	58.22	58.66	60.31	63.44
2029	62.15	61.76	60.58	57.70	57.84	58.24	58.73	59.16	59.27	59.73	61.40	64.59
2030	63.29	62.89	61.69	58.76	58.90	59.30	59.81	60.24	60.36	60.82	62.53	65.78
2031	64.46	64.04	62.82	59.83	59.98	60.39	60.91	61.35	61.47	61.94	63.68	66.99

Under the Fixed Price Option, the Company will pay Seller the Off-Peak Avoided Cost pursuant to Table 2b for: (a) all Net Output delivered prior to the Commercial Operation Date; (b) all Net Output deliveries greater than Maximum Net Output in any PPA Year; (c) any generation subject to and as adjusted by the provisions of Section 4.3 of the Standard PPA; and (d) Net Output delivered in the Off-Peak Period. The Company will pay the Seller the On-Peak Avoided Cost pursuant to Table 2a for all other delivered Net Output. (See the Standard PPA for defined terms.)

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SCHEDULE 201 (Continued)

PRICING OPTIONS FOR STANDARD PPA (Continued)

MARKET BASED PRICE OPTIONS:

Market Based Price Options include Option 2, Deadband Index Gas Price; Option 3, Index Gas Price; and Option 4, Dow Jones Mid-Columbia Daily On- and Off-Peak Electricity Firm Price Index (DJ-Mid-C Firm Index). The price components for pricing Options 2 and 3 are defined as follows:

On Peak Price:	P_{Peak}
Off Peak Price:	P_{Off}
Variable Operating and Maintenance, Fixed Costs, and Gas Transportation (Table 6):	VFG
Capacity Value (Table 7):	C
Heat Rate:	HR = 6,732 BTU/kWh
Losses:	1.9%
Forecasted Gas Price (Table 5):	GP_F
First of Month* Northwest Pipeline Corp. Canadian Border Index as Reported in <u>Platts</u> <u>Inside FERC's Gas Market Report</u>	GP_{Sumas}
First of Month* one-month spot price averages for AECO/NIT transactions as Reported in <u>Canadian Gas Price Reporter</u> <u>Natural Gas Market Report</u> (in US dollars):	GP_{AECO}
Monthly Indexed Gas Price:	$GP_{MI} = (GP_{Sumas} + GP_{AECO})/2$
Deadband Gas Index:	GP_{DB}

Where:

If $GP_{MI} > GP_F$
 $GP_{DB} = \text{Minimum of } (GP_{MI} \text{ or } 1.1 * GP_F)$
 Otherwise
 $GP_{DB} = \text{Maximum of } (GP_{MI} \text{ or } .9 * GP_F)$

* "First of Month" means the first such monthly issuance.

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SCHEDULE 201 (Continued)

PRICING OPTIONS FOR STANDARD PPA (Continued)
MARKET BASED PRICE OPTIONS (Continued)

Tables 3 and 4 below list applicable rates for Options 2 (Deadband Index Gas Price Option) and 3 (Index Gas Price Option) for the period through 2014. The monthly On- and Off-Peak prices will be applied for all Market Based Price Options.

TABLE 3												
Avoided Costs												
On-Peak Resource Sufficiency Rate (\$/MWH)												
Year	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
2012	33.04	30.74	28.71	28.20	25.14	21.83	34.56	38.39	36.61	34.82	37.11	40.68
2013	40.28	39.26	37.22	33.65	30.34	27.79	44.61	48.94	46.91	43.33	43.84	47.67
2014	43.18	42.08	39.89	36.06	32.49	29.76	47.84	52.50	50.32	46.48	47.02	51.13

TABLE 4												
Avoided Costs												
Off-Peak Resource Sufficiency Rate (\$/MWH)												
Year	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
2012	29.72	26.92	24.63	22.34	14.18	6.80	22.34	27.69	29.73	30.74	32.53	35.33
2013	34.93	33.91	31.36	25.76	16.59	9.45	29.07	34.93	37.49	37.22	36.97	39.77
2014	36.09	35.04	32.40	26.60	17.12	9.74	30.04	36.09	38.74	38.47	38.20	41.11

For all market based pricing options, the prices are applicable to non-variable or off system integrated variable resources. For Sellers providing an on system variable resource, the prices will be net of the prices listed in Table 8. The net price shall not be less than zero.

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SCHEDULE 201 (Continued)

PRICING OPTIONS FOR STANDARD PPA (Continued)
MARKET BASED PRICE OPTIONS (Continued)

3) Deadband Index Gas Price Option

The Deadband Index Gas Price Option bases the fuel price component of the Energy rate on comparisons between the Forecast Gas Price (Table 5) and the simple average of the First of Month gas indices for Sumas and AECO trading hubs. The Northwest Pipeline Gas Index (Sumas) will be as reported in Platts Inside FERC's Gas Market Report. The AECO/NIT (AECO) Gas Index will be as reported in Canadian Gas Price Reporter Natural Gas Market Report (in US dollars). The fuel price component used will be bound between 90% and 110% of the natural gas price forecast but based on the then current gas price.

The price paid per MWh will be:

$$\begin{aligned} P_{\text{Peak}} &= GP_{\text{DB}} * \text{HR} / 1,000 / (1 - \text{Losses}) + \text{VFG} + \text{C} \\ P_{\text{Off}} &= GP_{\text{DB}} * \text{HR} / 1,000 / (1 - \text{Losses}) + \text{VFG} \end{aligned}$$

Under the Deadband method, the Company will pay Seller the Off-Peak prices for: (a) all Net Output delivered prior to the Commercial Operation Date; (b) all Net Output deliveries greater than Maximum Net Output in any PPA Year; (c) any generation subject to and as adjusted by the provisions of Section 4.3 of the Standard PPA; and (d) Net Output delivered in the Off-Peak Period. All other purchases of Net Output will be at On-Peak prices. (See the Standard PPA for defined terms.)

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SCHEDULE 201 (Continued)

PRICING OPTIONS FOR STANDARD PPA (Continued)
MARKET BASED PRICE OPTIONS (Continued)

4) Index Gas Price Option

The Index Gas Price Option is the simple average of the First of Month gas indices for Sumas and AECO trading hubs used in establishing the Avoided Costs. The Sumas Gas Index will be as reported in Platts Inside FERC's Gas Market Report. The AECO Gas Index will be as reported in the Canadian Gas Price Reporter Natural Gas Market Report (in US dollars).

The price paid per MWh will be:

$$\begin{aligned} P_{\text{Peak}} &= GP_{\text{MI}} * \text{HR} / 1,000 / (1 - \text{Losses}) + \text{VFG} + \text{C} \\ P_{\text{Off}} &= GP_{\text{MI}} * \text{HR} / 1,000 / (1 - \text{Losses}) + \text{VFG} \end{aligned}$$

Under the Index Gas Price, the Company will pay Seller the Off-Peak Prices for: (a) for all Net Output delivered prior to the Commercial Operation Date; (b) all Net Output deliveries greater than Maximum Net Output in any PPA Year; (c) any generation subject to and as adjusted by the provisions of Section 4.3 of the Standard PPA; and (d) for Net Output delivered in the Off-Peak Period. All other purchases of Net Output will be at On-Peak prices. (See the Standard PPA for defined terms.)

5) Mid C Index Price Option

Under this option, prices paid per MWh will be based on the DJ-Mid-C Firm Index plus 0.211 ¢ per kWh for wholesale wheeling.

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SCHEDULE 201 (Continued)

PRICING OPTIONS FOR STANDARD PPA (Continued)
 MARKET BASED PRICE OPTIONS (Continued)

Table 5 contains the gas pricing components for Option 1 (Fixed Price Option) and Option 2 (Deadband Index Gas Price Option).

TABLE 5												
Forecasted Gas Price - GP _F (\$/MMBTU) - Without Transportation												
Year	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
2015	4.97	4.94	4.86	4.67	4.68	4.71	4.74	4.77	4.77	4.81	4.90	5.13
2016	5.38	5.35	5.26	5.07	5.08	5.11	5.15	5.17	5.18	5.21	5.33	5.57
2017	5.81	5.78	5.69	5.46	5.48	5.51	5.55	5.58	5.59	5.62	5.75	6.00
2018	6.30	6.27	6.17	5.92	5.94	5.97	6.01	6.05	6.06	6.09	6.24	6.50
2019	6.69	6.66	6.55	6.29	6.31	6.34	6.39	6.42	6.43	6.47	6.62	6.91
2020	7.22	7.18	7.07	6.79	6.80	6.84	6.89	6.93	6.94	6.98	7.15	7.45
2021	7.74	7.69	7.57	7.28	7.29	7.33	7.38	7.43	7.44	7.48	7.66	7.99
2022	8.27	8.23	8.10	7.78	7.79	7.84	7.89	7.94	7.95	8.00	8.19	8.54
2023	8.82	8.78	8.64	8.30	8.32	8.36	8.42	8.47	8.48	8.54	8.74	9.11
2024	9.40	9.35	9.20	8.84	8.86	8.91	8.97	9.02	9.04	9.09	9.30	9.70
2025	9.99	9.94	9.78	9.39	9.41	9.47	9.53	9.59	9.60	9.67	9.89	10.32
2026	10.17	10.12	9.96	9.57	9.59	9.64	9.71	9.77	9.78	9.84	10.07	10.50
2027	10.36	10.31	10.14	9.74	9.76	9.82	9.89	9.95	9.96	10.02	10.26	10.70
2028	10.55	10.50	10.33	9.92	9.94	10.00	10.07	10.13	10.14	10.21	10.45	10.90
2029	10.75	10.69	10.52	10.11	10.13	10.18	10.25	10.32	10.33	10.40	10.64	11.10
2030	10.94	10.88	10.71	10.29	10.31	10.37	10.44	10.51	10.52	10.59	10.83	11.30
2031	11.14	11.09	10.91	10.48	10.50	10.56	10.64	10.70	10.72	10.78	11.03	11.51

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SCHEDULE 201 (Continued)

PRICING OPTIONS FOR STANDARD PPA (Continued)
 MARKET BASED PRICE OPTIONS (Continued)

Table 6 contains the Variable O&M and Fixed Costs that are derived from a natural gas-fired CCCT.

TABLE 6												
Variable O&M, Fixed Costs and Gas Transportation Forecast - VFG (\$/MWH)												
Year	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
2015	0.02	0.02	0.01	(0.01)	(0.01)	(0.01)	(0.00)	(0.00)	(0.00)	0.00	0.01	0.04
2016	0.06	0.06	0.05	0.03	0.03	0.03	0.04	0.04	0.04	0.04	0.06	0.08
2017	0.08	0.08	0.07	0.05	0.05	0.05	0.06	0.06	0.06	0.06	0.08	0.10
2018	0.12	0.12	0.11	0.08	0.09	0.09	0.09	0.10	0.10	0.10	0.12	0.15
2019	0.15	0.15	0.14	0.11	0.11	0.12	0.12	0.12	0.13	0.13	0.15	0.18
2020	0.21	0.20	0.19	0.16	0.16	0.17	0.17	0.18	0.18	0.18	0.20	0.23
2021	0.24	0.23	0.22	0.19	0.19	0.20	0.20	0.21	0.21	0.21	0.23	0.26
2022	0.28	0.28	0.26	0.23	0.23	0.24	0.24	0.25	0.25	0.25	0.27	0.31
2023	0.33	0.32	0.31	0.27	0.27	0.28	0.28	0.29	0.29	0.30	0.32	0.36
2024	0.38	0.38	0.36	0.33	0.33	0.33	0.34	0.34	0.35	0.35	0.37	0.42
2025	0.42	0.42	0.40	0.36	0.36	0.37	0.37	0.38	0.38	0.39	0.41	0.46
2026	0.43	0.42	0.40	0.36	0.37	0.37	0.38	0.38	0.39	0.39	0.42	0.46
2027	0.43	0.43	0.41	0.37	0.37	0.38	0.38	0.39	0.39	0.40	0.42	0.47
2028	0.45	0.44	0.43	0.38	0.39	0.39	0.40	0.41	0.41	0.41	0.44	0.49
2029	0.44	0.44	0.42	0.38	0.38	0.38	0.39	0.40	0.40	0.41	0.43	0.48
2030	0.45	0.44	0.43	0.38	0.38	0.39	0.40	0.40	0.41	0.41	0.44	0.49
2031	0.46	0.45	0.43	0.39	0.39	0.39	0.40	0.41	0.41	0.42	0.44	0.49

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SCHEDULE 201 (Continued)

**PRICING OPTIONS FOR STANDARD PPA (Continued)
 INTEGRATION PRICE ADJUSTMENT**

For Sellers providing an in system variable resource, the prices will be net of the prices listed in Table 8. The net price shall not be less than zero.

TABLE 8												
Avoided Integration Costs (\$/MWH)												
Year	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
2012	8.82	8.82	8.82	8.82	8.82	8.82	8.82	8.82	8.82	8.82	8.82	8.82
2013	8.98	8.98	8.98	8.98	8.98	8.98	8.98	8.98	8.98	8.98	8.98	8.98
2014	9.15	9.15	9.15	9.15	9.15	9.15	9.15	9.15	9.15	9.15	9.15	9.15
2015	9.32	9.32	9.32	9.32	9.32	9.32	9.32	9.32	9.32	9.32	9.32	9.32
2016	9.49	9.49	9.49	9.49	9.49	9.49	9.49	9.49	9.49	9.49	9.49	9.49
2017	9.66	9.66	9.66	9.66	9.66	9.66	9.66	9.66	9.66	9.66	9.66	9.66
2018	9.84	9.84	9.84	9.84	9.84	9.84	9.84	9.84	9.84	9.84	9.84	9.84
2019	10.02	10.02	10.02	10.02	10.02	10.02	10.02	10.02	10.02	10.02	10.02	10.02
2020	10.21	10.21	10.21	10.21	10.21	10.21	10.21	10.21	10.21	10.21	10.21	10.21
2021	10.40	10.40	10.40	10.40	10.40	10.40	10.40	10.40	10.40	10.40	10.40	10.40
2022	10.59	10.59	10.59	10.59	10.59	10.59	10.59	10.59	10.59	10.59	10.59	10.59
2023	10.78	10.78	10.78	10.78	10.78	10.78	10.78	10.78	10.78	10.78	10.78	10.78
2024	10.98	10.98	10.98	10.98	10.98	10.98	10.98	10.98	10.98	10.98	10.98	10.98
2025	11.18	11.18	11.18	11.18	11.18	11.18	11.18	11.18	11.18	11.18	11.18	11.18
2026	11.39	11.39	11.39	11.39	11.39	11.39	11.39	11.39	11.39	11.39	11.39	11.39
2027	11.60	11.60	11.60	11.60	11.60	11.60	11.60	11.60	11.60	11.60	11.60	11.60
2028	11.81	11.81	11.81	11.81	11.81	11.81	11.81	11.81	11.81	11.81	11.81	11.81

MONTHLY SERVICE CHARGE

Each separately metered QF not associated with a retail Customer account will be charged \$10.00 per month.

**Portland General Electric Company
Effective**

SCHEDULE 201 (Continued)

INSURANCE REQUIREMENTS

The following insurance requirements are applicable to Sellers with a Standard PPA:

- 1) QFs with nameplate capacity ratings greater than 200 kW are required to secure and maintain a prudent amount of general liability insurance. The Seller must certify to the Company that it is maintaining general liability insurance coverage for each QF at prudent amounts. A prudent amount will be deemed to mean liability insurance coverage for both bodily injury and property damage liability in the amount of not less than \$1,000,000 each occurrence combined single limit, which limits may be required to be increased or decreased by the Company as the Company determines in its reasonable judgment economic conditions or claims experience may warrant.
- 2) Such insurance will include an endorsement naming the Company as an additional insured insofar as liability arising out of operations under this schedule and a provision that such liability policies will not be canceled or their limits reduced without 30 days' written notice to the Company. The Seller will furnish the Company with certificates of insurance together with the endorsements required herein. The Company will have the right to inspect the original policies of such insurance.
- 3) QFs with a design capacity of 200 kW or less are encouraged to pursue liability insurance on his/her own. The Oregon Public Utility Commission in Order No. 05-584 determined that it is inappropriate to require QFs that have a design capacity of 200 kW or less to obtain general liability insurance.

TRANSMISSION AGREEMENTS

If the QF is located outside the Company's service territory, the Seller is responsible for the transmission of power at its cost to the Company's service territory, including third party charges for ancillary services such as imbalance service or integration, as applicable.

INTERCONNECTION REQUIREMENTS

Except as otherwise provided in a generation Interconnection Agreement between the Company and Seller, if the QF is located within the Company's service territory, switching equipment capable of isolating the QF from the Company's system must be accessible to the Company at all times. At the Company's option, the Company may operate the switching equipment described above if, in the sole opinion of the Company, continued operation of the QF in connection with the utility's system may create or contribute to a system emergency.

The QF owner interconnecting with the Company's distribution system must comply with all requirements for interconnection as established pursuant to Commission rule, in the Company's Rules and Regulations (Rule C) or the Company's Interconnection Procedures contained in its FERC Open Access Transmission Tariff (OATT), as applicable. The Seller will bear full responsibility for the installation and safe operation of the interconnection facilities.

Portland General Electric Company
Effective

SCHEDULE 201 (Continued)

METERING DATA

Seller shall maintain a minimum of two years records of scheduled and metered Net Output and shall allow PGE to have access to such records and to imbalance information kept by the Transmission Provider as applicable. Seller shall take all required actions and grant permissions as necessary to allow PGE access to such information.

DEFINITION OF A SMALL COGENERATION FACILITY OR SMALL POWER PRODUCTION FACILITY ELIGIBLE TO RECEIVE THE STANDARD RATES AND STANDARD PPA

A QF will be eligible to receive the standard rates and Standard PPA if the nameplate capacity of the QF, together with any other electric generating facility using the same motive force, owned or controlled by the same person(s) or affiliated person(s), and located at the same site, does not exceed 10 MW.

Definition of Person(s) or Affiliated Person(s)

As used above, the term "same person(s)" or "affiliated person(s)" means a natural person or persons or any legal entity or entities sharing common ownership, management or acting jointly or in concert with or exercising influence over the policies or actions of another person or entity. However, two facilities will not be held to be owned or controlled by the same person(s) or affiliated person(s) solely because they are developed by a single entity.

Furthermore, two facilities will not be held to be owned or controlled by the same person(s) or affiliated person(s) if such common person or persons is a "passive investor" whose ownership interest in the QF is primarily related to utilizing production tax credits, green tag values and MACRS depreciation as the primary ownership benefit. A unit of Oregon local government may also be a "passive investor" if the local governmental unit demonstrates that it will not have an equity ownership interest in or exercise any control over the management of the QF and that its only interest is a share of the cash flow from the QF, which share will not exceed 20%. The 20% cash flow share limit may only be exceeded for good cause shown and only with the prior approval of the Commission.

Definition of Same Site

For purposes of the foregoing, generating facilities are considered to be located at the same site as the QF for which qualification for the standard rates and Standard PPA is sought if they are located within a five-mile radius of any generating facilities or equipment providing fuel or motive force associated with the QF for which qualification for the standard rates and standard PPA is sought.

**Portland General Electric Company
Effective**

SCHEDULE 201 (Concluded)

**DEFINITION OF A SMALL COGENERATION FACILITY OR SMALL POWER
PRODUCTION FACILITY ELIGIBLE TO RECEIVE THE STANDARD RATES
AND STANDARD PPA (Continued)**

Shared Interconnection and Infrastructure

QFs otherwise meeting the above-described separate ownership test and thereby qualified for entitlement to the standard rates and Standard PPA will not be disqualified by utilizing an interconnection or other infrastructure not providing motive force or fuel that is shared with other QFs qualifying for the standard rates and Standard PPA so long as the use of the shared interconnection complies with the interconnecting utility's safety and reliability standards, interconnection agreement requirements and Prudent Electrical Practices as that term is defined in the interconnecting utility's approved Standard PPA.

DISPUTE RESOLUTION

Upon request, the QF will provide the purchasing utility with documentation verifying the ownership, management and financial structure of the QF in reasonably sufficient detail to allow the utility to make an initial determination of whether or not the QF meets the above-described criteria for entitlement to the standard rates and Standard PPA. Any dispute concerning a QF's entitlement to the standard rates and Standard PPA may be presented to the Commission for resolution.

SPECIAL CONDITIONS

1. Delivery of energy by Seller will be at a voltage, phase, frequency, and power factor as specified by the Company.
2. If the Seller also receives retail Electricity Service from the Company at the same location, any payments under this schedule will be credited to the Seller's retail Electricity Service bill. At the option of the Customer, any net credit over \$10.00 will be paid by check to the Customer.
3. The Seller may enter into only one PPA at any given time per facility with the Company for power sales. All sales must commence within 12 months of execution of a PPA.
4. PPAs entered into pursuant to this schedule will not terminate prior to the Standard or Negotiated PPA's termination date if the 1978 Public Utility Regulatory Policies Act (PURPA) is repealed.

TERM OF AGREEMENT

Not less than one year and not to exceed 20 years.

Portland General Electric Company
Effective

SCHEDULE 202
QUALIFYING FACILITIES GREATER THAN 10MW
AVOIDED COST POWER PURCHASE INFORMATION

PURPOSE

To provide information regarding procedures and timelines leading to a power purchase agreement (PPA) between the Company and a Qualifying Facility (QF) with an aggregate nameplate capacity greater than 10,000 kW.

AVAILABLE

To owners of QFs making sales of electricity to the Company in the State of Oregon (Seller).

APPLICABLE

To qualifying cogeneration facilities or qualifying small power production facilities within the meaning of section 201 and 210 of the Public Utility Regulatory Act of 1978 (PURPA), 16 U.S.C. 796 and 824a-3.

A QF with nameplate capacity greater than 10,000 kW will be required to enter into a Negotiated PPA with the Company.

A QF with nameplate capacity less than 10,000 kW or less may elect the option of a Standard PPA with terms and pricing as defined in Schedule 201.

POWER PURCHASE INFORMATION

A QF may call the Power Production Coordinator at (503) 464-8000 to obtain more information about being a Seller or how to apply for service under this schedule.

GUIDELINES

In accordance with terms set out in this schedule and the Commission's Rules as applicable, the Company will purchase Net Output from Seller. Net Output shall mean the Energy no greater than the Nameplate Rating expressed in kWhs produced by the Facility, less station and other onsite use and less transformation and transmission losses. Net Output does not include any environmental attributes, imbalance power, or power from an integrating entity. The Negotiated Agreement will comply with the requirements of the Federal Energy Regulatory Commission (FERC) and the guidelines established by Commission Order No. 07-360.

The Negotiated PPA may have a term of up to 20 years, as selected by the Seller.

**Portland General Electric Company
Effective**

SCHEDULE 202 (Continued)

PROCEDURES TO DEVELOP A NEGOTIATED PPA

1. The Seller may request indicative power purchase prices. To obtain an indicative pricing proposal for a proposed project, the Seller must provide in writing, general project information reasonably required for the development of indicative pricing, including, but not limited to:
 - Demonstration of ability to obtain QF status.
 - Design capacity (MW), station service requirements, and net amount of power to be delivered to the Company's electric system.
 - Generation technology and other related technology applicable to the site.
 - Quantity and timing of monthly power deliveries (including project ability to respond to dispatch orders from the Company).
 - Proposed site location and electrical interconnection point.
 - Status of interconnection and transmission arrangements.
 - Proposed on-line date and outstanding permitting requirements.
 - Motive force or fuel plan consisting of fuel type(s) and source(s).
 - Proposed PPA term and pricing provisions.

2. The Company will not be obligated to provide an indicative pricing proposal until all the information described above has been received in writing from the Seller. Within 30 business days following receipt of all required information, the Company will provide the Seller with an indicative pricing proposal, which may include other terms and conditions, tailored to the individual characteristics of the proposed project. Such proposal may be used by the Seller to make determinations regarding project planning, financing and feasibility. However, such prices are indicative and are not final and binding. Prices and other terms and conditions are only final and binding to the extent contained in Negotiated PPA, once executed by both parties. The Company will provide with the indicative prices a description of the methodology used to develop the prices.

**Portland General Electric Company
Effective**

SCHEDULE 202 (Continued)

PROCEDURES TO DEVELOP A NEGOTIATED PPA (Continued)

3. The Avoided Cost Prices specified in Schedule 201 provide a starting point for indicative prices, and will be modified to address the following specific factors established in OPUC Order No. 07-360 and FERC 18 § CFR 292.304(e):

(e) Factors affecting rates for purchases. In determining avoided costs, the following factors will, to the extent practicable, be taken into account.

- (1) The data provided pursuant to 18 CFR § 292.302(b), (c), or (d), including State review of any such data;*
- (2) The availability of capacity or energy from a qualifying facility during the system daily and seasonal peak periods, including:*
 - (i) The ability of the Company to dispatch the qualifying facility;*
 - (ii) The expected or demonstrated reliability of the qualifying facility;*
 - (iii) The terms of any contract or other legally enforceable obligation, including the duration of the obligation, termination notice requirement and sanctions for non-compliance;*
 - (iv) The extent to which scheduled outages of the qualifying facility can be usefully coordinated with scheduled outages of the Company's facilities;*
 - (v) The usefulness of energy and capacity supplied from a qualifying facility during system emergencies, including its ability to separate its load from its generation;*
 - (vi) The individual and aggregate value of energy and capacity from qualifying facilities on the Company's system; and*
 - (vii) The smaller capacity increments and the shorter lead time available with additions of capacity from qualifying facilities; and*
- (3) The relationship of the availability of energy or capacity from the qualifying facility as derived in part (e) (2) of this section, to the ability of the Company to avoid costs, including the deferral of capacity additions and the reduction of fossil fuel use; and*
- (4) The costs or savings resulting from variations in line losses from those that would have existed in the absence of purchases from a qualifying facility, if the Company generated an equivalent amount of energy itself or purchased an equivalent amount of electric energy or capacity.*

**Portland General Electric Company
Effective**

SCHEDULE 202 (Continued)

PROCEDURES TO DEVELOP A NEGOTIATED PPA (Continued)

4. If the Seller desires to proceed with negotiations after reviewing the Company's indicative price proposal, the Seller must request in writing that the Company prepare a draft Negotiated PPA to serve as the basis for negotiations between the parties. In connection with such request, the Seller must provide the Company with any additional project information that the Company reasonably determines to be necessary for the preparation of the Negotiated PPA, which may include, but will not be limited to:
 - Updated information for the project information listed above in paragraphs 1 and 3.
 - Evidence of adequate control of proposed site.
 - Timelines for obtaining any necessary governmental permits, approvals or authorizations.
 - Assurance of fuel supply or motive force.
 - Anticipated timelines for completion of key project milestones.
 - Evidence that any necessary interconnection studies have been completed and assurance that the necessary interconnection arrangements have been executed or are under negotiation.
5. Within 30 days following receipt of updated information required by the Company, the Company will provide the Seller with a draft Negotiated PPA. The draft agreement will contain proposed terms and conditions in addition to indicative pricing. The draft agreement is not binding; however, it will serve as the basis for subsequent negotiations.
6. After reviewing the draft Negotiated PPA, the Seller will notify the Company in writing of its intent to proceed with negotiations. The Seller may prepare an initial set of written comments and proposals regarding the agreement and forward them to the Company. The Company will not be obligated to begin negotiations with a Seller until the Company has received an initial set of written comments. After the Company's receipt of comments and proposals, the Seller may contact the Company to schedule contract negotiations at such times and places as are mutually agreeable to the parties. In connection with such negotiations, the Company:
 - Will not unreasonably delay negotiations and will respond in good faith to any additions, deletions or modifications to the draft Negotiated PPA that are proposed by the Seller.
 - May request to visit the site of the proposed project if such a visit has not previously occurred.
 - Will update its pricing proposals at appropriate intervals to accommodate any changes to the Company's avoided-cost calculations, the proposed project or proposed terms of the draft Negotiated PPA.
 - May request any additional information from the Seller necessary to finalize the terms of the Negotiated PPA and satisfy the Company's due diligence regarding the QF project.

Portland General Electric Company
Effective

SCHEDULE 202 (Concluded)

PROCEDURES TO DEVELOP A NEGOTIATED AGREEMENT (Continued)

7. When both parties are in full agreement as to all terms and conditions of the draft Negotiated PPA, the Company will prepare and forward to the Seller a final, executable version of the agreement within 15 business days. Prices and other terms and conditions in the Negotiated PPA will not be final and binding until the agreement has been executed by both parties.
8. If parties are not in full agreement within 60 days from the date of written notice, the Seller may file a complaint with the Commission asking the Commission to adjudicate the disputed contract terms.

OFF SYSTEM POWER PURCHASE AGREEMENT

A Seller with a facility that interconnects with an electric system other than the Company's electric system may enter into a PPA with the Company after following the applicable Negotiated PPA guidelines and making the arrangements necessary for transmission of power to the Company's system. Off System PPAs are available for non-variable resources and variable resources for which the QF provides or pays a third party to provide integration to the Company's service territory. PGE is not responsible for Seller's transmission costs, including ancillary services such as imbalance service or integration costs provided by Seller or a third party.

Standard In System Non-Variable Power Purchase Agreement
Effective _____

STANDARD IN SYSTEM NON-VARIABLE POWER PURCHASE AGREEMENT

THIS AGREEMENT, entered into this _____ day, _____ 201____, is between _____ ("Seller") and Portland General Electric Company ("PGE") (hereinafter each a "Party" or collectively, "Parties").

RECITALS

Seller intends to construct, own, operate and maintain a _____ facility for the generation of electric power located in _____ County, _____ with a Nameplate Capacity Rating of _____ kilowatt ("kW"), as further described in Exhibit B ("Facility"); and

Seller intends to operate the Facility as a "Qualifying Facility," as such term is defined in Section 3.1.3, below.

Seller shall sell and PGE shall purchase the entire Net Output, as such term is defined in Section 1.19, below, from the Facility in accordance with the terms and conditions of this Agreement.

AGREEMENT

NOW, THEREFORE, the Parties mutually agree as follows:

SECTION 1: DEFINITIONS

When used in this Agreement, the following terms shall have the following meanings:

1.1. "As-built Supplement" means the supplement to Exhibit B provided by Seller in accordance with Section 4.4 following completion of construction of the Facility, describing the Facility as actually built.

1.2. "Billing Period" means a period between PGE's readings of its power purchase billing meter at the Facility in the normal course of PGE's business. Such periods typically vary and may not coincide with calendar months.

1.3. "Cash Escrow" means an agreement by two parties to place money into the custody of a third party for delivery to a grantee only after the fulfillment of the conditions specified.

1.4. "Commercial Operation Date" means the date that the Facility is deemed by PGE to be fully operational and reliable. PGE may, at its discretion require, among other things, that all of the following events have occurred:

1.4.1. (facilities with nameplate under 500 kW exempt from following requirement) PGE has received a certificate addressed to PGE from a Licensed

Standard In System Non-Variable Power Purchase Agreement
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Professional Engineer ("LPE") acceptable to PGE in its reasonable judgment stating that the Facility is able to generate electric power reliably in amounts required by this Agreement and in accordance with all other terms and conditions of this Agreement (certifications required under this Section 1.4 can be provided by one or more LPEs);

1.4.2. (facilities with nameplate under 500 kW exempt from following requirement) Start-Up Testing of the Facility has been completed in accordance with Section 1.27;

1.4.3. (facilities with nameplate under 500 kW exempt from following requirement) After PGE has received notice of completion of Start-Up Testing, PGE has received a certificate addressed to PGE from an LPE stating that the Facility has operated for testing purposes under this Agreement uninterrupted for a Test Period at a rate in kW of at least 75 percent of average annual Net Output divided by 8,760 based upon any sixty (60) minute period for the entire testing period. The Facility must provide ten (10) working days written notice to PGE prior to the start of the initial testing period. If the operation of the Facility is interrupted during this initial testing period or any subsequent testing period, the Facility shall promptly start a new Test Period and provide PGE forty-eight (48) hours written notice prior to the start of such testing period;

1.4.4. (facilities with nameplate under 500 kW exempt from following requirement) PGE has received a certificate addressed to PGE from an LPE stating that in accordance with the Generation Interconnection Agreement, all required interconnection facilities have been constructed, all required interconnection tests have been completed; and the Facility is physically interconnected with PGE's electric system.

1.4.5. (facilities with nameplate under 500 kW exempt from following requirement) PGE has received a certificate addressed to PGE from an LPE stating that Seller has obtained all Required Facility Documents and if requested by PGE in writing, has provided copies of any or all such requested Required Facility Documents;

1.5. "Contract Price" means the applicable price, including on-peak and off-peak prices, as selected by Seller in Section 5 and specified in the Schedule.

1.6. "Contract Year" means each twelve (12) month period during the Term commencing upon the Commercial Operation Date or its anniversary during the Term, except the final contract year will be the period from the last anniversary of the Commercial Operation Date during the Term until the end of the Term.

1.7. "Effective Date" has the meaning set forth in Section 2.1.

1.8. "Environmental Attributes" means any and all current or future credits, benefits, emissions reductions, environmental air quality credits, emissions reduction credits, offsets and allowances, howsoever entitled, resulting from the avoidance of the

emission of any gas, chemical or other substance attributable to the Facility during the Term, or otherwise attributable to the generation, purchase, sale or use of energy from or by the Facility during the Term, including without limitation any of the same arising out of legislation or regulation concerned with oxides of nitrogen, sulfur or carbon, with particulate matter, soot or mercury, or implementing the United Nations Framework Convention on Climate Change (the "UNFCCC") or the Kyoto Protocol to the UNFCCC or crediting "early action" emissions reduction, or laws or regulations involving or administered by the Clean Air Markets Division of the Environmental Protection Agency or successor administrator, or any State or federal entity given jurisdiction over a program involving transferability of Environmental Attributes, and any Green Tag Reporting Rights to such Environmental Attributes.

1.9. "Facility" has the meaning set forth in the Recitals.

1.10. "Forward Replacement Price" means the price at which PGE, acting in a commercially reasonable manner, purchases for delivery at the Point of Delivery a replacement for any Net Output that Seller is required to deliver under this Agreement plus (i) costs reasonably incurred by PGE in purchasing such replacement Net Output, and (ii) additional transmission charges, if any, reasonably incurred by PGE in causing replacement energy to be delivered to the Point of Delivery.

1.11. "Generation Interconnection Agreement" means the generation interconnection agreement to be entered into separately between Seller and PGE, providing for the construction, operation, and maintenance of PGE's interconnection facilities required to accommodate deliveries of Seller's Net Output.

1.12. "Letter of Credit" means an engagement by a bank or other person made at the request of a customer that the issuer will honor drafts or other demands for payment upon compliance with the conditions specified in the letter of credit.

1.13. "Licensed Professional Engineer" or "LPE" means a person who is licensed to practice engineering in the state where the Facility is located, who has no economic relationship, association, or nexus with the Seller, and who is not a representative of a consulting engineer, contractor, designer or other individual involved in the development of the Facility, or of a manufacturer or supplier of any equipment installed in the Facility. Such Licensed Professional Engineer shall be licensed in an appropriate engineering discipline for the required certification being made and be acceptable to PGE in its reasonable judgment.

1.14. "Lost Energy Value" means for a Contract Year: zero, unless the Net Output is less than Minimum Net Output and the mean Dow Jones Mid C Index Price is greater than the Contract Price, in which case Lost Energy Value equals: (Minimum Net Output - Net Output) X (the lower of the mean Contract Price or the Mean Dow Jones Mid C Index Price - mean Contract Price).

1.15. "Mid-Columbia" means an area which includes points at any of the switchyards associated with the following four hydro projects: Rocky Reach, Rock Island, Wanapum and Priest Rapids. These switchyards include: Rocky Reach, Rock

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Island, Wanapum, McKenzie, Valhalla, Columbia, Midway and Vantage. Mid-Columbia shall also include points in the "Northwest Hub," as defined by Bonneville Power Administration. For scheduling purposes, the footprint described above shall dictate the delivery point name for the then current Western Electricity Coordinating Council ("WECC") scheduling protocols. If the footprint changes during the Term, a mutually agreed upon footprint that describes an area containing the most liquidity for trading purposes shall apply.

1.16. "Minimum Net Output" shall have the meaning provided in Section 4.2 of this Agreement.

1.17. "Nameplate Capacity Rating" means the maximum capacity of the Facility as stated by the manufacturer, expressed in kW, which shall not exceed 10,000 kW.

1.18. "Net Dependable Capacity" means the maximum capacity the Facility can sustain over a specified period modified for seasonal limitations, if any, and reduced by the capacity required for station service or auxiliaries.

1.19. "Net Output" means all energy expressed in kWhs produced by the Facility, less station and other onsite use and less transformation and transmission losses. Net Output does not include any environmental attributes, imbalance power, or power from an integrating entity.

1.20. "Off-Peak Hours" has the meaning provided in the Schedule.

1.21. "On-Peak Hours" has the meaning provided in the Schedule.

1.22. "Point of Delivery" means the high side of the generation step up transformer(s) located at the point of interconnection between the Facility and PGE's distribution or transmission system, as specified in the Generation Interconnection Agreement.

1.23. "Prime Rate" means the publicly announced prime rate or reference rate for commercial loans to large businesses with the highest credit rating in the United States in effect from time to time quoted by Citibank, N.A. If a Citibank, N.A. prime rate is not available, the applicable Prime Rate shall be the announced prime rate or reference rate for commercial loans in effect from time to time quoted by a bank with \$10 billion or more in assets in New York City, N.Y., selected by the Party to whom interest based on the prime rate is being paid.

1.24. "Prudent Electrical Practices" means those practices, methods, standards and acts engaged in or approved by a significant portion of the electric power industry in the Western Electricity Coordinating Council that at the relevant time period, in the exercise of reasonable judgment in light of the facts known or that should reasonably have been known at the time a decision was made, would have been expected to accomplish the desired result in a manner consistent with good business practices, reliability, economy, safety and expedition, and which practices, methods, standards and acts reflect due regard for operation and maintenance standards recommended by

applicable equipment suppliers and manufacturers, operational limits, and all applicable laws and regulations. Prudent Electrical Practices are not intended to be limited to the optimum practice, method, standard or act to the exclusion of all others, but rather to those practices, methods and acts generally acceptable or approved by a significant portion of the electric power generation industry in the relevant region, during the relevant period, as described in the immediate preceding sentence.

1.25. "Required Facility Documents" means all licenses, permits, authorizations, and agreements necessary for construction, operation, interconnection, and maintenance of the Facility including without limitation those set forth in Exhibit C.

1.26. "Senior Lien" means a prior lien which has precedence as to the property under the lien over another lien or encumbrance.

1.27. "Start-Up Testing" means the completion of applicable required factory and start-up tests as set forth in Exhibit D.

1.28. "Step-in Rights" means the right of one party to assume an intervening position to satisfy all terms of an agreement in the event the other party fails to perform its obligations under the agreement.

1.29. "Schedule" shall mean PGE Schedule 201 filed with the Oregon Public Utilities Commission ("Commission") in effect on the Effective Date of this Agreement and attached hereto as Exhibit E, the terms of which are hereby incorporated by reference. In the event of a conflict between this Agreement and the Schedule, this Agreement shall apply.

1.30. "Term" shall mean the period beginning on the Effective Date and ending on the Termination Date.

1.31. "Test Period" shall mean a period of sixty (60) days or a commercially reasonable period determined by the Seller.

1.32. References to Recitals, Sections, and Exhibits are to be the recitals, sections and exhibits of this Agreement.

SECTION 2: TERM; COMMERCIAL OPERATION DATE

2.1 This Agreement shall become effective upon execution by both Parties ("Effective Date").

2.2 Time is of the essence of this Agreement, and Seller's ability to meet certain requirements prior to the Commercial Operation Date and to complete all requirements to establish the Commercial Operation Date is critically important. Therefore,

2.2.1 By _____ [date to be determined by the Seller] Seller shall begin initial deliveries of Net Output; and

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2.2.2 By _____ [date to be determined by the Seller] Seller shall have completed all requirements under Section 1.4 and shall have established the Commercial Operation Date.

2.2.3 In the event Seller is unable to meet the requirements of Sections 2.2.1 and 2.2.2, Seller shall pay damages equal to the Lost Energy Value. In calculating the Lost Energy Value for use in this section, the Minimum Net Output shall be prorated and applied to the period of time between the Commercial Operation Date and the date specified in 2.2.1.

2.3 This Agreement shall terminate on _____, _____ [date to be chosen by Seller], up to 20 years from the Effective Date, or the date the Agreement is terminated in accordance with Section 10 or 12.2, whichever is earlier ("Termination Date").

SECTION 3: REPRESENTATIONS AND WARRANTIES

3.1 Seller and PGE represent, covenant, and warrant as follows:

3.1.1 Seller warrants it is a _____ duly organized under the laws of _____.

3.1.2 Seller warrants that the execution and delivery of this Agreement does not contravene any provision of, or constitute a default under, any indenture, mortgage, or other material agreement binding on Seller or any valid order of any court, or any regulatory agency or other body having authority to which Seller is subject.

3.1.3 Seller warrants that the Facility is and shall for the Term of this Agreement continue to be a "Qualifying Facility" ("QF") as that term is defined in the version of 18 C.F.R. Part 292 in effect on the Effective Date. Seller has provided the appropriate QF certification, which may include a Federal Energy Regulatory Commission ("FERC") self-certification to PGE prior to PGE's execution of this Agreement. At any time during the Term of this Agreement, PGE may require Seller to provide PGE with evidence satisfactory to PGE in its reasonable discretion that the Facility continues to qualify as a QF under all applicable requirements.

3.1.4 Seller warrants that it has not within the past two (2) years been the debtor in any bankruptcy proceeding, and Seller is and will continue to be for the Term of this Agreement current on all of its financial obligations.

3.1.5 Seller warrants that during the Term of this Agreement, all of Seller's right, title and interest in and to the Facility shall be free and clear of all liens and encumbrances other than liens and encumbrances arising from third-party financing of the Facility other than workers', mechanics', suppliers' or similar liens, or tax liens, in each case arising in the ordinary course of business that are either not yet due and payable or that have been released by means of a

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performance bond acceptable to PGE posted within eight (8) calendar days of the commencement of any proceeding to foreclose the lien.

3.1.6 Seller warrants that it will design and operate the Facility consistent with Prudent Electrical Practices.

3.1.7 Seller warrants that the Facility has a Nameplate Capacity Rating not greater than 10,000 kW.

3.1.8 Seller warrants that Net Dependable Capacity of the Facility is _____ kW.

3.1.9 Seller estimates that the average annual Net Output to be delivered by the Facility to PGE is _____ kilowatt-hours ("kWh"), which amount PGE will include in its resource planning.

3.1.10 Seller will deliver from the Facility to PGE at the Point of Delivery Net Output not to exceed a maximum of _____ kWh of Net Output during each Contract Year ("Maximum Net Output").

3.1.11 Seller has entered into a Generation Interconnection Agreement for a term not less than the term of this Agreement.

3.1.12 PGE warrants that it has not within the past two (2) years been the debtor in any bankruptcy proceeding, and PGE is and will continue to be for the Term of this Agreement current on all of its financial obligations.

3.1.13 Seller warrants that (i) the Facility satisfies the eligibility requirements specified in the Definition of a Small Cogeneration Facility or Small Power Production Facility Eligible to Receive the Standard Rates and Standard PPA in PGE's Schedule and (ii) Seller will not make any changes in its ownership, control or management during the term of this Agreement that would cause it to not be in compliance with the Definition of a Small Cogeneration Facility or Small Power Production Facility Eligible to Receive the Standard Rates and Standard PPA in PGE's Schedule. Seller will provide, upon request by Buyer not more frequently than every 36 months, such documentation and information as may be reasonably required to establish Seller's continued compliance with such Definition. Buyer agrees to take reasonable steps to maintain the confidentiality of any portion of the above described documentation and information that the Seller identifies as confidential except Buyer will provide all such confidential information to the Public Utility Commission of Oregon upon the Commission's request.

SECTION 4: DELIVERY OF POWER

4.1 Commencing on the Effective Date and continuing through the Term of this Agreement, Seller shall sell to PGE the entire Net Output delivered from the Facility at the Point of Delivery.

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4.2 Provided Seller has elected the Contract Price options in Section 5.1, 5.2, or 5.3, Seller shall deliver to PGE from the Facility for each Contract Year Net Output equal to or greater than the Minimum Net Output (either (a) if Seller does not select the Alternative Minimum Amount as defined in Exhibit A of this Agreement, a minimum of seventy-five percent (75%) of its average annual Net Output or (b) if selected by Seller, the Alternative Minimum Amount), provided that such Minimum Net Output for the final Contract Year shall be reduced pro rata to reflect the Commercial Operation Date, and further provided that such Minimum Net Output shall be reduced on a pro-rata basis for any periods during a Contract Year that the Facility was prevented from generating electricity for reasons of Force Majeure. PGE shall pay Seller the Contract Price for all delivered Net Output.

4.3 Provided Seller has elected the Contract Price options in Section 5.1, 5.2, or 5.3, Seller agrees that if Seller does not deliver the Minimum Net Output each Contract Year, PGE will suffer losses equal to the Lost Energy Value. As damages for Seller's failure to deliver the Minimum Net Output (subject to adjustment for reasons of Force Majeure as provided in Section 4.2) in any Contract Year, notwithstanding any other provision of this Agreement, the purchase price payable by PGE for future deliveries shall be reduced until Lost Energy Value is recovered. PGE and Seller shall work together in good faith to establish the period, in monthly amounts, of such reduction so as to avoid Seller's default on its commercial or financing agreements necessary for its continued operation of the Facility. For QF Facilities sized at 100 kW or smaller, the provisions of this section shall not apply.

4.4 Upon completion of construction of the Facility, Seller shall provide PGE an As-built Supplement to specify the actual Facility as built. Seller shall not increase the Nameplate Capacity Rating above that specified in Exhibit B or increase the ability of the Facility to deliver Net Output in quantities in excess of the Net Dependable Capacity, or the Maximum Net Output as described in Section 3.1.10 above, through any means including, but not limited to, replacement, modification, or addition of existing equipment, except with prior written notice to PGE. In the event Seller increases the Nameplate Capacity Rating of the Facility to no more than 10,000 kW pursuant to this section, PGE shall pay the Contract Price for the additional delivered Net Output. In the event Seller increases the Nameplate Capacity Rating to greater than 10,000 kW, then Seller shall be required to enter into a new power purchase agreement for all delivered Net Output proportionally related to the increase of Nameplate Capacity above 10,000 kW.

4.5 To the extent not otherwise provided in the Generation Interconnection Agreement, all costs associated with the modifications to PGE's interconnection facilities or electric system occasioned by or related to the interconnection of the Facility with PGE's system, or any increase in generating capability of the Facility, or any increase of delivery of Net Dependable Capacity from the Facility, shall be borne by Seller.

4.6 Seller may report under §1605(b) of the Energy Policy Act of 1992 or under any applicable program as belonging to Seller any of the Environmental Attributes

produced with respect to the Facility, and PGE shall not report under such program that such Environmental Attributes belong to it.

SECTION 5: CONTRACT PRICE

PGE shall pay Seller for the price options 5.1, 5.2, 5.3 or 5.4, as selected below, pursuant to the Schedule. Seller shall indicate which price option it chooses by marking its choice below with an X. If Seller chooses the option in Section 5.1, it must mark below with a second X a single second option from Section 5.2, 5.3, or 5.4 for all Contract Years in excess of 15 until the end of the Term. Except as provided herein, Seller's selection is for the Term and shall not be changed during the Term.

- 5.1 Fixed Price for Non-Variable Resources
- 5.2 Deadband Index Gas Price
- 5.3 Index Gas Price
- 5.4 Mid-C Index Rate Price

SECTION 6: OPERATION AND CONTROL

6.1 Seller shall operate and maintain the Facility in a safe manner in accordance with the Generation Interconnection Agreement, and Prudent Electrical Practices. PGE shall have no obligation to purchase Net Output from the Facility to the extent the interconnection of the Facility to PGE's electric system is disconnected, suspended or interrupted, in whole or in part, pursuant to the Generation Interconnection Agreement, or to the extent generation curtailment is required as a result of Seller's noncompliance with the Generation Interconnection Agreement. Seller is solely responsible for the operation and maintenance of the Facility. PGE shall not, by reason of its decision to inspect or not to inspect the Facility, or by any action or inaction taken with respect to any such inspection, assume or be held responsible for any liability or occurrence arising from the operation and maintenance by Seller of the Facility.

6.2 Seller agrees to provide sixty (60) days advance written notice of any scheduled maintenance that would require shut down of the Facility for any period of time.

6.3 If the Facility ceases operation for unscheduled maintenance, Seller immediately shall notify PGE of the necessity of such unscheduled maintenance, the time when such maintenance has occurred or will occur, and the anticipated duration of such maintenance. Seller shall take all reasonable measures and exercise its best efforts to avoid unscheduled maintenance, to limit the duration of such unscheduled maintenance, and to perform unscheduled maintenance during Off-Peak hours.

SECTION 7: CREDITWORTHINESS

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In the event Seller: a) is unable to represent or warrant as required by Section 3 that it has not been a debtor in any bankruptcy proceeding within the past two (2) years; b) becomes such a debtor during the Term; or c) is not or will not be current on all its financial obligations, Seller shall immediately notify PGE and shall promptly (and in no less than 10 days after notifying PGE) provide default security in an amount reasonably acceptable to PGE in one of the following forms: Senior Lien, Step-in Rights, a Cash Escrow or Letter of Credit. The amount of such default security that shall be acceptable to PGE shall be equal to: (annual On Peak Hours) X (On Peak Price – Off Peak Price) X (Minimum Net Output / 8760). Notwithstanding the foregoing, in the event Seller is not current on construction related financial obligations, Seller shall notify PGE of such delinquency and PGE may, in its discretion, grant an exception to the requirements to provide default security if the QF has negotiated financial arrangements with the construction loan lender that mitigate Seller's financial risk to PGE.

SECTION 8: METERING

8.1 PGE shall design, furnish, install, own, inspect, test, maintain and replace all metering equipment at Seller's cost and as required pursuant to the Generation Interconnection Agreement.

8.2 Metering shall be performed at the location and in a manner consistent with this Agreement and as specified in the Generation Interconnection Agreement. All Net Output purchased hereunder shall be adjusted to account for electrical losses, if any, between the point of metering and the Point of Delivery, so that the purchased amount reflects the net amount of power flowing into PGE's system at the Point of Delivery.

8.3 PGE shall periodically inspect, test, repair and replace the metering equipment as provided in the Generation Interconnection Agreement. If any of the inspections or tests discloses an error exceeding two (2%) percent of the actual energy delivery, either fast or slow, proper correction, based upon the inaccuracy found, shall be made of previous readings for the actual period during which the metering equipment rendered inaccurate measurements if that period can be ascertained. If the actual period cannot be ascertained, the proper correction shall be made to the measurements taken during the time the metering equipment was in service since last tested, but not exceeding three (3) months, in the amount the metering equipment shall have been shown to be in error by such test. Any correction in billings or payments resulting from a correction in the meter records shall be made in the next monthly billing or payment rendered. Such correction, when made, shall constitute full adjustment of any claim between Seller and PGE arising out of such inaccuracy of metering equipment.

8.4 To the extent not otherwise provided in the Generation Interconnection Agreement, all of PGE's costs relating to all metering equipment installed to accommodate Seller's Facility shall be borne by Seller.

SECTION 9: BILLINGS, COMPUTATIONS AND PAYMENTS

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9.1 On or before the thirtieth (30th) day following the end of each Billing Period, PGE shall send to Seller payment for Seller's deliveries of Net Output to PGE, together with computations supporting such payment. PGE may offset any such payment to reflect amounts owing from Seller to PGE pursuant to this Agreement, the Generation Interconnection Agreement, and any other agreement related to the Facility between the Parties or otherwise.

9.2 Any amounts owing after the due date thereof shall bear interest at the Prime Rate plus two percent (2%) from the date due until paid; provided, however, that the interest rate shall at no time exceed the maximum rate allowed by applicable law.

SECTION 10: DEFAULT, REMEDIES AND TERMINATION

10.1 In addition to any other event that may constitute a default under this Agreement, the following events shall constitute defaults under this Agreement:

10.1.1 Breach by Seller or PGE of a representation or warranty, except for Section 3.1.4, set forth in this Agreement.

10.1.2 Seller's failure to provide default security, if required by Section 7, prior to delivery of any Net Output to PGE or within 10 days of notice.

10.1.3 Seller's failure to deliver the Minimum Net Output for two consecutive Contract Years.

10.1.4 If Seller is no longer a Qualifying Facility.

10.1.5 Failure of PGE to make any required payment pursuant to Section 9.1.

10.2 In the event of a default hereunder, the non-defaulting party may immediately terminate this Agreement at its sole discretion by delivering written notice to the other Party, and, except for damages related to a default pursuant to Section 10.1.3 by a QF sized at 100 kW or smaller, may pursue any and all legal or equitable remedies provided by law or pursuant to this Agreement including damages related to the need to procure replacement power. Such termination shall be effective upon the date of delivery of notice, as provided in Section 21.1. The rights provided in this Section 10 are cumulative such that the exercise of one or more rights shall not constitute a waiver of any other rights.

10.3 If this Agreement is terminated as provided in this Section 10 PGE shall make all payments, within thirty (30) days, that, pursuant to the terms of this Agreement, are owed to Seller as of the time of receipt of notice of default. PGE shall not be required to pay Seller for any Net Output delivered by Seller after such notice of default.

10.4 If this Agreement is terminated as a result of Seller's default, Seller shall pay PGE the positive difference, if any, obtained by subtracting the Contract Price from the sum of the Forward Replacement Price for the Minimum Net Output that Seller was

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otherwise obligated to provide for a period of twenty-four (24) months from the date of termination. Accounts owed by Seller pursuant to this paragraph shall be due within five (5) business days after any invoice from PGE for the same.

10.5 In the event PGE terminates this Agreement pursuant to this Section 10, and Seller wishes to again sell Net Output to PGE following such termination, PGE in its sole discretion may require that Seller shall do so subject to the terms of this Agreement, including but not limited to the Contract Price until the Term of this Agreement (as set forth in Section 2.3) would have run in due course had the Agreement remained in effect. At such time Seller and PGE agree to execute a written document ratifying the terms of this Agreement.

10.6 Sections 10.1 10.3 10.4 10.5, 11, and 20.2 shall survive termination of this Agreement.

SECTION 11: INDEMNIFICATION AND LIABILITY

11.1 Seller agrees to defend, indemnify and hold harmless PGE, its directors, officers, agents, and representatives against and from any and all loss, claims, actions or suits, including costs and attorney's fees, both at trial and on appeal, resulting from, or arising out of or in any way connected with Seller's delivery of electric power to PGE or with the facilities at or prior to the Point of Delivery, or otherwise arising out of this Agreement, including without limitation any loss, claim, action or suit, for or on account of injury, bodily or otherwise, to, or death of, persons, or for damage to, or destruction or economic loss of property belonging to PGE, Seller or others, excepting to the extent such loss, claim, action or suit may be caused by the negligence of PGE, its directors, officers, employees, agents or representatives.

11.2 PGE agrees to defend, indemnify and hold harmless Seller, its directors, officers, agents, and representatives against and from any and all loss, claims, actions or suits, including costs and attorney's fees, both at trial and on appeal, resulting from, or arising out of or in any way connected with PGE's receipt of electric power from Seller or with the facilities at or after the Point of Delivery, or otherwise arising out of this Agreement, including without limitation any loss, claim, action or suit, for or on account of injury, bodily or otherwise, to, or death of, persons, or for damage to, or destruction or economic loss of property belonging to PGE, Seller or others, excepting to the extent such loss, claim, action or suit may be caused by the negligence of Seller, its directors, officers, employees, agents or representatives.

11.3 Nothing in this Agreement shall be construed to create any duty to, any standard of care with reference to, or any liability to any person not a Party to this Agreement. No undertaking by one Party to the other under any provision of this Agreement shall constitute the dedication of that Party's system or any portion thereof to the other Party or to the public, nor affect the status of PGE as an independent public utility corporation or Seller as an independent individual or entity.

11.4 NEITHER PARTY SHALL BE LIABLE TO THE OTHER FOR SPECIAL, PUNITIVE, INDIRECT OR CONSEQUENTIAL DAMAGES, WHETHER ARISING FROM

CONTRACT, TORT (INCLUDING NEGLIGENCE), STRICT LIABILITY OR OTHERWISE.

SECTION 12: INSURANCE

12.1 Prior to the connection of the Facility to PGE's electric system, provided such Facility has a design capacity of 200 kW or more, Seller shall secure and continuously carry for the Term hereof, with an insurance company or companies rated not lower than "B+" by the A. M. Best Company, insurance policies for bodily injury and property damage liability. Such insurance shall include provisions or endorsements naming PGE, its directors, officers and employees as additional insureds; provisions that such insurance is primary insurance with respect to the interest of PGE and that any insurance maintained by PGE is excess and not contributory insurance with the insurance required hereunder; a cross-liability or severability of insurance interest clause; and provisions that such policies shall not be canceled or their limits of liability reduced without thirty (30) days' prior written notice to PGE. Initial limits of liability for all requirements under this section shall be \$1,000,000 million single limit, which limits may be required to be increased or decreased by PGE as PGE determines in its reasonable judgment economic conditions or claims experience may warrant.

12.2 Prior to the connection of the Facility to PGE's electric system, provided such facility has a design capacity of 200 kW or more, Seller shall secure and continuously carry for the Term hereof, in an insurance company or companies rated not lower than "B+" by the A. M. Best Company, insurance acceptable to PGE against property damage or destruction in an amount not less than the cost of replacement of the Facility. Seller promptly shall notify PGE of any loss or damage to the Facility. Unless the Parties agree otherwise, Seller shall repair or replace the damaged or destroyed Facility, or if the facility is destroyed or substantially destroyed, it may terminate this Agreement. Such termination shall be effective upon receipt by PGE of written notice from Seller. Seller shall waive its insurers' rights of subrogation against PGE regarding Facility property losses.

12.3 Prior to the connection of the Facility to PGE's electric system and at all other times such insurance policies are renewed or changed, Seller shall provide PGE with a copy of each insurance policy required under this Section, certified as a true copy by an authorized representative of the issuing insurance company or, at the discretion of PGE, in lieu thereof, a certificate in a form satisfactory to PGE certifying the issuance of such insurance. If Seller fails to provide PGE with copies of such currently effective insurance policies or certificates of insurance, PGE at its sole discretion and without limitation of other remedies, may upon ten (10) days advance written notice by certified or registered mail to Seller either withhold payments due Seller until PGE has received such documents, or purchase the satisfactory insurance and offset the cost of obtaining such insurance from subsequent power purchase payments under this Agreement.

SECTION 13: FORCE MAJEURE

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13.1 As used in this Agreement, "Force Majeure" or "an event of Force Majeure" means any cause beyond the reasonable control of the Seller or of PGE which, despite the exercise of due diligence, such Party is unable to prevent or overcome. By way of example, Force Majeure may include but is not limited to acts of God, fire, flood, storms, wars, hostilities, civil strife, strikes, and other labor disturbances, earthquakes, fires, lightning, epidemics, sabotage, restraint by court order or other delay or failure in the performance as a result of any action or inaction on behalf of a public authority which by the exercise of reasonable foresight such Party could not reasonably have been expected to avoid and by the exercise of due diligence, it shall be unable to overcome, subject, in each case, to the requirements of the first sentence of this paragraph. Force Majeure, however, specifically excludes the cost or availability of resources to operate the Facility, changes in market conditions that affect the price of energy or transmission, wind or water droughts, and obligations for the payment of money when due.

13.2 If either Party is rendered wholly or in part unable to perform its obligation under this Agreement because of an event of Force Majeure, that Party shall be excused from whatever performance is affected by the event of Force Majeure to the extent and for the duration of the Force Majeure, after which such Party shall recommence performance of such obligation, provided that:

13.2.1 the non-performing Party, shall, promptly, but in any case within one (1) week after the occurrence of the Force Majeure, give the other Party written notice describing the particulars of the occurrence; and

13.2.2 the suspension of performance shall be of no greater scope and of no longer duration than is required by the Force Majeure; and

13.2.3 the non-performing Party uses its best efforts to remedy its inability to perform its obligations under this Agreement.

13.3 No obligations of either Party which arose before the Force Majeure causing the suspension of performance shall be excused as a result of the Force Majeure.

13.4 Neither Party shall be required to settle any strike, walkout, lockout or other labor dispute on terms which, in the sole judgment of the Party involved in the dispute, are contrary to the Party's best interests.

SECTION 14: SEVERAL OBLIGATIONS

Nothing contained in this Agreement shall ever be construed to create an association, trust, partnership or joint venture or to impose a trust or partnership duty, obligation or liability between the Parties. If Seller includes two or more parties, each such party shall be jointly and severally liable for Seller's obligations under this Agreement.

SECTION 15: CHOICE OF LAW

This Agreement shall be interpreted and enforced in accordance with the laws of the state of Oregon, excluding any choice of law rules which may direct the application of the laws of another jurisdiction.

SECTION 16: PARTIAL INVALIDITY AND PURPA REPEAL

It is not the intention of the Parties to violate any laws governing the subject matter of this Agreement. If any of the terms of the Agreement are finally held or determined to be invalid, illegal or void as being contrary to any applicable law or public policy, all other terms of the Agreement shall remain in effect. If any terms are finally held or determined to be invalid, illegal or void, the Parties shall enter into negotiations concerning the terms affected by such decision for the purpose of achieving conformity with requirements of any applicable law and the intent of the Parties to this Agreement.

In the event the Public Utility Regulatory Policies Act (PURPA) is repealed, this Agreement shall not terminate prior to the Termination Date, unless such termination is mandated by state or federal law.

SECTION 17: WAIVER

Any waiver at any time by either Party of its rights with respect to a default under this Agreement or with respect to any other matters arising in connection with this Agreement must be in writing, and such waiver shall not be deemed a waiver with respect to any subsequent default or other matter.

SECTION 18: GOVERNMENTAL JURISDICTION AND AUTHORIZATIONS

This Agreement is subject to the jurisdiction of those governmental agencies having control over either Party or this Agreement. Seller shall at all times maintain in effect all local, state and federal licenses, permits and other approvals as then may be required by law for the construction, operation and maintenance of the Facility, and shall provide upon request copies of the same to PGE.

SECTION 19: SUCCESSORS AND ASSIGNS

This Agreement and all of the terms hereof shall be binding upon and inure to the benefit of the respective successors and assigns of the Parties. No assignment hereof by either Party shall become effective without the written consent of the other Party being first obtained and such consent shall not be unreasonably withheld. Notwithstanding the foregoing, either Party may assign this Agreement without the other Party's consent as part of (a) a sale of all or substantially all of the assigning Party's assets, or (b) a merger, consolidation or other reorganization of the assigning Party.

SECTION 20: ENTIRE AGREEMENT

20.1 This Agreement supersedes all prior agreements, proposals, representations, negotiations, discussions or letters, whether oral or in writing, regarding

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PGE's purchase of Net Output from the Facility. No modification of this Agreement shall be effective unless it is in writing and signed by both Parties.

20.2 By executing this Agreement, Seller releases PGE from any third party claims related to the Facility, known or unknown, which may have arisen prior to the Effective Date.

SECTION 21: NOTICES

All notices except as otherwise provided in this Agreement shall be in writing, shall be directed as follows and shall be considered delivered if delivered in person or when deposited in the U.S. Mail, postage prepaid by certified or registered mail and return receipt requested:

To Seller: _____

with a copy to: _____

To PGE: Contracts Manager
 QF Contracts, 3WTCBR06
 PGE - 121 SW Salmon St.
 Portland, Oregon 97204

21.2 The Parties may change the person to whom such notices are addressed, or their addresses, by providing written notices thereof in accordance with this Section 21.

IN WITNESS WHEREOF, the Parties hereto have caused this Agreement to be executed in their respective names as of the Effective Date.

PGE

By: _____
Name: _____
Title: _____
Date: _____

(Name Seller)

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By: _____
Name: _____
Title: _____
Date: _____

EXHIBIT A
MINIMUM NET OUTPUT

In this Exhibit, Seller may designate an alternative Minimum Net Output to seventy-five (75%) percent of annual average Net Output specified in Section 3.1.9 of the Agreement ("Alternative Minimum Amount"). Such Alternative Minimum Amount, if provided, shall exceed zero, and shall be established in accordance with Prudent Electrical Practices and documentation supporting such a determination shall be provided to PGE upon execution of the Agreement. Such documentation shall be commercially reasonable, and may include, but is not limited to, documents used in financing the project, and data on output of similar projects operated by seller, PGE or others.

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EXHIBIT B
DESCRIPTION OF SELLER'S FACILITY

[Seller to Complete]

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EXHIBIT C
REQUIRED FACILITY DOCUMENTS

[Seller list all permits and authorizations required for this project]

Sellers Generation Interconnection Agreement

EXHIBIT D START-UP TESTING

[Seller identify appropriate tests]

Required factory testing includes such checks and tests necessary to determine that the equipment systems and subsystems have been properly manufactured and installed, function properly, and are in a condition to permit safe and efficient start-up of the Facility, which may include but are not limited to (as applicable):

1. Pressure tests of all steam system equipment;
2. Calibration of all pressure, level, flow, temperature and monitoring instruments;
3. Operating tests of all valves, operators, motor starters and motor;
4. Alarms, signals, and fail-safe or system shutdown control tests;
5. Insulation resistance and point-to-point continuity tests;
6. Bench tests of all protective devices;
7. Tests required by manufacturer of equipment; and
8. Complete pre-parallel checks with PGE.

Required start-up test are those checks and tests necessary to determine that all features and equipment, systems, and subsystems have been properly designed, manufactured, installed and adjusted, function properly, and are capable of operating simultaneously in such condition that the Facility is capable of continuous delivery into PGE's electrical system, which may include but are not limited to (as applicable):

1. Turbine/generator mechanical runs including shaft, vibration, and bearing temperature measurements;
2. Running tests to establish tolerances and inspections for final adjustment of bearings, shaft run-outs;
3. Brake tests;
4. Energization of transformers;
5. Synchronizing tests (manual and auto);
6. Stator windings dielectric test;
7. Armature and field windings resistance tests;
8. Load rejection tests in incremental stages from 5, 25, 50, 75 and 100 percent load;
9. Heat runs;
10. Tests required by manufacturer of equipment;
11. Excitation and voltage regulation operation tests;
12. Open circuit and short circuit; saturation tests;
13. Governor system steady state stability test;
14. Phase angle and magnitude of all PT and CT secondary voltages and currents to protective relays, indicating instruments and metering;
15. Auto stop/start sequence;
16. Level control system tests; and
17. Completion of all state and federal environmental testing requirements.

Schedule 201
Standard In System Non-Variable Power Purchase Agreement
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EXHIBIT E
SCHEDULE
[Attach currently in-effect Schedule 201]

Standard Off System Non-Variable Power Purchase Agreement
Effective _____

STANDARD OFF SYSTEM NON-VARIABLE POWER PURCHASE AGREEMENT

THIS AGREEMENT, entered into this _____ day, _____ 201____, is between _____ ("Seller") and Portland General Electric Company ("PGE") (hereinafter each a "Party" or collectively, "Parties").

RECITALS

Seller intends to construct, own, operate and maintain a _____ facility for the generation of electric power located in _____ County, _____ with a Nameplate Capacity Rating of _____ kilowatt ("kW"), as further described in Exhibit B ("Facility"); and

Seller intends to operate the Facility as a "Qualifying Facility," as such term is defined in Section 3.1.3, below.

Seller shall sell and PGE shall purchase the entire Net Output, as such term is defined in Section 1.19, below, from the Facility in accordance with the terms and conditions of this Agreement.

AGREEMENT

NOW, THEREFORE, the Parties mutually agree as follows:

SECTION 1: DEFINITIONS

When used in this Agreement, the following terms shall have the following meanings:

1.1. "As-built Supplement" means the supplement to Exhibit B provided by Seller in accordance with Section 4.4 following completion of construction of the Facility, describing the Facility as actually built.

1.2. "Billing Period" means a period between PGE's readings of its power purchase billing meter at the Facility in the normal course of PGE's business. Such periods typically vary and may not coincide with calendar months.

1.3. "Cash Escrow" means an agreement by two parties to place money into the custody of a third party for delivery to a grantee only after the fulfillment of the conditions specified.

1.4. "Commercial Operation Date" means the date that the Facility is deemed by PGE to be fully operational and reliable. PGE may, at its discretion require, among other things, that all of the following events have occurred:

1.4.1. (facilities with nameplate under 500 kW exempt from following requirement) PGE has received a certificate addressed to PGE from a Licensed

Professional Engineer ("LPE") acceptable to PGE in its reasonable judgment stating that the Facility is able to generate electric power reliably in amounts required by this Agreement and in accordance with all other terms and conditions of this Agreement (certifications required under this Section 1.4 can be provided by one or more LPEs);

1.4.2. Start-Up Testing of the Facility has been completed in accordance with Section 1.27;

1.4.3. (facilities with nameplate under 500 kW exempt from following requirement) After PGE has received notice of completion of Start-Up Testing, PGE has received a certificate addressed to PGE from an LPE stating that the Facility has operated for testing purposes under this Agreement uninterrupted for a Test Period at a rate in kW of at least 75 percent of average annual Net Output divided by 8,760 based upon any sixty (60) minute period for the entire testing period. The Facility must provide ten (10) working days written notice to PGE prior to the start of the initial testing period. If the operation of the Facility is interrupted during this initial testing period or any subsequent testing period, the Facility shall promptly start a new Test Period and provide PGE forty-eight (48) hours written notice prior to the start of such testing period;

1.4.4. (facilities with nameplate under 500 kW exempt from following requirement) PGE has received a certificate addressed to PGE from an LPE stating that all required interconnection facilities have been constructed and all required interconnection tests have been completed;

1.4.5. (facilities with nameplate under 500 kW exempt from following requirement) PGE has received a certificate addressed to PGE from an LPE stating that Seller has obtained all Required Facility Documents and, if requested by PGE in writing, has provided copies of any or all such requested Required Facility Documents;

1.4.6. PGE has received a copy of the Transmission Agreement.

1.5. "Contract Price" means the applicable price, including on-peak and off-peak prices, as selected by Seller in Section 5 and as specified in the Schedule.

1.6. "Contract Year" means each twelve (12) month period during the Term commencing upon the Commercial Operation Date or its anniversary during the Term, except the final contract year will be the period from the last anniversary of the Commercial Operation Date during the Term until the end of the Term.

1.7. "Effective Date" has the meaning set forth in Section 2.1.

1.8. "Environmental Attributes" means any and all current or future credits, benefits, emissions reductions, environmental air quality credits, emissions reduction credits, offsets and allowances, howsoever entitled, resulting from the avoidance of the emission of any gas, chemical or other substance attributable to the Facility during the

Term, or otherwise attributable to the generation, purchase, sale or use of energy from or by the Facility during the Term, including without limitation any of the same arising out of legislation or regulation concerned with oxides of nitrogen, sulfur or carbon, with particulate matter, soot or mercury, or implementing the United Nations Framework Convention on Climate Change (the "UNFCCC") or the Kyoto Protocol to the UNFCCC or crediting "early action" emissions reduction, or laws or regulations involving or administered by the Clean Air Markets Division of the Environmental Protection Agency or successor administrator, or any State or federal entity given jurisdiction over a program involving transferability of Environmental Attributes, including the Oregon Renewable Portfolio Standard and any Green Tag Reporting Rights to such Environmental Attributes.

1.9. "Facility" has the meaning set forth in the Recitals.

1.10. "Forward Replacement Price" means the price at which PGE, acting in a commercially reasonable manner, purchases for delivery at the Point of Delivery a replacement for any Net Output that Seller is required to deliver under this Agreement plus (i) costs reasonably incurred by PGE in purchasing such replacement Net Output, and (ii) additional transmission charges, if any, reasonably incurred by PGE in causing replacement energy to be delivered to the Point of Delivery. If PGE elects not to make such a purchase, costs of purchasing replacement Net Output shall be Dow Jones Mid C Index Price for such energy not delivered, plus any additional cost or expense incurred as a result of Seller's failure to deliver, as determined by PGE in a commercially reasonable manner (but not including any penalties, ratcheted demand or similar charges).

1.11. "Generation Interconnection Agreement" means an agreement governing the interconnection of the Facility with _____ electric system.

1.12. "Letter of Credit" means an engagement by a bank or other person made at the request of a customer that the issuer will honor drafts or other demands for payment upon compliance with the conditions specified in the letter of credit.

1.13. "Licensed Professional Engineer" or "LPE" means a person who is licensed to practice engineering in the state where the Facility is located, who has no economic relationship, association, or nexus with the Seller, and who is not a representative of a consulting engineer, contractor, designer or other individual involved in the development of the Facility, or of a manufacturer or supplier of any equipment installed in the Facility. Such Licensed Professional Engineer shall be licensed in an appropriate engineering discipline for the required certification being made and be acceptable to PGE in its reasonable judgment.

1.14. "Lost Energy Value" means for a Contract Year: zero, unless the Net Output is less than Minimum Net Output and the mean Dow Jones Mid C Index Price is greater than the Contract Price, in which case Lost Energy Value equals: (Minimum Net Output - Net Output) X (the lower of the mean Contract Price or the mean Dow Jones Mid C Index Price - mean Contract Price) minus Transmission Curtailment Replacement Energy Cost if any for like period.

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1.15. "Mid-Columbia" means an area which includes points at any of the switchyards associated with the following four hydro projects: Rocky Reach, Rock Island, Wanapum and Priest Rapids. These switchyards include: Rocky Reach, Rock Island, Wanapum, McKenzie, Valhalla, Columbia, Midway and Vantage. Mid-Columbia shall also include points in the "Northwest Hub," as defined by Bonneville Power Administration. For scheduling purposes, the footprint described above shall dictate the delivery point name for the then current Western Electricity Coordinating Council ("WECC") scheduling protocols. If the footprint changes during the Term, a mutually agreed upon footprint that describes an area containing the most liquidity for trading purposes shall apply.

1.16. "Minimum Net Output" shall have the meaning specified in Section 4.2 of this Agreement.

1.17. "Nameplate Capacity Rating" means the maximum capacity of the Facility as stated by the manufacturer, expressed in kW, which shall not exceed 10,000 kW.

1.18. "Net Dependable Capacity" means the maximum capacity the Facility can sustain over a specified period modified for seasonal limitations, if any, and reduced by the capacity required for station service or auxiliaries.

1.19. "Net Output" means all energy expressed in kWhs produced by the Facility, less station and other onsite use and less transformation and transmission losses. Net Output does not include any environmental attributes, imbalance power, or power from an integrating entity.

1.20. "Off-Peak Hours" has the meaning provided in the Schedule.

1.21. "On-Peak Hours" has the meaning provided in the Schedule.

1.22. "Point of Delivery" means the PGE System.

1.23. "Prime Rate" means the publicly announced prime rate or reference rate for commercial loans to large businesses with the highest credit rating in the United States in effect from time to time quoted by Citibank, N.A. If a Citibank, N.A. prime rate is not available, the applicable Prime Rate shall be the announced prime rate or reference rate for commercial loans in effect from time to time quoted by a bank with \$10 billion or more in assets in New York City, N.Y., selected by the Party to whom interest based on the prime rate is being paid.

1.24. "Prudent Electrical Practices" means those practices, methods, standards and acts engaged in or approved by a significant portion of the electric power industry in the Western Electricity Coordinating Council that at the relevant time period, in the exercise of reasonable judgment in light of the facts known or that should reasonably have been known at the time a decision was made, would have been expected to accomplish the desired result in a manner consistent with good business practices, reliability, economy, safety and expedition, and which practices, methods, standards and acts reflect due regard for operation and maintenance standards recommended by

applicable equipment suppliers and manufacturers, operational limits, and all applicable laws and regulations. Prudent Electrical Practices are not intended to be limited to the optimum practice, method, standard or act to the exclusion of all others, but rather to those practices, methods and acts generally acceptable or approved by a significant portion of the electric power generation industry in the relevant region, during the relevant period, as described in the immediate preceding sentence.

1.25. "Required Facility Documents" means all licenses, permits, authorizations, and agreements necessary for construction, operation, interconnection, and maintenance of the Facility including without limitation those set forth in Exhibit C.

1.26. "Senior Lien" means a prior lien which has precedence as to the property under the lien over another lien or encumbrance.

1.27. "Start-Up Testing" means the completion of applicable required factory and start-up tests as set forth in Exhibit D.

1.28. "Step-in Rights" means the right of one party to assume an intervening position to satisfy all terms of an agreement in the event the other party fails to perform its obligations under the agreement.

1.29. "Schedule" shall mean PGE Schedule 201 filed with the Oregon Public Utilities Commission ("Commission") in effect on the Effective Date of this Agreement and attached hereto as Exhibit E, the terms of which are hereby incorporated by reference. In the event of a conflict between this Agreement and the Schedule, this Agreement shall apply.

1.30. "Term" shall mean the period beginning on the Effective Date and ending on the Termination Date.

1.31. "Test Period" shall mean a period of sixty (60) days or a commercially reasonable period determined by the Seller.

1.32. "Transmission Agreement" means an agreement executed by the Seller and the Transmission Provider(s) for Transmission Services.

1.33. "Transmission Curtailment" means a limitation on Seller's ability to deliver any portion of the scheduled energy to PGE due to the unavailability of transmission to the Point of Delivery or a generating facility limitation by a Transmission Provider (for any reason other than Force Majeure).

1.34. "Transmission Curtailment Replacement Energy Cost" means the greater of zero or the difference between Dow Jones Mid C Index Price – Contract Price X curtailed energy for periods of Transmission Curtailment.

1.35. "Transmission Provider(s)" means the signatory (other than the Seller) to the Transmission Agreement.

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1.36. "Transmission Services" means any and all services (including but not limited to ancillary services and control area services) required for the firm transmission and delivery of Energy from the Facility to the Point of Delivery for a term not less than the Term of this Agreement.

1.37. References to Recitals, Sections, and Exhibits are to be the recitals, sections and exhibits of this Agreement.

SECTION 2: TERM; COMMERCIAL OPERATION DATE

2.1 This Agreement shall become effective upon execution by both Parties ("Effective Date").

2.2 Time is of the essence of this Agreement, and Seller's ability to meet certain requirements prior to the Commercial Operation Date and to complete all requirements to establish the Commercial Operation Date is critically important. Therefore,

2.2.1 By _____ [date to be determined by the Seller] Seller shall begin initial deliveries of Net Output; and

2.2.2 By _____ [date to be determined by the Seller] Seller shall have completed all requirements under Section 1.4 and shall have established the Commercial Operation Date.

2.2.3 In the event Seller is unable to meet the requirements of Sections 2.2.1 and 2.2.2, Seller shall pay damages equal to the Lost Energy Value. In calculating the Lost Energy Value for use in this section, the Minimum Net Output shall be prorated and applied to the period of time between the Commercial Operation date and the date specified in 2.2.1.

2.3 This Agreement shall terminate on _____, _____ [date to be chosen by Seller], up to 20 years from the Effective Date, or the date the Agreement is terminated in accordance with Section 9 or 12.2, whichever is earlier ("Termination Date").

SECTION 3: REPRESENTATIONS AND WARRANTIES

3.1 Seller and PGE represent, covenant, and warrant as follows:

3.1.1 Seller warrants it is a _____ duly organized under the laws of _____.

3.1.2 Seller warrants that the execution and delivery of this Agreement does not contravene any provision of, or constitute a default under, any indenture, mortgage, or other material agreement binding on Seller or any valid order of any court, or any regulatory agency or other body having authority to which Seller is subject.

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3.1.3 Seller warrants that the Facility is and shall for the Term of this Agreement continue to be a "Qualifying Facility" ("QF") as that term is defined in the version of 18 C.F.R. Part 292 in effect on the Effective Date. Seller has provided the appropriate QF certification, which may include a Federal Energy Regulatory Commission ("FERC") self-certification to PGE prior to PGE's execution of this Agreement. At any time during the Term of this Agreement, PGE may require Seller to provide PGE with evidence satisfactory to PGE in its reasonable discretion that the Facility continues to qualify as a QF under all applicable requirements.

3.1.4 Seller warrants that it has not within the past two (2) years been the debtor in any bankruptcy proceeding, and Seller is and will continue to be for the Term of this Agreement current on all of its financial obligations.

3.1.5 Seller warrants that during the Term of this Agreement, all of Seller's right, title and interest in and to the Facility shall be free and clear of all liens and encumbrances other than liens and encumbrances arising from third-party financing of the Facility other than workers', mechanics', suppliers' or similar liens, or tax liens, in each case arising in the ordinary course of business that are either not yet due and payable or that have been released by means of a performance bond acceptable to PGE posted within eight (8) calendar days of the commencement of any proceeding to foreclose the lien.

3.1.6 Seller warrants that it will design and operate the Facility consistent with Prudent Electrical Practices.

3.1.7 Seller warrants that the Facility has a Nameplate Capacity Rating not greater than 10,000 kW.

3.1.8 Seller warrants that Net Dependable Capacity of the Facility is _____ kW.

3.1.9 Seller estimates that the average annual Net Output to be delivered by the Facility to PGE is _____ kilowatt-hours ("kWh"), which amount PGE will include in its resource planning.

3.1.10 Seller will schedule and deliver from the Facility to PGE at the Point of Delivery Net Output not to exceed a maximum of _____ kWh of Net Output during each Contract Year ("Maximum Net Output"). The cost of delivering energy from the Facility to PGE is the sole responsibility of the Seller.

3.1.11 Seller has entered into a Generation Interconnection Agreement for a term not less than the term of this Agreement.

3.1.12 PGE warrants that it has not within the past two (2) years been the debtor in any bankruptcy proceeding, and PGE is and will continue to be for the Term of this Agreement current on all of its financial obligations.

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3.1.13 Seller warrants that (i) the Facility satisfies the eligibility requirements specified in the Definition of a Small Cogeneration Facility or Small Power Production Facility Eligible to Receive the Standard Rates and Standard PPA in PGE's Schedule and (ii) Seller will not make any changes in its ownership, control or management during the term of this Agreement that would cause it to not be in compliance with the Definition of a Small Cogeneration Facility or Small Power Production Facility Eligible to Receive the Standard Rates and Standard PPA in PGE's Schedule. Seller will provide, upon request by Buyer not more frequently than every 36 months, such documentation and information as may be reasonably required to establish Seller's continued compliance with such Definition. Buyer agrees to take reasonable steps to maintain the confidentiality of any portion of the above described documentation and information that the Seller identifies as confidential except Buyer will provide all such confidential information to the Public Utility Commission of Oregon upon the Commission's request.

SECTION 4: DELIVERY OF POWER

4.1 Commencing on the Effective Date and continuing through the Term of this Agreement, Seller shall sell to PGE the entire Net Output from the Facility. Seller's Net Output shall be scheduled and delivered to PGE at the Point of Delivery in accordance with Section 4.5.

4.2 Provided Seller has elected the Contract Price options in Section 5.1, 5.2, or 5.3, Seller shall schedule and deliver to PGE from the Facility for each Contract Year Net Output equal to or greater than the Minimum Net Output (either (a) if Seller does not select the Alternative Minimum Amount as defined in Exhibit A, a minimum of seventy-five percent (75%) of its average annual Net Output or (b) if selected by Seller, the Alternative Minimum Amount, provided that such Minimum Net Output for the final Contract Year shall be reduced pro rata to reflect the Commercial Operation Date, and further provided that such Minimum Net Output shall be reduced on a pro-rata basis for any periods during a Contract Year that the Facility was prevented from generating electricity for reasons of Force Majeure. PGE shall pay Seller the Contract Price for all scheduled and delivered Net Output.

4.3 Provided Seller has elected the Contract Price options in Section 5.1, 5.2, or 5.3, Seller agrees that if Seller does not deliver the Minimum Net Output each Contract Year for reasons other than Transmission Curtailment, PGE will suffer losses equal to the Lost Energy Value. As damages for Seller's failure to deliver the Minimum Net Output (subject to adjustment for reasons of Force Majeure as provided in Section 4.2) in any Contract Year, notwithstanding any other provision of this Agreement the purchase price payable by PGE for future deliveries shall be reduced until Lost Energy Value is recovered. PGE and Seller shall work together in good faith to establish the period, in monthly amounts, of such reduction so as to avoid Seller's default on its commercial or financing agreements necessary for its continued operation of the Facility for QF Facilities sized at 100 kW or smaller, the provisions of this section shall not apply.

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4.4 Upon completion of construction of the Facility, Seller shall provide PGE an As-built Supplement to specify the actual Facility as built. Seller shall not increase the Nameplate Capacity Rating above that specified in Exhibit B or increase the ability of the Facility to deliver Net Output in quantities in excess of the Net Dependable Capacity, or the Maximum Net Output as described in Section 3.1.10 above, through any means including, but not limited to, replacement, modification, or addition of existing equipment, except with prior written notice to PGE. In the event Seller increases the Nameplate Capacity Rating of the Facility to no more than 10,000 kW pursuant to this section, PGE shall pay the Contract Price for the additional delivered Net Output. In the event Seller increases the Nameplate Capacity Rating of the Facility to greater than 10,000 kW, then Seller shall be required to enter into a new power purchase agreement for all delivered Net Output proportionally related to the increase of Nameplate Capacity above 10,000 kW.

4.5 All energy shall be scheduled according to the most current North America Energy Reliability Corporation (NERC) and Western Electricity Coordinating Council (WECC) scheduling rules and practices. The Parties' respective representatives shall maintain hourly real-time schedule coordination; provided, however, that in the absence of such coordination, the hourly schedule established by the exchange of preschedules shall be considered final. Seller and PGE shall maintain records of hourly energy schedules for accounting and operating purposes. Deliveries shall not be made on a dynamic basis, and Seller shall insure that all deliveries of energy under this Agreement will be equal on an hourly basis to the amounts scheduled in the final schedule. Seller shall bear the cost of any transmission services, including but not limited to imbalance services, necessary to insure that energy deliveries under this Agreement are equal on an hourly basis to the amount of energy scheduled for each hour in the final schedule. The final schedule shall be provided by Seller to PGE no later than 20 minutes prior to delivery for the first 30 minutes of an hour (e.g., 1:00 to 1:30) and 15 minutes prior to delivery for the second 30 minutes of the hour (e.g., 1:30 to 2:00). The final E-Tag shall be the controlling evidence of the Parties' final schedule. Seller shall make commercially reasonable efforts to schedule in any hour an amount equal to its expected Net Output for such hour. Seller shall maintain a minimum of two years records of Net Output and shall agree to allow PGE to have access to such records and to imbalance information kept by the Transmission Provider.

4.6 Seller may report under §1605(b) of the Energy Policy Act of 1992 or under any applicable program as belonging to Seller any of the Environmental Attributes produced with respect to the Facility, and PGE shall not report under such program that such Environmental Attributes belong to it.

SECTION 5: CONTRACT PRICE

PGE shall pay Seller for the price options 5.1, 5.2, 5.3 or 5.4, as selected below, pursuant to the Schedule. Seller shall indicate which price option it chooses by marking its choice below with an X. If Seller chooses the option in Section 5.1, it must mark below with a second X a single second option from Section 5.2, 5.3, or 5.4 for all

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Contract Years in excess of 15 until the end of the Term. Except as provided herein, Sellers selection is for the Term and shall not be changed during the Term.

- 5.1 _____ Fixed Price for Non-Variable or Integrated Variable Resource
- 5.2 _____ Deadband Index Gas Price
- 5.3 _____ Index Gas Price
- 5.4 _____ Mid-C Index Rate Price

SECTION 6: OPERATION AND CONTROL

6.1 Seller shall operate and maintain the Facility in a safe manner in accordance with the Generation Interconnection Agreement, and Prudent Electrical Practices. PGE shall have no obligation to purchase Net Output from the Facility to the extent the interconnection of the Facility or transmission to PGE's electric system is curtailed, disconnected, suspended or interrupted, in whole or in part. Seller is solely responsible for the operation and maintenance of the Facility. PGE shall not, by reason of its decision to inspect or not to inspect the Facility, or by any action or inaction taken with respect to any such inspection, assume or be held responsible for any liability or occurrence arising from the operation and maintenance by Seller of the Facility.

6.2 Seller agrees to provide sixty (60) days advance written notice of any scheduled maintenance that would require shut down of the Facility for any period of time.

6.3 If the Facility ceases operation for unscheduled maintenance, Seller immediately shall notify PGE of the necessity of such unscheduled maintenance that could affect the generation, scheduling or delivery of energy to PGE, the time when such maintenance has occurred or will occur, and the anticipated duration of such maintenance. Seller shall take all reasonable measures and exercise its best efforts to avoid unscheduled maintenance, to limit the duration of such unscheduled maintenance, and to perform unscheduled maintenance during Off-Peak hours.

SECTION 7: CREDITWORTHINESS

In the event Seller: a) is unable to represent or warrant as required by Section 3 that it has not been a debtor in any bankruptcy proceeding within the past two (2) years; b) becomes such a debtor during the Term; or c) is not or will not be current on all its financial obligations, Seller shall immediately notify PGE and shall promptly (and in no less than ten (10) days after notifying PGE) provide default security in an amount reasonably acceptable to PGE in one of the following forms: Senior Lien, Step in Rights, a Cash Escrow or Letter of Credit. The amount of such default security that shall be acceptable to PGE shall be equal to: (annual On Peak Hours) X (On Peak Price – Off Peak Price) X (Minimum Net Output / 8760). Notwithstanding the foregoing, in the event Seller is not current on construction related financial obligations, Seller shall notify PGE of such delinquency and PGE may, in its discretion, grant an exception to the requirements to provide default security if the QF has negotiated financial arrangements with the construction loan lender that mitigate Seller's financial risk to PGE.

SECTION 8: BILLINGS, COMPUTATIONS AND PAYMENTS

8.1 On or before the thirtieth (30th) day following the end of each Billing Period, PGE shall send to Seller payment for Seller's deliveries of Net Output to PGE, together with computations supporting such payment. PGE may offset any such payment to reflect amounts owing from Seller to PGE pursuant to this Agreement and any other agreement related to the Facility between the Parties or otherwise.

8.2 Any amounts owing after the due date thereof shall bear interest at the Prime Rate plus two percent (2%) from the date due until paid; provided, however, that the interest rate shall at no time exceed the maximum rate allowed by applicable law.

SECTION 9: DEFAULT, REMEDIES AND TERMINATION

9.1 In addition to any other event that may constitute a default under this Agreement, the following events shall constitute defaults under this Agreement:

9.1.1 Breach by Seller or PGE of a representation or warranty, except for Section 3.1.4, set forth in this Agreement.

9.1.2 Seller's failure to provide default security, if required by Section 7, prior to delivery of any Net Output to PGE or within ten (10) days of notice.

9.1.3 Seller's failure to deliver the Minimum Net Output for two consecutive Contract Years.

9.1.4 If Seller is no longer a Qualifying Facility.

9.1.5 Failure of PGE to make any required payment pursuant to Section 8.1.

9.1.6 Seller's failure to accurately schedule Net Output, as required by Section 4.5, where there is a demonstrated pattern of scheduling errors. Scheduling errors may include: scheduled energy that differs from Net Output by more than 10% for multiple monthly periods, or in cases where net deviations result in demonstrated excess payments by PGE to the Seller.

9.2 In the event of a default hereunder, the non-defaulting party may immediately terminate this Agreement at its sole discretion by delivering written notice to the other Party, and, except for damages related to a default pursuant to Section 9.1.3, by a QF sized at 100 kW or smaller, may pursue any and all legal or equitable remedies provided by law or pursuant to this Agreement including damages related to the need to procure replacement power. Such termination shall be effective upon the date of delivery of notice, as provided in Section 21.1. The rights provided in this Section 9 are cumulative such that the exercise of one or more rights shall not constitute a waiver of any other rights.

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9.3 If this Agreement is terminated as provided in this Section 9, PGE shall make all payments, within thirty (30) days, that, pursuant to the terms of this Agreement, are owed to Seller as of the time of receipt of notice of default. PGE shall not be required to pay Seller for any Net Output delivered by Seller after such notice of default.

9.4 If this Agreement is terminated as a result of Seller's default, Seller shall pay PGE the positive difference, if any, obtained by subtracting the Contract Price from the sum of the Forward Replacement Price for the Minimum Net Output that Seller was otherwise obligated to provide for a period of twenty-four (24) months from the date of termination plus any cost incurred for transmission purchased by PGE to deliver the replacement power to the Point of Delivery and the estimated administrative cost to the utility to acquire replacement power. Accounts owed by Seller pursuant to this paragraph shall be due within five (5) business days after any invoice from PGE for the same.

9.5 In the event PGE terminates this Agreement pursuant to this Section 9, and Seller wishes to again sell Net Output to PGE following such termination, PGE in its sole discretion may require that Seller shall do so subject to the terms of this Agreement, including but not limited to the Contract Price until the Term of this Agreement (as set forth in Section 2.3) would have run in due course had the Agreement remained in effect. At such time Seller and PGE agree to execute a written document ratifying the terms of this Agreement.

9.6 Sections 9.1, 9.3, 9.4, 9.5, 11, and 20.2 shall survive termination of this Agreement.

SECTION 10: TRANSMISSION CURTAILMENTS

10.1 Seller shall give PGE notice as soon as reasonably practicable of any Transmission Curtailment that is likely to affect Seller's ability to deliver any portion of energy scheduled pursuant to Sections 4.5 of this Agreement.

10.2 If as the result of a Transmission Curtailment, Seller does not deliver any portion of energy (including real-time adjustments), scheduled pursuant to Section 4.5 of this Agreement, Seller shall pay PGE the Transmission Curtailment Replacement Energy Cost for the number of MWh of energy reasonably determined by PGE as the difference between (i) the scheduled energy that would have been delivered to PGE under this Agreement during the period of Transmission Curtailment and (ii) the actual energy, if any, that was delivered to PGE for the period.

SECTION 11: INDEMNIFICATION AND LIABILITY

11.1 Seller agrees to defend, indemnify and hold harmless PGE, its directors, officers, agents, and representatives against and from any and all loss, claims, actions or suits, including costs and attorney's fees, both at trial and on appeal, resulting from, or arising out of or in any way connected with Seller's delivery of electric power to PGE or with the facilities at or prior to the Point of Delivery, or otherwise arising out of this Agreement, including without limitation any loss, claim, action or suit, for or on account

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of injury, bodily or otherwise, to, or death of, persons, or for damage to, or destruction or economic loss of property belonging to PGE, Seller or others, excepting to the extent such loss, claim, action or suit may be caused by the negligence of PGE, its directors, officers, employees, agents or representatives.

11.2 PGE agrees to defend, indemnify and hold harmless Seller, its directors, officers, agents, and representatives against and from any and all loss, claims, actions or suits, including costs and attorney's fees, both at trial and on appeal, resulting from, or arising out of or in any way connected with PGE's receipt of electric power from Seller or with the facilities at or after the Point of Delivery, or otherwise arising out of this Agreement, including without limitation any loss, claim, action or suit, for or on account of injury, bodily or otherwise, to, or death of, persons, or for damage to, or destruction or economic loss of property belonging to PGE, Seller or others, excepting to the extent such loss, claim, action or suit may be caused by the negligence of Seller, its directors, officers, employees, agents or representatives.

11.3 Nothing in this Agreement shall be construed to create any duty to, any standard of care with reference to, or any liability to any person not a Party to this Agreement. No undertaking by one Party to the other under any provision of this Agreement shall constitute the dedication of that Party's system or any portion thereof to the other Party or to the public, nor affect the status of PGE as an independent public utility corporation or Seller as an independent individual or entity.

11.4 NEITHER PARTY SHALL BE LIABLE TO THE OTHER FOR SPECIAL, PUNITIVE, INDIRECT OR CONSEQUENTIAL DAMAGES, WHETHER ARISING FROM CONTRACT, TORT (INCLUDING NEGLIGENCE), STRICT LIABILITY OR OTHERWISE.

SECTION 12: INSURANCE

12.1 Prior to the connection of the Facility to PGE's electric system, provided such Facility has a design capacity of 200 kW or more, Seller shall secure and continuously carry for the Term hereof, with an insurance company or companies rated not lower than "B+" by the A. M. Best Company, insurance policies for bodily injury and property damage liability. Such insurance shall include provisions or endorsements naming PGE, its directors, officers and employees as additional insureds; provisions that such insurance is primary insurance with respect to the interest of PGE and that any insurance maintained by PGE is excess and not contributory insurance with the insurance required hereunder; a cross-liability or severability of insurance interest clause; and provisions that such policies shall not be canceled or their limits of liability reduced without thirty (30) days' prior written notice to PGE. Initial limits of liability for all requirements under this section shall be \$1,000,000 million single limit, which limits may be required to be increased or decreased by PGE as PGE determines in its reasonable judgment economic conditions or claims experience may warrant.

12.2 Prior to the connection of the Facility to PGE's electric system, provided such facility has a design capacity of 200 kW or more, Seller shall secure and continuously carry for the Term hereof, in an insurance company or companies rated

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not lower than "B+" by the A. M. Best Company, insurance acceptable to PGE against property damage or destruction in an amount not less than the cost of replacement of the Facility. Seller promptly shall notify PGE of any loss or damage to the Facility. Unless the Parties agree otherwise, Seller shall repair or replace the damaged or destroyed Facility, or if the facility is destroyed or substantially destroyed, it may terminate this Agreement. Such termination shall be effective upon receipt by PGE of written notice from Seller. Seller shall waive its insurers' rights of subrogation against PGE regarding Facility property losses.

12.3 Prior to the connection of the Facility to PGE's electric system and at all other times such insurance policies are renewed or changed, Seller shall provide PGE with a copy of each insurance policy required under this Section, certified as a true copy by an authorized representative of the issuing insurance company or, at the discretion of PGE, in lieu thereof, a certificate in a form satisfactory to PGE certifying the issuance of such insurance. If Seller fails to provide PGE with copies of such currently effective insurance policies or certificates of insurance, PGE at its sole discretion and without limitation of other remedies, may upon ten (10) days advance written notice by certified or registered mail to Seller either withhold payments due Seller until PGE has received such documents, or purchase the satisfactory insurance and offset the cost of obtaining such insurance from subsequent power purchase payments under this Agreement.

SECTION 13: FORCE MAJEURE

13.1 As used in this Agreement, "Force Majeure" or "an event of Force Majeure" means any cause beyond the reasonable control of the Seller or of PGE which, despite the exercise of due diligence, such Party is unable to prevent or overcome. By way of example, Force Majeure may include but is not limited to acts of God, fire, flood, storms, wars, hostilities, civil strife, strikes, and other labor disturbances, earthquakes, fires, lightning, epidemics, sabotage, restraint by court order or other delay or failure in the performance as a result of any action or inaction on behalf of a public authority which by the exercise of reasonable foresight such Party could not reasonably have been expected to avoid and by the exercise of due diligence, it shall be unable to overcome, subject, in each case, to the requirements of the first sentence of this paragraph. Force Majeure, however, specifically excludes Transmission Curtailment, the cost or availability of resources to operate the Facility, changes in market conditions that affect the price of energy or transmission, wind or water droughts, and obligations for the payment of money when due.

13.2 If either Party is rendered wholly or in part unable to perform its obligation under this Agreement because of an event of Force Majeure, that Party shall be excused from whatever performance is affected by the event of Force Majeure to the extent and for the duration of the Force Majeure, after which such Party shall recommence performance of such obligation, provided that:

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13.2.1 the non-performing Party, shall, promptly, but in any case within one (1) week after the occurrence of the Force Majeure, give the other Party written notice describing the particulars of the occurrence; and

13.2.2 the suspension of performance shall be of no greater scope and of no longer duration than is required by the Force Majeure; and

13.2.3 the non-performing Party uses its best efforts to remedy its inability to perform its obligations under this Agreement.

13.3 No obligations of either Party which arose before the Force Majeure causing the suspension of performance shall be excused as a result of the Force Majeure.

13.4 Neither Party shall be required to settle any strike, walkout, lockout or other labor dispute on terms which, in the sole judgment of the Party involved in the dispute, are contrary to the Party's best interests.

SECTION 14: SEVERAL OBLIGATIONS

Nothing contained in this Agreement shall ever be construed to create an association, trust, partnership or joint venture or to impose a trust or partnership duty, obligation or liability between the Parties. If Seller includes two or more parties, each such party shall be jointly and severally liable for Seller's obligations under this Agreement.

SECTION 15: CHOICE OF LAW

This Agreement shall be interpreted and enforced in accordance with the laws of the state of Oregon, excluding any choice of law rules which may direct the application of the laws of another jurisdiction.

SECTION 16: PARTIAL INVALIDITY AND PURPA REPEAL

It is not the intention of the Parties to violate any laws governing the subject matter of this Agreement. If any of the terms of the Agreement are finally held or determined to be invalid, illegal or void as being contrary to any applicable law or public policy, all other terms of the Agreement shall remain in effect. If any terms are finally held or determined to be invalid, illegal or void, the Parties shall enter into negotiations concerning the terms affected by such decision for the purpose of achieving conformity with requirements of any applicable law and the intent of the Parties to this Agreement.

In the event the Public Utility Regulatory Policies Act (PURPA) is repealed, this Agreement shall not terminate prior to the Termination Date, unless such termination is mandated by state or federal law.

SECTION 17: WAIVER

Any waiver at any time by either Party of its rights with respect to a default under this Agreement or with respect to any other matters arising in connection with this Agreement must be in writing, and such waiver shall not be deemed a waiver with respect to any subsequent default or other matter.

SECTION 18: GOVERNMENTAL JURISDICTION AND AUTHORIZATIONS

This Agreement is subject to the jurisdiction of those governmental agencies having control over either Party or this Agreement. Seller shall at all times maintain in effect all local, state and federal licenses, permits and other approvals as then may be required by law for the construction, operation and maintenance of the Facility, and shall provide upon request copies of the same to PGE.

SECTION 19: SUCCESSORS AND ASSIGNS

This Agreement and all of the terms hereof shall be binding upon and inure to the benefit of the respective successors and assigns of the Parties. No assignment hereof by either Party shall become effective without the written consent of the other Party being first obtained and such consent shall not be unreasonably withheld. Notwithstanding the foregoing, either Party may assign this Agreement without the other Party's consent as part of (a) a sale of all or substantially all of the assigning Party's assets, or (b) a merger, consolidation or other reorganization of the assigning Party.

SECTION 20: ENTIRE AGREEMENT

20.1 This Agreement supersedes all prior agreements, proposals, representations, negotiations, discussions or letters, whether oral or in writing, regarding PGE's purchase of Net Output from the Facility. No modification of this Agreement shall be effective unless it is in writing and signed by both Parties.

20.2 By executing this Agreement, Seller releases PGE from any third party claims related to the Facility, known or unknown, which may have arisen prior to the Effective Date.

SECTION 21: NOTICES

21.1 All notices except as otherwise provided in this Agreement shall be in writing, shall be directed as follows and shall be considered delivered if delivered in person or when deposited in the U.S. Mail, postage prepaid by certified or registered mail and return receipt requested:

To Seller:

with a copy to:

To PGE: Contracts Manager
 QF Contracts, 3WTGBR06
 PGE - 121 SW Salmon St.
 Portland, Oregon 97204

21.2 The Parties may change the person to whom such notices are addressed, or their addresses, by providing written notices thereof in accordance with this Section 21.

IN WITNESS WHEREOF, the Parties hereto have caused this Agreement to be executed in their respective names as of the Effective Date.

PGE

By: _____
Name: _____
Title: _____
Date: _____

(Name Seller)

By: _____
Name: _____
Title: _____
Date: _____

EXHIBIT A
MINIMUM NET OUTPUT

In this Exhibit, Seller may designate an alternative Minimum Net Output to seventy-five (75%) percent of annual average Net Output specified in Section 3.1.9 of the Agreement ("Alternative Minimum Amount"). Such Alternative Minimum Amount, if provided, shall exceed zero, and shall be established in accordance with Prudent Electrical Practices and documentation supporting such a determination shall be provided to PGE upon execution of the Agreement. Such documentation shall be commercially reasonable, and may include, but is not limited to, documents used in financing the project, and data on output of similar projects operated by seller, PGE or others.

EXHIBIT B
DESCRIPTION OF SELLER'S FACILITY

[Seller to Complete]

Standard Off System Non-Variable Power Purchase Agreement
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EXHIBIT C
REQUIRED FACILITY DOCUMENTS

[Seller list all permits and authorizations required for this project]

Sellers Generation Interconnection Agreement with interconnecting utility

Firm Transmission Agreement between Seller and Transmission Provider

EXHIBIT D START-UP TESTING

[Seller identify appropriate tests]

Required factory testing includes such checks and tests necessary to determine that the equipment systems and subsystems have been properly manufactured and installed, function properly, and are in a condition to permit safe and efficient start-up of the Facility, which may include but are not limited to (as applicable):

1. Pressure tests of all steam system equipment;
2. Calibration of all pressure, level, flow, temperature and monitoring instruments;
3. Operating tests of all valves, operators, motor starters and motor;
4. Alarms, signals, and fail-safe or system shutdown control tests;
5. Insulation resistance and point-to-point continuity tests;
6. Bench tests of all protective devices;
7. Tests required by manufacturer of equipment; and
8. Complete pre-parallel checks with PGE.

Required start-up test are those checks and tests necessary to determine that all features and equipment, systems, and subsystems have been properly designed, manufactured, installed and adjusted, function properly, and are capable of operating simultaneously in such condition that the Facility is capable of continuous delivery into PGE's electrical system, which may include but are not limited to (as applicable):

1. Turbine/generator mechanical runs including shaft, vibration, and bearing temperature measurements;
2. Running tests to establish tolerances and inspections for final adjustment of bearings, shaft run-outs;
3. Brake tests;
4. Energization of transformers;
5. Synchronizing tests (manual and auto);
6. Stator windings dielectric test;
7. Armature and field windings resistance tests;
8. Load rejection tests in incremental stages from 5, 25, 50, 75 and 100 percent load;
9. Heat runs;
10. Tests required by manufacturer of equipment;
11. Excitation and voltage regulation operation tests;
12. Open circuit and short circuit; saturation tests;
13. Governor system steady state stability test;
14. Phase angle and magnitude of all PT and CT secondary voltages and currents to protective relays, indicating instruments and metering;
15. Auto stop/start sequence;
16. Level control system tests; and
17. Completion of all state and federal environmental testing requirements.

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EXHIBIT E
SCHEDULE
[Attach currently in-effect Schedule 201]

**STANDARD IN SYSTEM VARIABLE RESOURCE POWER PURCHASE
AGREEMENT**

THIS AGREEMENT, entered into this _____ day, _____ 201____, is between _____ ("Seller") and Portland General Electric Company ("PGE") (hereinafter each a "Party" or collectively, "Parties").

RECITALS

Seller intends to construct, own, operate and maintain a _____ facility for the generation of electric power located in _____ County, _____ with a Nameplate Capacity Rating of _____ kilowatt ("kW"), as further described in Exhibit A ("Facility"); and

Seller intends to operate the Facility as a "Qualifying Facility," as such term is defined in Section 3.1.3, below.

Seller shall sell and PGE shall purchase the entire Net Output, as such term is defined in Section 1.17, below, from the Facility in accordance with the terms and conditions of this Agreement.

AGREEMENT

NOW, THEREFORE, the Parties mutually agree as follows:

SECTION 1: DEFINITIONS

When used in this Agreement, the following terms shall have the following meanings:

1.1. "As-built Supplement" means the supplement to Exhibit A provided by Seller in accordance with Section 4.3 following completion of construction of the Facility, describing the Facility as actually built.

1.2. "Base Hours" is defined as the total number of hours in each Contract Year (8,760 or 8,784 for leap year).

1.3. "Billing Period" means a period between PGE's readings of its power purchase billing meter at the Facility in the normal course of PGE's business. Such periods typically vary and may not coincide with calendar months.

1.4. "Cash Escrow" means an agreement by two parties to place money into the custody of a third party for delivery to a grantee only after the fulfillment of the conditions specified.

1.5. "Commercial Operation Date" means the date that the Facility is deemed by PGE to be fully operational and reliable. PGE may, in its discretion require, among other things, that all of the following events have occurred:

1.5.1. (facilities with nameplate under 500 kW exempt from following requirement) PGE has received a certificate addressed to PGE from a Licensed Professional Engineer ("LPE") acceptable to PGE in its reasonable judgment stating that the Facility is able to generate electric power reliably in accordance with the terms and conditions of this Agreement (certifications required under this Section 1.5 can be provided by one or more LPEs);

1.5.2. (facilities with nameplate under 500 kW exempt from following requirement) Start-Up Testing of the Facility has been completed in accordance with Section 1.26;

1.5.3. (facilities with nameplate under 500 kW exempt from following requirement) After PGE has received notice of completion of Start-Up Testing, PGE has received a certificate addressed to PGE from an LPE stating that the Facility has operated for testing purposes under this Agreement uninterrupted for a Test Period at a rate in kW of at least 75 percent of average annual Net Output divided by 8,760 based upon any sixty (60) minute period for the entire testing period. The Facility must provide ten (10) working days written notice to PGE prior to the start of the initial testing period. If the operation of the Facility is interrupted during this initial testing period or any subsequent testing period, the Facility shall promptly start a new Test Period and provide PGE forty-eight (48) hours written notice prior to the start of such testing period;

1.5.4. (facilities with nameplate under 500 kW exempt from following requirement) PGE has received a certificate addressed to PGE from an LPE stating that in accordance with the Generation Interconnection Agreement, all required interconnection facilities have been constructed all required interconnection tests have been completed; and the Facility is physically interconnected with PGE's electric system.

1.5.5. PGE has received a certificate addressed to PGE from an LPE stating that Seller has obtained all Required Facility Documents and, if requested by PGE in writing, has provided copies of any or all such requested Required Facility Documents;

1.6. "Contract Price" means the applicable price, including on-peak and off-peak prices, as selected by Seller in Section 5 and specified in the Schedule.

1.7. "Contract Year" means each twelve (12) month period during the Term commencing upon the Commercial Operation Date or its anniversary during the Term, except the final contract year will be the period from the last anniversary of the Commercial Operation Date during the Term until the end of the Term.

1.8. "Effective Date" has the meaning set forth in Section 2.1.

1.9. "Environmental Attributes" means any and all current or future credits, benefits, emissions reductions, environmental air quality credits, emissions reduction credits, offsets and allowances, howsoever entitled, resulting from the avoidance of the emission of any gas, chemical or other substance attributable to the Facility during the Term, or otherwise attributable to the generation, purchase, sale or use of energy from or by the Facility during the Term, including without limitation any of the same arising out of legislation or regulation concerned with oxides of nitrogen, sulfur or carbon, with particulate matter, soot or mercury, or implementing the United Nations Framework Convention on Climate Change (the "UNFCCC") or the Kyoto Protocol to the UNFCCC or crediting "early action" emissions reduction, or laws or regulations involving or administered by the Clean Air Markets Division of the Environmental Protection Agency or successor administrator, or any State or federal entity given jurisdiction over a program involving transferability of Environmental Attributes, and any Green Tag Reporting Rights to such Environmental Attributes.

1.10. "Facility" has the meaning set forth in the Recitals.

1.11. "Generation Interconnection Agreement" means the generation interconnection agreement to be entered into separately between Seller and PGE, providing for the construction, operation, and maintenance of PGE's interconnection facilities required to accommodate deliveries of Seller's Net Output.

1.12. "Letter of Credit" means an engagement by a bank or other person made at the request of a customer that the issuer will honor drafts or other demands for payment upon compliance with the conditions specified in the letter of credit.

1.13. "Licensed Professional Engineer" or "LPE" means a person who is licensed to practice engineering in the state where the Facility is located, who has no economic relationship, association, or nexus with the Seller, and who is not a representative of a consulting engineer, contractor, designer or other individual involved in the development of the Facility, or of a manufacturer or supplier of any equipment installed in the Facility. Such Licensed Professional Engineer shall be licensed in an appropriate engineering discipline for the required certification being made and be acceptable to PGE in its reasonable judgment.

1.14. "Mechanical Availability Percentage" or "MAP" shall mean that percentage for any Contract Year for the Facility calculated in accordance with the following formula:

$$\text{MAP} = 100 \times (\text{Operational Hours}) / (\text{Base Hours})$$

1.15. "Nameplate Capacity Rating" means the maximum capacity of the Facility as stated by the manufacturer, expressed in kW, which shall not exceed 10,000 kW.

1.16. "Net Dependable Capacity" means the maximum capacity the Facility can sustain over a specified period modified for seasonal limitations, if any, and reduced by the capacity required for station service or auxiliaries.

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1.17. "Net Output" means all energy expressed in kWhs produced by the Facility, less station and other onsite use and less transformation and transmission losses. Net Output does not include any environmental attributes, imbalance power, or power from an integrating entity.

1.18. "Off-Peak Hours" has the meaning provided in the Schedule.

1.19. "On-Peak Hours" has the meaning provided in the Schedule.

1.20. "Operational Hours" for the Facility means the number of hours the Facility is potentially capable of producing power at its Nameplate Capacity Rating regardless of actual weather or seasonal conditions, the time of day or night, without any mechanical operating constraint or restriction, and potentially capable of delivering such power to the Point of Delivery. Hours during which an event of Force Majeure exists that prevent the Facility from producing or delivering power shall be considered Operational Hours.

1.21. "Point of Delivery" means the high side of the generation step up transformer(s) located at the point of interconnection between the Facility and PGE's distribution or transmission system, as specified in the Generation Interconnection Agreement.

1.22. "Prime Rate" means the publicly announced prime rate or reference rate for commercial loans to large businesses with the highest credit rating in the United States in effect from time to time quoted by Citibank, N.A. If a Citibank, N.A. prime rate is not available, the applicable Prime Rate shall be the announced prime rate or reference rate for commercial loans in effect from time to time quoted by a bank with \$10 billion or more in assets in New York City, N.Y., selected by the Party to whom interest based on the prime rate is being paid.

1.23. "Prudent Electrical Practices" means those practices, methods, standards and acts engaged in or approved by a significant portion of the electric power industry in the Western Electricity Coordinating Council that at the relevant time period, in the exercise of reasonable judgment in light of the facts known or that should reasonably have been known at the time a decision was made, would have been expected to accomplish the desired result in a manner consistent with good business practices, reliability, economy, safety and expedition, and which practices, methods, standards and acts reflect due regard for operation and maintenance standards recommended by applicable equipment suppliers and manufacturers, operational limits, and all applicable laws and regulations. Prudent Electrical Practices are not intended to be limited to the optimum practice, method, standard or act to the exclusion of all others, but rather to those practices, methods and acts generally acceptable or approved by a significant portion of the electric power generation industry in the relevant region, during the relevant period, as described in the immediate preceding sentence.

1.24. "Required Facility Documents" means all licenses, permits, authorizations, and agreements necessary for construction, operation, interconnection, and maintenance of the Facility including without limitation those set forth in Exhibit B.

1.25. "Senior Lien" means a prior lien which has precedence as to the property under the lien over another lien or encumbrance.

1.26. "Start-Up Testing" means the completion of applicable required factory and start-up tests as set forth in Exhibit C.

1.27. "Step-in Rights" means the right of one party to assume an intervening position to satisfy all terms of an agreement in the event the other party fails to perform its obligations under the agreement.

1.28. "Schedule" shall mean PGE Schedule 201 filed with the Oregon Public Utilities Commission ("Commission") in effect on the Effective Date of this Agreement and attached hereto as Exhibit D, the terms of which are hereby incorporated by reference. In the event of a conflict between this Agreement and the Schedule, this Agreement shall apply.

1.29. "Term" shall mean the period beginning on the Effective Date and ending on the Termination Date.

1.30. "Test Period" shall mean a period of sixty (60) days or a commercially reasonable period determined by the Seller.

References to Recitals, Sections, and Exhibits are to be the recitals, sections and exhibits of this Agreement.

SECTION 2: TERM; COMMERCIAL OPERATION DATE

2.1 This Agreement shall become effective upon execution by both Parties ("Effective Date").

2.2 Time is of the essence of this Agreement, and Seller's ability to meet certain requirements prior to the Commercial Operation Date and to complete all requirements to establish the Commercial Operation Date is critically important. Therefore,

2.2.1 By _____ [date to be determined by the Seller] Seller shall begin initial deliveries of Net Output; and

2.2.2 By _____ [date to be determined by the Seller] Seller shall have completed all requirements under Section 1.5 and shall have established the Commercial Operation Date.

2.2.3 In the event Seller is unable to meet the requirements of Sections 2.2.1 and 2.2.2, PGE may terminate this agreement in accordance with Section 10.

2.3 This Agreement shall terminate on _____, _____ [date to be chosen by Seller], up to 20 years from the Effective Date, or the date the Agreement is

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terminated in accordance with Section 10 or 12, whichever is earlier ("Termination Date").

SECTION 3: REPRESENTATIONS AND WARRANTIES

3.1 Seller and PGE represent, covenant, and warrant as follows:

3.1.1 Seller warrants it is a _____ duly organized under the laws of _____.

3.1.2 Seller warrants that the execution and delivery of this Agreement does not contravene any provision of, or constitute a default under, any indenture, mortgage, or other material agreement binding on Seller or any valid order of any court, or any regulatory agency or other body having authority to which Seller is subject.

3.1.3 Seller warrants that the Facility is and shall for the Term of this Agreement continue to be a "Qualifying Facility" ("QF") as that term is defined in the version of 18 C.F.R. Part 292 in effect on the Effective Date. Seller has provided the appropriate QF certification, which may include a Federal Energy Regulatory Commission ("FERC") self-certification to PGE prior to PGE's execution of this Agreement. At any time during the Term of this Agreement, PGE may require Seller to provide PGE with evidence satisfactory to PGE in its reasonable discretion that the Facility continues to qualify as a QF under all applicable requirements.

3.1.4 Seller warrants that it has not within the past two (2) years been the debtor in any bankruptcy proceeding, and Seller is and will continue to be for the Term of this Agreement current on all of its financial obligations.

3.1.5 Seller warrants that during the Term of this Agreement, all of Seller's right, title and interest in and to the Facility shall be free and clear of all liens and encumbrances other than liens and encumbrances arising from third-party financing of the Facility other than workers', mechanics', suppliers' or similar liens, or tax liens, in each case arising in the ordinary course of business that are either not yet due and payable or that have been released by means of a performance bond acceptable to PGE posted within eight (8) calendar days of the commencement of any proceeding to foreclose the lien.

3.1.6 Seller warrants that it will design and operate the Facility consistent with Prudent Electrical Practices.

3.1.7 Seller warrants that the Facility has a Nameplate Capacity Rating not greater than 10,000 kW.

3.1.8 Seller warrants that Net Dependable Capacity of the Facility is _____ kW.

3.1.9 Seller estimates that the average annual Net Output to be delivered by the Facility to PGE is _____ kilowatt-hours ("kWh"), which amount PGE will include in its resource planning.

3.1.10 Seller represents and warrants that the Facility shall achieve the following Mechanical Availability Percentages ("Guarantee of Mechanical Availability"):

3.1.10.1 Ninety-one percent (91%) for the first Contract Year; and

3.1.10.2 Ninety-five percent (95%) beginning Contract Year two and extending throughout the remainder of the Term.

3.1.10.3 Annually, within 90 days of the end of each Contract Year, Seller shall send to PGE a detailed written report demonstrating and providing evidence of the actual MAP for the previous Contract Year.

3.1.11 Seller will deliver from the Facility to PGE at the Point of Delivery Net Output not to exceed a maximum of _____ kWh of Net Output during each Contract Year ("Maximum Net Output").

3.1.12 Seller has entered into a Generation Interconnection Agreement for a term not less than the term of this Agreement.

3.1.13 PGE warrants that it has not within the past two (2) years been the debtor in any bankruptcy proceeding, and PGE is and will continue to be for the Term of this Agreement current on all of its financial obligations.

3.1.14 Seller warrants that (i) the Facility satisfies the eligibility requirements specified in the Definition of a Small Cogeneration Facility or Small Power Production Facility Eligible to Receive the Standard Rates and Standard Contract in PGE's Schedule and (ii) Seller will not make any changes in its ownership, control or management during the term of this Agreement that would cause it to not be in compliance with the Definition of a Small Cogeneration Facility or Small Power Production Facility Eligible to Receive the Standard Rates and Standard Contract in PGE's Schedule. Seller will provide, upon request by Buyer not more frequently than every 36 months, such documentation and information as may be reasonably required to establish Seller's continued compliance with such Definition. Buyer agrees to take reasonable steps to maintain the confidentiality of any portion of the above described documentation and information that the Seller identifies as confidential except Buyer will provide all such confidential information to the Public Utility Commission of Oregon upon the Commission's request.

SECTION 4: DELIVERY OF POWER

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4.1 Commencing on the Effective Date and continuing through the Term of this Agreement, Seller shall sell to PGE the entire Net Output delivered from the Facility at the Point of Delivery.

4.2 PGE shall pay Seller the Contract Price for all delivered Net Output.

4.3 Upon completion of construction of the Facility, Seller shall provide PGE an As-built Supplement to specify the actual Facility as built. Seller shall not increase the Nameplate Capacity Rating above that specified in Exhibit A or increase the ability of the Facility to deliver Net Output in quantities in excess of the Net Dependable Capacity, or the Maximum Net Output as described in Section 3.1.11 above, through any means including, but not limited to, replacement, modification, or addition of existing equipment, except with prior written notice to PGE. In the event Seller increases the Nameplate Capacity Rating of the Facility to no more than 10,000 kW pursuant to this section, PGE shall pay the Contract Price for the additional delivered Net Output. In the event Seller increases the Nameplate Capacity Rating to greater than 10,000 kW, then Seller shall be required to enter into a new power purchase agreement for all delivered Net Output proportionally related to the increase of Nameplate Capacity above 10,000 kW.

4.4 All energy shall be scheduled according to the most current North America Energy Reliability Corporation (NERC) and Western Electricity Coordinating Council (WECC) scheduling rules and practices. The Parties' respective representatives shall maintain accurate dynamic schedule coordination; provided, however, that in the absence of such coordination, the schedule established by the exchange of preschedules shall be considered final. The final schedule shall be provided by Seller to PGE no later than 20 minutes prior to delivery for the first 30 minutes of an hour (e.g., 1:00 to 1:30) and 15 minutes prior to delivery for the second 30 minutes of the hour (e.g., 1:30 to 2:00). Seller and PGE shall maintain records of energy schedules for delivery for accounting and operating purposes. The final E-Tag shall be the controlling evidence of the Parties' schedule. Seller shall be obligated to meet a certain minimum scheduling accuracy level which shall measure the level of variation between the final schedule(s) for the applicable interval and the Net Output delivered for that same interval. The actual final schedules provided by Seller shall meet or exceed the scheduling accuracy level of 30-Minute Persistence Scheduling. For purposes of this section, the accuracy level of 30-Minute Persistence Scheduling is the accuracy level that would be achieved if Seller's final schedule(s) for the next schedule interval is the Seller's instantaneous actual generation from the Facility 30 minutes prior. For example, under 30-Minute Persistence Scheduling, the Seller's schedule for 2:00 to 2:30 is the Seller's Facility's actual instantaneous generation at 1:30 and the Seller's schedule for 2:30 to 3:00 is the Seller's Facility's actual instantaneous generation at 2:00. Seller shall maintain a minimum of two years records of Net Output and shall agree to allow PGE to have access to such records.

4.5 To the extent not otherwise provided in the Generation Interconnection Agreement, all costs associated with the modifications to PGE's interconnection facilities or electric system occasioned by or related to the interconnection of the Facility with PGE's system, or any increase in generating capability of the Facility, or any

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increase of delivery of Net Dependable Capacity from the Facility, shall be borne by Seller.

4.6 Seller may report under §1605(b) of the Energy Policy Act of 1992 or under any applicable program as belonging to Seller any of the Environmental Attributes produced with respect to the Facility, and PGE shall not report under such program that such Environmental Attributes belong to it.

SECTION 5: CONTRACT PRICE

PGE shall pay Seller for the price options 5.1, 5.2, 5.3 or 5.4, as selected below, pursuant to the Schedule. Seller shall indicate which price option it chooses by marking its choice below with an X. If Seller chooses the option in Section 5.1, it must mark below with a second X a single second option from Section 5.2, 5.3, or 5.4 for all Contract Years in excess of 15 until the end of the Term. Except as provided herein, Sellers selection is for the Term and shall not be changed during the Term.

- 5.1 Fixed Price Variable Resource
- 5.2 Deadband Index Gas Price
- 5.3 Index Gas Price
- 5.4 Mid-C Index Rate Price

SECTION 6: OPERATION AND CONTROL

6.1 Seller shall operate and maintain the Facility in a safe manner in accordance with the Generation Interconnection Agreement, and Prudent Electrical Practices. PGE shall have no obligation to purchase Net Output from the Facility to the extent the interconnection of the Facility to PGE's electric system is disconnected, suspended or interrupted, in whole or in part, pursuant to the Generation Interconnection Agreement, or to the extent generation curtailment is required as a result of Seller's noncompliance with the Generation Interconnection Agreement. Seller is solely responsible for the operation and maintenance of the Facility. PGE shall not, by reason of its decision to inspect or not to inspect the Facility, or by any action or inaction taken with respect to any such inspection, assume or be held responsible for any liability or occurrence arising from the operation and maintenance by Seller of the Facility.

6.2 Seller agrees to provide sixty (60) days advance written notice of any scheduled maintenance that would require shut down of the Facility for any period of time.

6.3 If the Facility ceases operation for unscheduled maintenance, Seller immediately shall notify PGE of the necessity of such unscheduled maintenance, the time when such maintenance has occurred or will occur, and the anticipated duration of such maintenance. Seller shall take all reasonable measures and exercise its best efforts to avoid unscheduled maintenance, to limit the duration of such unscheduled maintenance, and to perform unscheduled maintenance during Off-Peak hours.

SECTION 7: CREDITWORTHINESS

In the event Seller: a) is unable to represent or warrant as required by Section 3 that it has not been a debtor in any bankruptcy proceeding within the past two (2) years; b) becomes such a debtor during the Term; or c) is not or will not be current on all its financial obligations, Seller shall immediately notify PGE and shall promptly (and in no less than 10 days after notifying PGE) provide default security in an amount reasonably acceptable to PGE in one of the following forms: Senior Lien, Step-in Rights, a Cash Escrow or Letter of Credit. The amount of such default security that shall be acceptable to PGE shall be equal to: (annual On Peak Hours) X (On Peak Price – Off Peak Price) X (Net Dependable Capacity). Notwithstanding the foregoing, in the event Seller is not current on construction related financial obligations, Seller shall notify PGE of such delinquency and PGE may, in its discretion, grant an exception to the requirements to provide default security if the QF has negotiated financial arrangements with the construction loan lender that mitigate Seller's financial risk to PGE.

SECTION 8: METERING

8.1 PGE shall design, furnish, install, own, inspect, test, maintain and replace all metering equipment at Seller's cost and as required pursuant to the Generation Interconnection Agreement.

8.2 Metering shall be performed at the location and in a manner consistent with this Agreement and as specified in the Generation Interconnection Agreement. All Net Output purchased hereunder shall be adjusted to account for electrical losses, if any, between the point of metering and the Point of Delivery, so that the purchased amount reflects the net amount of power flowing into PGE's system at the Point of Delivery.

8.3 PGE shall periodically inspect, test, repair and replace the metering equipment as provided in the Generation Interconnection Agreement. If any of the inspections or tests discloses an error exceeding two (2%) percent of the actual energy delivery, either fast or slow, proper correction, based upon the inaccuracy found, shall be made of previous readings for the actual period during which the metering equipment rendered inaccurate measurements if that period can be ascertained. If the actual period cannot be ascertained, the proper correction shall be made to the measurements taken during the time the metering equipment was in service since last tested, but not exceeding three (3) months, in the amount the metering equipment shall have been shown to be in error by such test. Any correction in billings or payments resulting from a correction in the meter records shall be made in the next monthly billing or payment rendered. Such correction, when made, shall constitute full adjustment of any claim between Seller and PGE arising out of such inaccuracy of metering equipment.

8.4 To the extent not otherwise provided in the Generation Interconnection Agreement, all of PGE's costs relating to all metering equipment installed to accommodate Seller's Facility shall be borne by Seller.

SECTION 9: BILLINGS, COMPUTATIONS AND PAYMENTS

9.1 On or before the thirtieth (30th) day following the end of each Billing Period, PGE shall send to Seller payment for Seller's deliveries of Net Output to PGE, together with computations supporting such payment. PGE may offset any such payment to reflect amounts owing from Seller to PGE pursuant to this Agreement, the Generation Interconnection Agreement, and any other agreement related to the Facility between the Parties or otherwise.

9.2 Any amounts owing after the due date thereof shall bear interest at the Prime Rate plus two percent (2%) from the date due until paid; provided, however, that the interest rate shall at no time exceed the maximum rate allowed by applicable law.

SECTION 10: DEFAULT, REMEDIES AND TERMINATION

10.1 In addition to any other event that may constitute a default under this Agreement, the following events shall constitute defaults under this Agreement:

10.1.1 Breach by Seller or PGE of a representation or warranty, except for Section 3.1.4, set forth in this Agreement.

10.1.2 Seller's failure to provide default security, if required by Section 7, prior to delivery of any Net Output to PGE or within 10 days of notice.

10.1.3 Seller's failure to meet the MAP established in Section 3.1.10 – Guarantee of Mechanical Availability for any single Contract Year or Seller's failure to provide any written report required by that section.

10.1.4 If Seller is no longer a Qualifying Facility.

10.1.5 Failure of PGE to make any required payment pursuant to Section 9.1.

10.2 In the event of a default hereunder, the non-defaulting party may immediately terminate this Agreement at its sole discretion by delivering written notice to the other Party, and, except for damages related to a default pursuant to Section 10.1.3 by a QF sized at 100 kW or smaller, may pursue any and all legal or equitable remedies provided by law or pursuant to this Agreement including damages related to the need to procure replacement power. Such termination shall be effective upon the date of delivery of notice, as provided in Section 21. The rights provided in this Section 10 are cumulative such that the exercise of one or more rights shall not constitute a waiver of any other rights.

10.3 If this Agreement is terminated as provided in this Section 10 PGE shall make all payments, within thirty (30) days, that, pursuant to the terms of this Agreement, are owed to Seller as of the time of receipt of notice of default. PGE shall not be required to pay Seller for any Net Output delivered by Seller after such notice of default.

10.4 In the event PGE terminates this Agreement pursuant to this Section 10, and Seller wishes to again sell Net Output to PGE following such termination, PGE in its sole discretion may require that Seller shall do so subject to the terms of this Agreement, including but not limited to the Contract Price until the Term of this Agreement (as set forth in Section 2.3) would have run in due course had the Agreement remained in effect. At such time Seller and PGE agree to execute a written document ratifying the terms of this Agreement.

10.5 Sections 10.1, 10.3, 10.4, 11, and 20.2 shall survive termination of this Agreement.

SECTION 11: INDEMNIFICATION AND LIABILITY

11.1 Seller agrees to defend, indemnify and hold harmless PGE, its directors, officers, agents, and representatives against and from any and all loss, claims, actions or suits, including costs and attorney's fees, both at trial and on appeal, resulting from, or arising out of or in any way connected with Seller's delivery of electric power to PGE or with the facilities at or prior to the Point of Delivery, or otherwise arising out of this Agreement, including without limitation any loss, claim, action or suit, for or on account of injury, bodily or otherwise, to, or death of, persons, or for damage to, or destruction or economic loss of property belonging to PGE, Seller or others, excepting to the extent such loss, claim, action or suit may be caused by the negligence of PGE, its directors, officers, employees, agents or representatives.

11.2 PGE agrees to defend, indemnify and hold harmless Seller, its directors, officers, agents, and representatives against and from any and all loss, claims, actions or suits, including costs and attorney's fees, both at trial and on appeal, resulting from, or arising out of or in any way connected with PGE's receipt of electric power from Seller or with the facilities at or after the Point of Delivery, or otherwise arising out of this Agreement, including without limitation any loss, claim, action or suit, for or on account of injury, bodily or otherwise, to, or death of, persons, or for damage to, or destruction or economic loss of property belonging to PGE, Seller or others, excepting to the extent such loss, claim, action or suit may be caused by the negligence of Seller, its directors, officers, employees, agents or representatives.

11.3 Nothing in this Agreement shall be construed to create any duty to, any standard of care with reference to, or any liability to any person not a Party to this Agreement. No undertaking by one Party to the other under any provision of this Agreement shall constitute the dedication of that Party's system or any portion thereof to the other Party or to the public, nor affect the status of PGE as an independent public utility corporation or Seller as an independent individual or entity.

11.4 NEITHER PARTY SHALL BE LIABLE TO THE OTHER FOR SPECIAL, PUNITIVE, INDIRECT OR CONSEQUENTIAL DAMAGES, WHETHER ARISING FROM CONTRACT, TORT (INCLUDING NEGLIGENCE), STRICT LIABILITY OR OTHERWISE.

SECTION 12: INSURANCE

12.1 Prior to the connection of the Facility to PGE's electric system, provided such Facility has a design capacity of 200 kW or more, Seller shall secure and continuously carry for the Term hereof, with an insurance company or companies rated not lower than "B+" by the A. M. Best Company, insurance policies for bodily injury and property damage liability. Such insurance shall include provisions or endorsements naming PGE, its directors, officers and employees as additional insureds; provisions that such insurance is primary insurance with respect to the interest of PGE and that any insurance maintained by PGE is excess and not contributory insurance with the insurance required hereunder; a cross-liability or severability of insurance interest clause; and provisions that such policies shall not be canceled or their limits of liability reduced without thirty (30) days' prior written notice to PGE. Initial limits of liability for all requirements under this section shall be \$1,000,000 million single limit, which limits may

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be required to be increased or decreased by PGE as PGE determines in its reasonable judgment economic conditions or claims experience may warrant.

12.2 Prior to the connection of the Facility to PGE's electric system, provided such facility has a design capacity of 200 kW or more, Seller shall secure and continuously carry for the Term hereof, in an insurance company or companies rated not lower than "B+" by the A. M. Best Company, insurance acceptable to PGE against property damage or destruction in an amount not less than the cost of replacement of the Facility. Seller promptly shall notify PGE of any loss or damage to the Facility. Unless the Parties agree otherwise, Seller shall repair or replace the damaged or destroyed Facility, or if the facility is destroyed or substantially destroyed, it may terminate this Agreement. Such termination shall be effective upon receipt by PGE of written notice from Seller. Seller shall waive its insurers' rights of subrogation against PGE regarding Facility property losses.

12.3 Prior to the connection of the Facility to PGE's electric system and at all other times such insurance policies are renewed or changed, Seller shall provide PGE with a copy of each insurance policy required under this Section, certified as a true copy by an authorized representative of the issuing insurance company or, at the discretion of PGE, in lieu thereof, a certificate in a form satisfactory to PGE certifying the issuance of such insurance. If Seller fails to provide PGE with copies of such currently effective insurance policies or certificates of insurance, PGE at its sole discretion and without limitation of other remedies, may upon ten (10) days advance written notice by certified or registered mail to Seller either withhold payments due Seller until PGE has received such documents, or purchase the satisfactory insurance and offset the cost of obtaining such insurance from subsequent power purchase payments under this Agreement.

SECTION 13: FORCE MAJEURE

13.1 As used in this Agreement, "Force Majeure" or "an event of Force Majeure" means any cause beyond the reasonable control of the Seller or of PGE which, despite the exercise of due diligence, such Party is unable to prevent or overcome. By way of example, Force Majeure may include but is not limited to acts of God, fire, flood, storms, wars, hostilities, civil strife, strikes, and other labor disturbances, earthquakes, fires, lightning, epidemics, sabotage, restraint by court order or other delay or failure in the performance as a result of any action or inaction on behalf of a public authority which by the exercise of reasonable foresight such Party could not reasonably have been expected to avoid and by the exercise of due diligence, it shall be unable to overcome, subject, in each case, to the requirements of the first sentence of this paragraph. Force Majeure, however, specifically excludes the cost or availability of resources to operate the Facility, changes in market conditions that affect the price of energy or transmission, wind or water droughts, and obligations for the payment of money when due.

13.2 If either Party is rendered wholly or in part unable to perform its obligation under this Agreement because of an event of Force Majeure, that Party shall be

excused from whatever performance is affected by the event of Force Majeure to the extent and for the duration of the Force Majeure, after which such Party shall recommence performance of such obligation, provided that:

13.2.1 the non-performing Party shall, promptly, but in any case within one (1) week after the occurrence of the Force Majeure, give the other Party written notice describing the particulars of the occurrence; and

13.2.2 the suspension of performance shall be of no greater scope and of no longer duration than is required by the Force Majeure; and

13.2.3 the non-performing Party uses its best efforts to remedy its inability to perform its obligations under this Agreement.

13.3 No obligations of either Party which arose before the Force Majeure causing the suspension of performance shall be excused as a result of the Force Majeure.

13.4 Neither Party shall be required to settle any strike, walkout, lockout or other labor dispute on terms which, in the sole judgment of the Party involved in the dispute, are contrary to the Party's best interests.

SECTION 14: SEVERAL OBLIGATIONS

Nothing contained in this Agreement shall ever be construed to create an association, trust, partnership or joint venture or to impose a trust or partnership duty, obligation or liability between the Parties. If Seller includes two or more parties, each such party shall be jointly and severally liable for Seller's obligations under this Agreement.

SECTION 15: CHOICE OF LAW

This Agreement shall be interpreted and enforced in accordance with the laws of the state of Oregon, excluding any choice of law rules which may direct the application of the laws of another jurisdiction.

SECTION 16: PARTIAL INVALIDITY AND PURPA REPEAL

It is not the intention of the Parties to violate any laws governing the subject matter of this Agreement. If any of the terms of the Agreement are finally held or determined to be invalid, illegal or void as being contrary to any applicable law or public policy, all other terms of the Agreement shall remain in effect. If any terms are finally held or determined to be invalid, illegal or void, the Parties shall enter into negotiations concerning the terms affected by such decision for the purpose of achieving conformity with requirements of any applicable law and the intent of the Parties to this Agreement.

In the event the Public Utility Regulatory Policies Act (PURPA) is repealed, this Agreement shall not terminate prior to the Termination Date, unless such termination is mandated by state or federal law.

SECTION 17: WAIVER

Any waiver at any time by either Party of its rights with respect to a default under this Agreement or with respect to any other matters arising in connection with this Agreement must be in writing, and such waiver shall not be deemed a waiver with respect to any subsequent default or other matter.

SECTION 18: GOVERNMENTAL JURISDICTION AND AUTHORIZATIONS

This Agreement is subject to the jurisdiction of those governmental agencies having control over either Party or this Agreement. Seller shall at all times maintain in effect all local, state and federal licenses, permits and other approvals as then may be required by law for the construction, operation and maintenance of the Facility, and shall provide upon request copies of the same to PGE.

SECTION 19: SUCCESSORS AND ASSIGNS

This Agreement and all of the terms hereof shall be binding upon and inure to the benefit of the respective successors and assigns of the Parties. No assignment hereof by either Party shall become effective without the written consent of the other Party being first obtained and such consent shall not be unreasonably withheld. Notwithstanding the foregoing, either Party may assign this Agreement without the other Party's consent as part of (a) a sale of all or substantially all of the assigning Party's assets, or (b) a merger, consolidation or other reorganization of the assigning Party.

SECTION 20: ENTIRE AGREEMENT

20.1 This Agreement supersedes all prior agreements, proposals, representations, negotiations, discussions or letters, whether oral or in writing, regarding PGE's purchase of Net Output from the Facility. No modification of this Agreement shall be effective unless it is in writing and signed by both Parties.

20.2 By executing this Agreement, Seller releases PGE from any third party claims related to the Facility, known or unknown, which may have arisen prior to the Effective Date.

SECTION 21: NOTICES

All notices except as otherwise provided in this Agreement shall be in writing, shall be directed as follows and shall be considered delivered if delivered in person or when deposited in the U.S. Mail, postage prepaid by certified or registered mail and return receipt requested:

To Seller: _____

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with a copy to:

To PGE: Contracts Manager
 QF Contracts, 3WTCBR06
 PGE - 121 SW Salmon St.
 Portland, Oregon 97204

21.2 The Parties may change the person to whom such notices are addressed, or their addresses, by providing written notices thereof in accordance with this Section 21.

IN WITNESS WHEREOF, the Parties hereto have caused this Agreement to be executed in their respective names as of the Effective Date.

PGE

By: _____
Name: _____
Title: _____
Date: _____

(Name Seller)

By: _____
Name: _____
Title: _____
Date: _____

EXHIBIT A
DESCRIPTION OF SELLER'S FACILITY

[Seller to Complete]

**EXHIBIT B
REQUIRED FACILITY DOCUMENTS**

[Seller list all permits and authorizations required for this project]

Sellers Generation Interconnection Agreement

EXHIBIT C START-UP TESTING

[Seller identify appropriate tests]

Required factory testing includes such checks and tests necessary to determine that the equipment systems and subsystems have been properly manufactured and installed, function properly, and are in a condition to permit safe and efficient start-up of the Facility, which may include but are not limited to (as applicable):

1. Pressure tests of all steam system equipment;
2. Calibration of all pressure, level, flow, temperature and monitoring instruments;
3. Operating tests of all valves, operators, motor starters and motor;
4. Alarms, signals, and fail-safe or system shutdown control tests;
5. Insulation resistance and point-to-point continuity tests;
6. Bench tests of all protective devices;
7. Tests required by manufacturer of equipment; and
8. Complete pre-parallel checks with PGE.

Required start-up test are those checks and tests necessary to determine that all features and equipment, systems, and subsystems have been properly designed, manufactured, installed and adjusted, function properly, and are capable of operating simultaneously in such condition that the Facility is capable of continuous delivery into PGE's electrical system, which may include but are not limited to (as applicable):

1. Turbine/generator mechanical runs including shaft, vibration, and bearing temperature measurements;
2. Running tests to establish tolerances and inspections for final adjustment of bearings, shaft run-outs;
3. Brake tests;
4. Energization of transformers;
5. Synchronizing tests (manual and auto);
6. Stator windings dielectric test;
7. Armature and field windings resistance tests;
8. Load rejection tests in incremental stages from 5, 25, 50, 75 and 100 percent load;
9. Heat runs;
10. Tests required by manufacturer of equipment;
11. Excitation and voltage regulation operation tests;
12. Open circuit and short circuit; saturation tests;
13. Governor system steady state stability test;
14. Phase angle and magnitude of all PT and CT secondary voltages and currents to protective relays, indicating instruments and metering;
15. Auto stop/start sequence;
16. Level control system tests; and
17. Completion of all state and federal environmental testing requirements

EXHIBIT D
SCHEDULE
[Attach currently in-effect Schedule 201]

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**STANDARD OFF SYSTEM INTEGRATED VARIABLE RESOURCES POWER
PURCHASE AGREEMENT**

THIS AGREEMENT, entered into this _____ day, _____ 201____, is between _____ ("Seller") and Portland General Electric Company ("PGE") (hereinafter each a "Party" or collectively, "Parties").

RECITALS

Seller intends to construct, own, operate and maintain a _____ facility for the generation of electric power located in _____ County, _____ with a Nameplate Capacity Rating of _____ kilowatt ("kW"), as further described in Exhibit A ("Facility"); and

Seller intends to operate the Facility as a "Qualifying Facility," as such term is defined in Section 3.1.3, below.

Seller shall sell and PGE shall purchase the entire Net Output, as such term is defined in Section 1.17, below, from the Facility in accordance with the terms and conditions of this Agreement.

AGREEMENT

NOW, THEREFORE, the Parties mutually agree as follows:

SECTION 1: DEFINITIONS

When used in this Agreement, the following terms shall have the following meanings:

1.1. "As-built Supplement" means the supplement to Exhibit A provided by Seller in accordance with Section 4.3 following completion of construction of the Facility, describing the Facility as actually built.

1.2. "Base Hours" is defined as the total number of hours each Contract Year (8,760 or 8,784 for leap year).

1.3. "Billing Period" means a period between PGE's readings of its power purchase billing meter at the Facility in the normal course of PGE's business. Such periods typically vary and may not coincide with calendar months.

1.4. "Cash Escrow" means an agreement by two parties to place money into the custody of a third party for delivery to a grantee only after the fulfillment of the conditions specified.

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1.5. "Commercial Operation Date" means the date that the Facility is deemed by PGE to be fully operational and reliable. PGE may, at its discretion require, among other things, that all of the following events have occurred:

1.5.1. (facilities with nameplate under 500 kW exempt from following requirement) PGE has received a certificate addressed to PGE from a Licensed Professional Engineer ("LPE") acceptable to PGE in its reasonable judgment stating that the Facility is able to generate electric power reliably in accordance with the terms and conditions of this Agreement (certifications required under this Section 1.5 can be provided by one or more LPEs);

1.5.2. Start-Up Testing of the Facility has been completed in accordance with Section 1.26;

1.5.3. (facilities with nameplate under 500 kW exempt from following requirement) After PGE has received notice of completion of Start-Up Testing, PGE has received a certificate addressed to PGE from an LPE stating that the Facility has operated for testing purposes under this Agreement uninterrupted for a Test Period at a rate in kW of at least 75 percent of average annual Net Output divided by 8,760 based upon any sixty (60) minute period for the entire testing period. The Facility must provide ten (10) working days written notice to PGE prior to the start of the initial testing period. If the operation of the Facility is interrupted during this initial testing period or any subsequent testing period, the Facility shall promptly start a new Test Period and provide PGE forty-eight (48) hours written notice prior to the start of such testing period;

1.5.4. (facilities with nameplate under 500 kW exempt from following requirement) PGE has received a certificate addressed to PGE from an LPE stating that all required interconnection facilities have been constructed and all required interconnection tests have been completed;

1.5.5. PGE has received a certificate addressed to PGE from an LPE stating that Seller has obtained all Required Facility Documents and, if requested by PGE in writing, has provided copies of any or all such requested Required Facility Documents;

1.5.6. PGE has received a copy of the Transmission Agreement.

1.6. "Contract Price" means the applicable price, including on-peak and off-peak prices, as selected by Seller in Section 5 and as specified in the Schedule.

1.7. "Contract Year" means each twelve (12) month period commencing upon the Commercial Operation Date or its anniversary during the Term, except the final contract year will be the period from the last anniversary of the Commercial Operation Date during the Term until the end of the Term.

1.8. "Effective Date" has the meaning set forth in Section 2.1.

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1.9. "Environmental Attributes" means any and all current or future credits, benefits, emissions reductions, environmental air quality credits, emissions reduction credits, offsets and allowances, howsoever entitled, resulting from the avoidance of the emission of any gas, chemical or other substance attributable to the Facility during the Term, or otherwise attributable to the generation, purchase, sale or use of energy from or by the Facility during the Term, including without limitation any of the same arising out of legislation or regulation concerned with oxides of nitrogen, sulfur or carbon, with particulate matter, soot or mercury, or implementing the United Nations Framework Convention on Climate Change (the "UNFCCC") or the Kyoto Protocol to the UNFCCC or crediting "early action" emissions reduction, or laws or regulations involving or administered by the Clean Air Markets Division of the Environmental Protection Agency or successor administrator, or any State or federal entity given jurisdiction over a program involving transferability of Environmental Attributes, including the Oregon Renewable Portfolio Standard, and any Green Tag Reporting Rights to such Environmental Attributes.

1.10. "Facility" has the meaning set forth in the Recitals.

1.11. "Generation Interconnection Agreement" means an agreement governing the interconnection of the Facility with _____ electric system.

1.12. "Letter of Credit" means an engagement by a bank or other person made at the request of a customer that the issuer will honor drafts or other demands for payment upon compliance with the conditions specified in the letter of credit.

1.13. "Licensed Professional Engineer" or "LPE" means a person who is licensed to practice engineering in the state where the Facility is located, who has no economic relationship, association, or nexus with the Seller, and who is not a representative of a consulting engineer, contractor, designer or other individual involved in the development of the Facility, or of a manufacturer or supplier of any equipment installed in the Facility. Such Licensed Professional Engineer shall be licensed in an appropriate engineering discipline for the required certification being made and be acceptable to PGE in its reasonable judgment.

1.14. "Mechanical Availability Percentage" or "MAP" shall mean that percentage for any Contract Year for the Facility calculated in accordance with the following formula:

$$\text{MAP} = 100 \times (\text{Operational Hours}) / (\text{Base Hours})$$

1.15. "Nameplate Capacity Rating" means the maximum capacity of the Facility as stated by the manufacturer, expressed in kW, which shall not exceed 10,000 kW.

1.16. "Net Dependable Capacity" means the maximum capacity the Facility can sustain over a specified period modified for seasonal limitations, if any, and reduced by the capacity required for station service or auxiliaries.

1.17. "Net Output" means all energy expressed in kWhs produced by the Facility, less station and other onsite use and less transformation and transmission

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losses. Net Output does not include any environmental attributes, imbalance power, or power from an integrating entity.

1.18. "Off-Peak Hours" has the meaning provided in the Schedule.

1.19. "On-Peak Hours" has the meaning provided in the Schedule.

1.20. "Operational Hours" for the Facility means the number of hours the Facility is potentially capable of producing power at its Nameplate Capacity Rating regardless of actual weather conditions, season and time of day or night, without any mechanical operating constraint or restriction, and potentially capable of delivering such power to the Point of Delivery. Hours during which an event of Force Majeure exists that prevent the Facility from producing or delivering power shall be considered Operational Hours.

1.21. "Point of Delivery" means the PGE System.

1.22. "Prime Rate" means the publicly announced prime rate or reference rate for commercial loans to large businesses with the highest credit rating in the United States in effect from time to time quoted by Citibank, N.A. If a Citibank, N.A. prime rate is not available, the applicable Prime Rate shall be the announced prime rate or reference rate for commercial loans in effect from time to time quoted by a bank with \$10 billion or more in assets in New York City, N.Y., selected by the Party to whom interest based on the prime rate is being paid.

1.23. "Prudent Electrical Practices" means those practices, methods, standards and acts engaged in or approved by a significant portion of the electric power industry in the Western Electricity Coordinating Council that at the relevant time period, in the exercise of reasonable judgment in light of the facts known or that should reasonably have been known at the time a decision was made, would have been expected to accomplish the desired result in a manner consistent with good business practices, reliability, economy, safety and expedition, and which practices, methods, standards and acts reflect due regard for operation and maintenance standards recommended by applicable equipment suppliers and manufacturers, operational limits, and all applicable laws and regulations. Prudent Electrical Practices are not intended to be limited to the optimum practice, method, standard or act to the exclusion of all others, but rather to those practices, methods and acts generally acceptable or approved by a significant portion of the electric power generation industry in the relevant region, during the relevant period, as described in the immediate preceding sentence.

1.24. "Required Facility Documents" means all licenses, permits, authorizations, and agreements necessary for construction, operation, interconnection, and maintenance of the Facility including without limitation those set forth in Exhibit B.

1.25. "Senior Lien" means a prior lien which has precedence as to the property under the lien over another lien or encumbrance.

1.26. "Start-Up Testing" means the completion of applicable required factory and start-up tests as set forth in Exhibit C.

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1.27. "Step-in Rights" means the right of one party to assume an intervening position to satisfy all terms of an agreement in the event the other party fails to perform its obligations under the agreement.

1.28. "Schedule" shall mean PGE Schedule 201 filed with the Oregon Public Utilities Commission ("Commission") in effect on the Effective Date of this Agreement and attached hereto as Exhibit D, the terms of which are hereby incorporated by reference. In the event of a conflict between this Agreement and the Schedule, this Agreement shall apply.

1.29. "Term" shall mean the period beginning on the Effective Date and ending on the Termination Date.

1.30. "Test Period" shall mean a period of sixty (60) days or a commercially reasonable period determined by the Seller.

1.31. "Transmission Agreement" means an agreement executed by the Seller and the Transmission Provider(s) for Transmission Services.

1.32. "Transmission Curtailment" means a limitation on Seller's ability to deliver any portion of the scheduled energy to PGE due to the unavailability of transmission to the Point of Delivery or a generating facility limitation by a Transmission Provider (for any reason other than Force Majeure).

1.33. "Transmission Curtailment Replacement Energy Cost" means the greater of zero or the amount calculated as: ((Dow Jones Mid C Index Price – Contract Price) X curtailed energy) for periods of Transmission Curtailment.

1.34. "Transmission Provider(s)" means the signatory (other than the Seller) to the Transmission Agreement.

1.35. "Transmission Services" means any and all services (including but not limited to ancillary services and control area services) required for the firm transmission and delivery of Energy from the Facility to the Point of Delivery for a term not less than the Term of this Agreement.

References to Recitals, Sections, and Exhibits are to be the recitals, sections and exhibits of this Agreement.

SECTION 2: TERM; COMMERCIAL OPERATION DATE

2.1 This Agreement shall become effective upon execution by both Parties ("Effective Date").

2.2 Time is of the essence of this Agreement, and Seller's ability to meet certain requirements prior to the Commercial Operation Date and to complete all requirements to establish the Commercial Operation Date is critically important. Therefore,

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2.2.1 By _____ [date to be determined by the Seller] Seller shall begin initial deliveries of Net Output; and

2.2.2 By _____ [date to be determined by the Seller] Seller shall have completed all requirements under Section 1.5 and shall have established the Commercial Operation Date.

2.2.3 In the event Seller is unable to meet the requirements of Sections 2.2.1 and 2.2.2, PGE may terminate this agreement in accordance with Section 9.

2.3 This Agreement shall terminate on _____, _____ [date to be chosen by Seller], up to 20 years from the Effective Date, or the date the Agreement is terminated in accordance with Section 9 or 12, whichever is earlier ("Termination Date").

SECTION 3: REPRESENTATIONS AND WARRANTIES

3.1 Seller and PGE represent, covenant, and warrant as follows:

3.1.1 Seller warrants it is a _____ duly organized under the laws of _____.

3.1.2 Seller warrants that the execution and delivery of this Agreement does not contravene any provision of, or constitute a default under, any indenture, mortgage, or other material agreement binding on Seller or any valid order of any court, or any regulatory agency or other body having authority to which Seller is subject.

3.1.3 Seller warrants that the Facility is and shall for the Term of this Agreement continue to be a "Qualifying Facility" ("QF") as that term is defined in the version of 18 C.F.R. Part 292 in effect on the Effective Date. Seller has provided the appropriate QF certification, which may include a Federal Energy Regulatory Commission ("FERC") self-certification to PGE prior to PGE's execution of this Agreement. At any time during the Term of this Agreement, PGE may require Seller to provide PGE with evidence satisfactory to PGE in its reasonable discretion that the Facility continues to qualify as a QF under all applicable requirements.

3.1.4 Seller warrants that it has not within the past two (2) years been the debtor in any bankruptcy proceeding, and Seller is and will continue to be for the Term of this Agreement current on all of its financial obligations.

3.1.5 Seller warrants that during the Term of this Agreement, all of Seller's right, title and interest in and to the Facility shall be free and clear of all liens and encumbrances other than liens and encumbrances arising from third-party financing of the Facility other than workers', mechanics', suppliers' or similar liens, or tax liens, in each case arising in the ordinary course of business that are either not yet due and payable or that have been released by means of a

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performance bond acceptable to PGE posted within eight (8) calendar days of the commencement of any proceeding to foreclose the lien.

3.1.6 Seller warrants that it will design and operate the Facility consistent with Prudent Electrical Practices.

3.1.7 Seller warrants that the Facility has a Nameplate Capacity Rating not greater than 10,000 kW.

3.1.8 Seller warrants that Net Dependable Capacity of the Facility is _____ kW.

3.1.9 Seller estimates that the average annual Net Output to be delivered by the Facility to PGE is _____ kilowatt-hours ("kWh"), which amount PGE will include in its resource planning.

3.1.10 Seller represents and warrants that the Facility shall achieve the following Mechanical Availability Percentages ("Guarantee of Mechanical Availability"):

3.1.10.1 Ninety-one percent (91%) for the first Contract Year;
and

3.1.10.2 Ninety-five percent (95%) beginning Contract Year two and extending throughout the remainder of the Term.

3.1.10.3 Annually, within 90 days of the end of each Contract Year, Seller shall send to PGE a detailed written report demonstrating and providing evidence of the actual MAP for the previous Contract Year.

3.1.11 Seller will deliver from the Facility to PGE at the Point of Delivery Net Output not to exceed a maximum of _____ kWh of Net Output during each Contract Year ("Maximum Net Output"). The cost of delivering energy from the Facility to PGE is the sole responsibility of the Seller.

3.1.12 Seller has entered into a Generation Interconnection Agreement for a term not less than the term of this Agreement.

3.1.13 PGE warrants that it has not within the past two (2) years been the debtor in any bankruptcy proceeding, and PGE is and will continue to be for the Term of this Agreement current on all of its financial obligations.

3.1.14 Seller warrants that (i) the Facility satisfies the eligibility requirements specified in the Definition of a Small Cogeneration Facility or Small Power Production Facility Eligible to Receive the Standard Rates and Standard PPA in PGE's Schedule and (ii) Seller will not make any changes in its ownership, control or management during the term of this Agreement that would cause it to not be in compliance with the Definition of a Small Cogeneration

Facility or Small Power Production Facility Eligible to Receive the Standard Rates and Standard PPA in PGE's Schedule. Seller will provide, upon request by Buyer not more frequently than every 36 months, such documentation and information as may be reasonably required to establish Seller's continued compliance with such Definition. Buyer agrees to take reasonable steps to maintain the confidentiality of any portion of the above described documentation and information that the Seller identifies as confidential except Buyer will provide all such confidential information to the Public Utility Commission of Oregon upon the Commission's request.

SECTION 4: DELIVERY OF POWER

4.1 Commencing on the Effective Date and continuing through the Term of this Agreement, Seller shall sell to PGE the entire Net Output delivered from the Facility at the Point of Delivery.

4.2 PGE shall pay Seller the Contract Price for all delivered Net Output.

4.3 Upon completion of construction of the Facility, Seller shall provide PGE an As-built Supplement to specify the actual Facility as built. Seller shall not increase the Nameplate Capacity Rating above that specified in Exhibit A or increase the ability of the Facility to deliver Net Output in quantities in excess of the Net Dependable Capacity, or the Maximum Net Output as described in Section 3.1.11 above, through any means including, but not limited to, replacement, modification, or addition of existing equipment, except with prior written notice to PGE. In the event Seller increases the Nameplate Capacity Rating of the Facility to no more than 10,000 kW pursuant to this section, PGE shall pay the Contract Price for the additional delivered Net Output. In the event Seller increases the Nameplate Capacity Rating to greater than 10,000 kW, then Seller shall be required to enter into a new power purchase agreement for all delivered Net Output proportionally related to the increase of Nameplate Capacity above 10,000 kW.

4.4 All energy shall be scheduled according to the most current North America Energy Reliability Corporation (NERC) and Western Electricity Coordinating Council (WECC) scheduling rules and practices. The Parties' respective representatives shall maintain hourly real-time schedule coordination; provided, however, that in the absence of such coordination, the hourly schedule established by the exchange of preschedules shall be considered final. Seller and PGE shall maintain records of hourly energy schedules for accounting and operating purposes. Deliveries shall not be made on a dynamic basis, and Seller shall insure that all deliveries of energy under this Agreement will be equal on an hourly basis to the amounts scheduled in the final schedule. Seller shall bear the cost of any transmission services, including but not limited to imbalance services, necessary to insure that energy deliveries under this Agreement are equal on an hourly basis to the amount of energy scheduled for each hour in the final schedule. The final schedule shall be provided by Seller to PGE no later than 20 minutes prior to delivery for the first 30 minutes of an hour (e.g., 1:00 to 1:30) and 15 minutes prior to delivery for the second 30 minutes of the hour (e.g., 1:30 to 2:00). The final E-Tag shall

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be the controlling evidence of the Parties' final schedule. Seller shall make commercially reasonable efforts to schedule in any hour an amount equal to its expected Net Output for such hour. Seller shall maintain a minimum of two years records of Net Output and shall agree to allow PGE to have access to such records and to imbalance information kept by the Transmission Provider.

4.5 Seller may report under §1605(b) of the Energy Policy Act of 1992 or under any applicable program as belonging to Seller any of the Environmental Attributes produced with respect to the Facility, and PGE shall not report under such program that such Environmental Attributes belong to it.

SECTION 5: CONTRACT PRICE

PGE shall pay Seller for the price options 5.1, 5.2, 5.3 or 5.4, as selected below, pursuant to the Schedule. Seller shall indicate which price option it chooses by marking its choice below with an X. If Seller chooses the option in Section 5.1, it must mark below with a second X a single second option from Section 5.2, 5.3, or 5.4 for all Contract Years in excess of 15 until the end of the Term. Except as provided herein, Sellers selection is for the Term and shall not be changed during the Term.

- 5.1 _____ Fixed Price for Non Variable or Integrated Variable Resources
- 5.2 _____ Deadband Index Gas Price
- 5.3 _____ Index Gas Price
- 5.4 _____ Mid-C Index Rate Price

SECTION 6: OPERATION AND CONTROL

6.1 Seller shall operate and maintain the Facility in a safe manner in accordance with the Generation Interconnection Agreement, and Prudent Electrical Practices. PGE shall have no obligation to purchase Net Output from the Facility to the extent the interconnection of the Facility to PGE's electric system is disconnected, suspended or interrupted, in whole or in part, pursuant to the Generation Interconnection Agreement, or to the extent generation curtailment is required as a result of Seller's noncompliance with the Generation Interconnection Agreement. Seller is solely responsible for the operation and maintenance of the Facility. PGE shall not, by reason of its decision to inspect or not to inspect the Facility, or by any action or inaction taken with respect to any such inspection, assume or be held responsible for any liability or occurrence arising from the operation and maintenance by Seller of the Facility.

6.2 Seller agrees to provide sixty (60) days advance written notice of any scheduled maintenance that would require shut down of the Facility for any period of time.

6.3 If the Facility ceases operation for unscheduled maintenance, Seller immediately shall notify PGE of the necessity of such unscheduled maintenance, the time when such maintenance has occurred or will occur, and the anticipated duration of

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such maintenance. Seller shall take all reasonable measures and exercise its best efforts to avoid unscheduled maintenance, to limit the duration of such unscheduled maintenance, and to perform unscheduled maintenance during Off-Peak hours.

SECTION 7: CREDITWORTHINESS

In the event Seller: a) is unable to represent or warrant as required by Section 3 that it has not been a debtor in any bankruptcy proceeding within the past two (2) years; b) becomes such a debtor during the Term; or c) is not or will not be current on all its financial obligations, Seller shall immediately notify PGE and shall promptly (and in no less than 10 days after notifying PGE) provide default security in an amount reasonably acceptable to PGE in one of the following forms: Senior Lien, Step-in Rights, a Cash Escrow or Letter of Credit. The amount of such default security that shall be acceptable to PGE shall be equal to: (annual On Peak Hours) X (On Peak Price – Off Peak Price) X (Net Dependable Capacity). Notwithstanding the foregoing, in the event Seller is not current on construction related financial obligations, Seller shall notify PGE of such delinquency and PGE may, in its discretion, grant an exception to the requirements to provide default security if the QF has negotiated financial arrangements with the construction loan lender that mitigate Seller's financial risk to PGE.

SECTION 8: BILLINGS, COMPUTATIONS AND PAYMENTS

8.1 On or before the thirtieth (30th) day following the end of each Billing Period, PGE shall send to Seller payment for Seller's deliveries of Net Output to PGE, together with computations supporting such payment. PGE may offset any such payment to reflect amounts owing from Seller to PGE pursuant to this Agreement and any other agreement related to the Facility between the Parties or otherwise.

8.2 Any amounts owing after the due date thereof shall bear interest at the Prime Rate plus two percent (2%) from the date due until paid; provided, however, that the interest rate shall at no time exceed the maximum rate allowed by applicable law.

SECTION 9: DEFAULT, REMEDIES AND TERMINATION

9.1 In addition to any other event that may constitute a default under this Agreement, the following events shall constitute defaults under this Agreement:

9.1.1 Breach by Seller or PGE of a representation or warranty, except for Section 3.1.4, set forth in this Agreement.

9.1.2 Seller's failure to provide default security, if required by Section 7, prior to delivery of any Net Output to PGE or within 10 days of notice.

9.1.3 Seller's failure to meet the MAP established in Section 3.1.10 – Guarantee of Mechanical Availability for any single Contract Year or Seller's failure to provide any written report required by that section.

9.1.4 If Seller is no longer a Qualifying Facility.

9.1.5 Failure of PGE to make any required payment pursuant to Section 8.1.

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9.2 In the event of a default hereunder, the non-defaulting party may immediately terminate this Agreement at its sole discretion by delivering written notice to the other Party, and, except for damages related to a default pursuant to Section 9.1.3 by a QF sized at 100 kW or smaller, may pursue any and all legal or equitable remedies provided by law or pursuant to this Agreement including damages related to the need to procure replacement power. Such termination shall be effective upon the date of delivery of notice, as provided in Section 21. The rights provided in this Section 9 are cumulative such that the exercise of one or more rights shall not constitute a waiver of any other rights.

9.3 If this Agreement is terminated as provided in this Section 9, PGE shall make all payments, within thirty (30) days, that, pursuant to the terms of this Agreement, are owed to Seller as of the time of receipt of notice of default. PGE shall not be required to pay Seller for any Net Output delivered by Seller after such notice of default.

9.4 In the event PGE terminates this Agreement pursuant to this Section 9, and Seller wishes to again sell Net Output to PGE following such termination, PGE in its sole discretion may require that Seller shall do so subject to the terms of this Agreement, including but not limited to the Contract Price until the Term of this Agreement (as set forth in Section 2.3) would have run in due course had the Agreement remained in effect. At such time Seller and PGE agree to execute a written document ratifying the terms of this Agreement.

9.5 Sections 9.1, 9.3, 9.4, 11, and 20.2 shall survive termination of this Agreement.

SECTION 10: TRANSMISSION CURTAILMENTS

10.1 Seller shall give PGE notice as soon as reasonably practicable of any Transmission Curtailment that is likely to affect Seller's ability to deliver any portion of energy scheduled pursuant to Sections 4.4 of this Agreement.

10.2 If as the result of a Transmission Curtailment, Seller does not deliver any portion of energy (including real-time adjustments), scheduled pursuant to Section 4.4 of this Agreement, Seller shall pay PGE the Transmission Curtailment Replacement Energy Cost for the number of MWh of energy reasonably determined by PGE as the difference between (i) the scheduled energy that would have been delivered to PGE under this Agreement during the period of Transmission Curtailment and (ii) the actual energy, if any, that was delivered to PGE for the period.

SECTION 11: INDEMNIFICATION AND LIABILITY

11.1 Seller agrees to defend, indemnify and hold harmless PGE, its directors, officers, agents, and representatives against and from any and all loss, claims, actions or suits, including costs and attorney's fees, both at trial and on appeal, resulting from, or arising out of or in any way connected with Seller's delivery of electric power to PGE or with the facilities at or prior to the Point of Delivery, or otherwise arising out of this Agreement, including without limitation any loss, claim, action or suit, for or on account of injury, bodily or otherwise, to, or death of, persons, or for damage to, or destruction or economic loss of property belonging to PGE, Seller or others, excepting to the extent such loss, claim, action or suit may be caused by the negligence of PGE, its directors, officers, employees, agents or representatives.

11.2 PGE agrees to defend, indemnify and hold harmless Seller, its directors, officers, agents, and representatives against and from any and all loss, claims, actions or suits, including costs and attorney's fees, both at trial and on appeal, resulting from, or arising out of or in any way connected with PGE's receipt of electric power from Seller or with the facilities at or after the Point of Delivery, or otherwise arising out of this Agreement, including without limitation any loss, claim, action or suit, for or on account of injury, bodily or otherwise, to, or death of, persons, or for damage to, or destruction or economic loss of property belonging to PGE, Seller or others, excepting to the extent such loss, claim, action or suit may be caused by the negligence of Seller, its directors, officers, employees, agents or representatives.

11.3 Nothing in this Agreement shall be construed to create any duty to, any standard of care with reference to, or any liability to any person not a Party to this Agreement. No undertaking by one Party to the other under any provision of this Agreement shall constitute the dedication of that Party's system or any portion thereof to the other Party or to the public, nor affect the status of PGE as an independent public utility corporation or Seller as an independent individual or entity.

11.4 NEITHER PARTY SHALL BE LIABLE TO THE OTHER FOR SPECIAL, PUNITIVE, INDIRECT OR CONSEQUENTIAL DAMAGES, WHETHER ARISING FROM CONTRACT, TORT (INCLUDING NEGLIGENCE), STRICT LIABILITY OR OTHERWISE.

SECTION 12: INSURANCE

12.1 Prior to the connection of the Facility to PGE's electric system, provided such Facility has a design capacity of 200 kW or more, Seller shall secure and continuously carry for the Term hereof, with an insurance company or companies rated not lower than "B+" by the A. M. Best Company, insurance policies for bodily injury and property damage liability. Such insurance shall include provisions or endorsements naming PGE, its directors, officers and employees as additional insureds; provisions that such insurance is primary insurance with respect to the interest of PGE and that any insurance maintained by PGE is excess and not contributory insurance with the insurance required hereunder; a cross-liability or severability of insurance interest

clause; and provisions that such policies shall not be canceled or their limits of liability reduced without thirty (30) days' prior written notice to PGE. Initial limits of liability for all requirements under this section shall be \$1,000,000 million single limit, which limits may be required to be increased or decreased by PGE as PGE determines in its reasonable judgment economic conditions or claims experience may warrant.

12.2 Prior to the connection of the Facility to PGE's electric system, provided such facility has a design capacity of 200 kW or more, Seller shall secure and continuously carry for the Term hereof, in an insurance company or companies rated not lower than "B+" by the A. M. Best Company, insurance acceptable to PGE against property damage or destruction in an amount not less than the cost of replacement of the Facility. Seller promptly shall notify PGE of any loss or damage to the Facility. Unless the Parties agree otherwise, Seller shall repair or replace the damaged or destroyed Facility, or if the facility is destroyed or substantially destroyed, it may terminate this Agreement. Such termination shall be effective upon receipt by PGE of written notice from Seller. Seller shall waive its insurers' rights of subrogation against PGE regarding Facility property losses.

12.3 Prior to the connection of the Facility to PGE's electric system and at all other times such insurance policies are renewed or changed, Seller shall provide PGE with a copy of each insurance policy required under this Section, certified as a true copy by an authorized representative of the issuing insurance company or, at the discretion of PGE, in lieu thereof, a certificate in a form satisfactory to PGE certifying the issuance of such insurance. If Seller fails to provide PGE with copies of such currently effective insurance policies or certificates of insurance, PGE at its sole discretion and without limitation of other remedies, may upon ten (10) days advance written notice by certified or registered mail to Seller either withhold payments due Seller until PGE has received such documents, or purchase the satisfactory insurance and offset the cost of obtaining such insurance from subsequent power purchase payments under this Agreement.

SECTION 13: FORCE MAJEURE

13.1 As used in this Agreement, "Force Majeure" or "an event of Force Majeure" means any cause beyond the reasonable control of the Seller or of PGE which, despite the exercise of due diligence, such Party is unable to prevent or overcome. By way of example, Force Majeure may include but is not limited to acts of God, fire, flood, storms, wars, hostilities, civil strife, strikes, and other labor disturbances, earthquakes, fires, lightning, epidemics, sabotage, restraint by court order or other delay or failure in the performance as a result of any action or inaction on behalf of a public authority which by the exercise of reasonable foresight such Party could not reasonably have been expected to avoid and by the exercise of due diligence, it shall be unable to overcome, subject, in each case, to the requirements of the first sentence of this paragraph. Force Majeure, however, specifically excludes the cost or availability of resources to operate the Facility, changes in market conditions that affect the price of energy or transmission, wind or water droughts, and obligations for the payment of money when due.

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13.2 If either Party is rendered wholly or in part unable to perform its obligation under this Agreement because of an event of Force Majeure, that Party shall be excused from whatever performance is affected by the event of Force Majeure to the extent and for the duration of the Force Majeure, after which such Party shall recommence performance of such obligation, provided that:

13.2.1 the non-performing Party, shall, promptly, but in any case within one (1) week after the occurrence of the Force Majeure, give the other Party written notice describing the particulars of the occurrence; and

13.2.2 the suspension of performance shall be of no greater scope and of no longer duration than is required by the Force Majeure; and

13.2.3 the non-performing Party uses its best efforts to remedy its inability to perform its obligations under this Agreement.

13.3 No obligations of either Party which arose before the Force Majeure causing the suspension of performance shall be excused as a result of the Force Majeure.

13.4 Neither Party shall be required to settle any strike, walkout, lockout or other labor dispute on terms which, in the sole judgment of the Party involved in the dispute, are contrary to the Party's best interests.

SECTION 14: SEVERAL OBLIGATIONS

Nothing contained in this Agreement shall ever be construed to create an association, trust, partnership or joint venture or to impose a trust or partnership duty, obligation or liability between the Parties. If Seller includes two or more parties, each such party shall be jointly and severally liable for Seller's obligations under this Agreement.

SECTION 15: CHOICE OF LAW

This Agreement shall be interpreted and enforced in accordance with the laws of the state of Oregon, excluding any choice of law rules which may direct the application of the laws of another jurisdiction.

SECTION 16: PARTIAL INVALIDITY AND PURPA REPEAL

It is not the intention of the Parties to violate any laws governing the subject matter of this Agreement. If any of the terms of the Agreement are finally held or determined to be invalid, illegal or void as being contrary to any applicable law or public policy, all other terms of the Agreement shall remain in effect. If any terms are finally held or determined to be invalid, illegal or void, the Parties shall enter into negotiations concerning the terms affected by such decision for the purpose of achieving conformity with requirements of any applicable law and the intent of the Parties to this Agreement.

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In the event the Public Utility Regulatory Policies Act (PURPA) is repealed, this Agreement shall not terminate prior to the Termination Date, unless such termination is mandated by state or federal law.

SECTION 17: WAIVER

Any waiver at any time by either Party of its rights with respect to a default under this Agreement or with respect to any other matters arising in connection with this Agreement must be in writing, and such waiver shall not be deemed a waiver with respect to any subsequent default or other matter.

SECTION 18: GOVERNMENTAL JURISDICTION AND AUTHORIZATIONS

This Agreement is subject to the jurisdiction of those governmental agencies having control over either Party or this Agreement. Seller shall at all times maintain in effect all local, state and federal licenses, permits and other approvals as then may be required by law for the construction, operation and maintenance of the Facility, and shall provide upon request copies of the same to PGE.

SECTION 19: SUCCESSORS AND ASSIGNS

This Agreement and all of the terms hereof shall be binding upon and inure to the benefit of the respective successors and assigns of the Parties. No assignment hereof by either Party shall become effective without the written consent of the other Party being first obtained and such consent shall not be unreasonably withheld. Notwithstanding the foregoing, either Party may assign this Agreement without the other Party's consent as part of (a) a sale of all or substantially all of the assigning Party's assets, or (b) a merger, consolidation or other reorganization of the assigning Party.

SECTION 20: ENTIRE AGREEMENT

20.1 This Agreement supersedes all prior agreements, proposals, representations, negotiations, discussions or letters, whether oral or in writing, regarding PGE's purchase of Net Output from the Facility. No modification of this Agreement shall be effective unless it is in writing and signed by both Parties.

20.2 By executing this Agreement, Seller releases PGE from any third party claims related to the Facility, known or unknown, which may have arisen prior to the Effective Date.

SECTION 21: NOTICES

All notices except as otherwise provided in this Agreement shall be in writing, shall be directed as follows and shall be considered delivered if delivered in person or when deposited in the U.S. Mail, postage prepaid by certified or registered mail and return receipt requested:

To Seller: _____

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with a copy to:

To PGE: Contracts Manager
 QF Contracts, 3WTCBR06
 PGE - 121 SW Salmon St.
 Portland, Oregon 97204

21.2 The Parties may change the person to whom such notices are addressed, or their addresses, by providing written notices thereof in accordance with this Section 21.

IN WITNESS WHEREOF, the Parties hereto have caused this Agreement to be executed in their respective names as of the Effective Date.

PGE

By: _____
Name: _____
Title: _____
Date: _____

(Name Seller)

By: _____
Name: _____
Title: _____
Date: _____

Standard Off System Integrated Variable Resource Power Purchase Agreement

EXHIBIT A
DESCRIPTION OF SELLER'S FACILITY

[Seller to Complete]

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EXHIBIT B
REQUIRED FACILITY DOCUMENTS

[Seller list all permits and authorizations required for this project]

Sellers Generation Interconnection Agreement

EXHIBIT C START-UP TESTING

[Seller identify appropriate tests]

Required factory testing includes such checks and tests necessary to determine that the equipment systems and subsystems have been properly manufactured and installed, function properly, and are in a condition to permit safe and efficient start-up of the Facility, which may include but are not limited to (as applicable):

1. Pressure tests of all steam system equipment;
2. Calibration of all pressure, level, flow, temperature and monitoring instruments;
3. Operating tests of all valves, operators, motor starters and motor;
4. Alarms, signals, and fail-safe or system shutdown control tests;
5. Insulation resistance and point-to-point continuity tests;
6. Bench tests of all protective devices;
7. Tests required by manufacturer of equipment; and
8. Complete pre-parallel checks with PGE.

Required start-up test are those checks and tests necessary to determine that all features and equipment, systems, and subsystems have been properly designed, manufactured, installed and adjusted, function properly, and are capable of operating simultaneously in such condition that the Facility is capable of continuous delivery into PGE's electrical system, which may include but are not limited to (as applicable):

1. Turbine/generator mechanical runs including shaft, vibration, and bearing temperature measurements;
2. Running tests to establish tolerances and inspections for final adjustment of bearings, shaft run-outs;
3. Brake tests;
4. Energization of transformers;
5. Synchronizing tests (manual and auto);
6. Stator windings dielectric test;
7. Armature and field windings resistance tests;
8. Load rejection tests in incremental stages from 5, 25, 50, 75 and 100 percent load;
9. Heat runs;
10. Tests required by manufacturer of equipment;
11. Excitation and voltage regulation operation tests;
12. Open circuit and short circuit; saturation tests;
13. Governor system steady state stability test;
14. Phase angle and magnitude of all PT and CT secondary voltages and currents to protective relays, indicating instruments and metering;
15. Auto stop/start sequence;
16. Level control system tests; and
17. Completion of all state and federal environmental testing requirements.

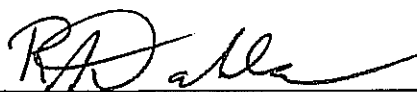
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EXHIBIT D
SCHEDULE
[Attach currently in-effect Schedule 201]

CERTIFICATE OF SERVICE

I hereby certify that I have this day caused **PORTLAND GENERAL ELECTRIC COMPANY'S DIRECT TESTIMONY AND EXHIBITS IN RENEWABLE AVOIDED COST** to be served by electronic mail to those parties whose email addresses appear on the attached service list from OPUC Docket No. UM 1396.

DATED at Portland, Oregon, this 16th day of March, 2012.



Randall J. Dahlgren
Portland General Electric Company
121 SW Salmon St., 1WTC0702
Portland, OR 97204
503-464-7021 Telephone
503-464-7651 Fax
randy.dahlgren@pgn.com

**SERVICE LIST
OPUC DOCKET UM 1396**

<p>Thomas Nelson nelson@thnelson.com (*Waived Paper Service)</p>	<p>Matt Krumenauer OREGON DEPARTMENT OF ENERGY matt.krumenauer@state.or.us (*Waived Paper Service)</p>
<p>Vijay A. Satyal OREGON DEPARTMENT OF ENERGY vijay.a.satyal@state.or.us (*Waived Paper Service)</p>	<p>Janet L. Prewitt OREGON DEPARTMENT OF ENERGY janet.prewitt@doj.state.or.us (*Waived Paper Service)</p>
<p>Will K. Carey ANNALA, CAREY, BAKER PC wcarey@hoodriverattorneys.com (*Waived Paper Service)</p>	<p>Bob Jenks CITIZENS UTILITY BOARD OF OREGON bob@oregoncub.org (*Waived Paper Service)</p>
<p>G. Catriona McCracken CITIZENS UTILITY BOARD OF OREGON catriona@oregoncub.org (*Waived Paper Service)</p>	<p>Paul R. Woodin COMMUNITY RENEWABLE ENERGY ASSOCIATION pwoodin@communityrenewables.org (*Waived Paper Service)</p>
<p>Irion A. Sanger DAVISON VAN CLEVE mail@dvclaw.com (*Waived Paper Service)</p>	<p>Elaine Prause ENERGY TRUST OF OREGON elaine.prause@energytrust.org (*Waived Paper Service)</p>
<p>John M Volkman ENERGY TRUST OF OREGON john.volkman@energytrust.org (*Waived Paper Service)</p>	<p>Christa Bearry IDAHO POWER COMPANY cbearry@idahopower.com (*Waived Paper Service)</p>
<p>Donovan E Walker IDAHO POWER COMPANY dwalker@idahopower.com (*Waived Paper Service)</p>	<p>Lisa F. Rackner MCDOWELL & RACKNER, PC lisa@mcd-law.com (*Waived Paper Service)</p>

<p>Daren Anderson NORTHWEST ENERGY SYSTEMS COMPANY LLC da@thenescogroup.com (*Waived Paper Service)</p>	<p>Mary Wiencke PACIFICCORP mary.wiencke@pacificcorp.com (*Waived Paper Service)</p>
<p>Oregon Dockets PACIFIC POWER oregondockets@papacificorp.com (*Waived Paper Service)</p>	<p>Ed Durrenberger OREGON PUBLIC UTILITY COMMISSION ed.durrenberger@state.or.us (*Waived Paper Service)</p>
<p>Stephanie Andrus DEPARTMENT OF JUSTICE stephanie.andrus@state.or.us (*Waived Paper Service)</p>	<p>Donald Schoenbeck REGULATORY & COGENERATION SERVICES, INC. dws@r-c-s-inc.com (*Waived Paper Service)</p>
<p>John Lowe RENEWABLE ENERGY COALITION jravenesanmarcos@yahoo.com (*Waived Paper Service)</p>	<p>Gregory M. Adams RICHARDSON & O'LEARY greg@richardsonandoleary.com (*Waived Paper Service)</p>
<p>Peter J. Richardson RICHARDSON & O'LEARY peter@richardsonandoleary.com (*Waived Paper Service)</p>	<p>David Lokting STOLL BERNE dlokting@stollberne.com (*Waived Paper Service)</p>

