



**Portland General Electric Company**  
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April 13, 2009

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Oregon Public Utility Commission  
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**Re: UM 1396 – INVESTIGATION INTO DETERMINATION OF RESOURCE  
SUFFICIENCY PURSUANT TO ORDER NO. 06-538**

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Enclosed for filing in UM 1396 are an original and five copies of:

Direct Testimony of Portland General Electric Company  
▪ **PGE Exhibit 100-103 Kuns/Drennan**

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Thank you in advance for your assistance.

Sincerely,

A handwritten signature in black ink, appearing to read "Doug Kuns".

Doug Kuns  
Manager, Pricing & Tariffs

DK:smc  
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cc: Service List-UM 1396

## CERTIFICATE OF SERVICE

I hereby certify that I have this day caused Portland General Electric Direct Testimony in docket UM 1396, to be served by electronic mail to those parties whose email addresses appear on the attached service list, and by First Class US Mail, postage prepaid and properly addressed, to those parties on the attached service list who have not waived paper service.

Dated at Portland, Oregon, this 13th day of April 2009.

A handwritten signature in black ink, appearing to read "Doug Kuns", written over a horizontal line.

Doug Kuns  
Manager, Pricing & Tariffs

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**Table of Contents**

**I. Introduction.....1**

**II. Resource Sufficiency Issues .....5**

**III. Qualifications .....17**

**List of Exhibits .....18**

**I. Introduction**

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

2 A. My name is Doug Kuns. I am employed by PGE as the Manager, Pricing & Tariffs.

3 My name is Ted Drennan. I am employed by PGE as a Senior Resource Analyst,  
4 Integrated Resource Planning.

5 **Q. What is the purpose of this testimony?**

6 A. Our testimony addresses the determination of the resource sufficiency period for avoided  
7 cost calculations and the issues identified in the UM 1396 Issues List. The issues list is  
8 shown on Exhibit 101. In this testimony, we provide a framework for a resource sufficiency  
9 period in avoided costs and a practical resource sufficiency period determination. The  
10 avoided costs are used as the basis for setting the prices at which PGE will purchase energy  
11 delivered by Qualifying Facilities (QFs).

12 **Q. Did PGE previously file testimony pertaining to resource sufficiency in another**  
13 **docket?**

14 A. Yes. With respect to the resource sufficiency and deficiency determination for computing  
15 avoided cost prices, PGE filed in UM 1129, Phase 1, rebuttal testimony (UM  
16 1129/PGE/300, Kuns-Drennan/15,16) examining when the resource sufficiency period  
17 should end and the deficiency period begin. An excerpt of this testimony is included as  
18 Exhibit 102.

19 In PGE's UM 1129 testimony cited above, the central consideration for avoided costs is  
20 developing a reasonable estimate of avoidable costs as a result of QF power supply being  
21 added to the PGE system. Avoided cost pricing is a key to achieving a balance between the  
22 costs to utility customers associated with purchases of power from QFs and the incentives to

1 QFs to develop projects that are economic sources of power. For avoided costs pricing, the  
2 resource sufficiency and deficiency determination differentiates the year-by-year avoided  
3 costs into the two resource-need based timeframes that the Commission has directed utilities  
4 to use for avoided costs. The testimony also supports looking to the utility's Integrated  
5 Resource Plan (IRP) as the appropriate analysis of the utility's loads, resources and the  
6 sufficiency period.

7 **Q. Please summarize your proposed resource sufficiency period determination conclusion.**

8 A. Consistent with the Commission-directed methodology to set avoided cost-based QF power  
9 purchase prices, PGE believes a resource sufficiency period is necessary to present an  
10 appropriate year-by-year projection of avoided costs. The requirement for a resource  
11 sufficiency period, the basis to determine the period and options for the determination of the  
12 resource sufficiency period are addressed in our following testimony. In summary:

13 1. A resource sufficiency period is necessary. The Commission has maintained that  
14 utility avoided costs should reflect a utility's resource position in order to more accurately  
15 present avoided cost price signals to potential QFs. Order No. 05-584, page 26, the utility's  
16 avoidable costs may vary depending on whether the avoided costs appropriately reflect  
17 short-term supply changes or reflect the longer-term changes in resources resulting from QF  
18 supply.

19 2. The Commission has, through the development of the avoided cost methodology  
20 approved in UM 1129, established a process designed to encourage QF development  
21 through a number of practical avoided cost-based pricing and contracting simplifications.  
22 The determination of a resource sufficiency period for avoided costs should also reflect a  
23 practical approach to reflecting the avoidable costs. For the resource sufficiency period, a

1 market-based avoided cost reflects the power cost impact of QF deliveries in the near-term.  
2 The combined cycle combustion turbine (CCCT) is the basis for longer-term (in the resource  
3 “deficiency” period) avoided costs. A CCCT is both an appropriate and practical reflection  
4 of the need for additional reliable, economic, baseload power supply. PGE continues to  
5 support this approach.

6 Resource sufficiency determinations have the potential to become an overly complex  
7 and controversial process; however, much of the complexity revolves around loads,  
8 resources and load/resource balances. These technical analyses are addressed very  
9 thoroughly in PGE’s IRP. PGE supports the IRP as the basis for determining a resource  
10 sufficiency period. The IRP is updated regularly which assures that the basis for each  
11 resource sufficiency period is also updated. Independent resource planning for QF avoided  
12 cost purposes only is necessary and would be burdensome.

13 3. An appropriate resource sufficiency period determination will balance interests of  
14 both QF and utility customers. QFs will receive appropriate price signals allowing for  
15 development to occur at the appropriate times that is economic relative to the utility’s other  
16 supply options. The Commission has through the UM 1129 docket developed a  
17 straightforward approach for utility pricing and contracting for QF power. Several  
18 Commission decisions in UM 1129 are grounded in the existence of a resource sufficiency  
19 period. For example, an issue regarding QF construction delays was resolved by the  
20 Commission in Order No. 05-584, page 47, by considering the utility’s resource position. A  
21 resource sufficiency period recognizes that risk to the utility if a QF does not deliver  
22 expected amounts of energy is less when it is resource sufficient. QF standard contract  
23 terms would need to be revised if no resource sufficiency period is applicable because the

1 availability of QF power is more critical because the utility is in the resource deficiency  
2 period.

3 4. Avoided cost prices during a resource sufficiency period will be market-based  
4 prices; however during the resource sufficiency period avoided costs could be higher or  
5 lower than an equivalent CCCT price. The resource sufficiency period determination needs  
6 to be based on the IRP as the reference point of when new long-term baseload resources are  
7 needed. While the IRP may or may not call explicitly to use a CCCT as the avoided long-  
8 term resource (as required by the avoided cost process), the timing of resource additions in  
9 the IRP provides the date that the resource sufficiency period will end. The typical resource  
10 sufficiency is expected to be the 48 to 54 month typical construction cycle of a CCCT. This  
11 is a reasonable proxy for a resource sufficiency period.

12 **Q. How is the remainder of your testimony organized?**

13 A. In the following section we address each of the UM 1396 Issues List items.



## II. Resource Sufficiency Period Determination Issues

1 **Q. Please address Issue 1:**

2 **How are periods defined?**

- 3 • **If a resource sufficiency period is established, how often and for what reasons**  
4 **should the sufficiency determination be revisited?**

5 A. For PGE, the resource sufficiency and deficiency periods are best defined by reference to the  
6 Company's IRP. The Company considers the time period between the effective date of an  
7 updated avoided cost filing and the date that the IRP indicates baseload resource (the CCCT)  
8 additions are necessary as the resource sufficiency period. The resource deficiency period is  
9 the period that starts on the date that the new resource additions are assumed to be in-  
10 service. Notwithstanding this definition, we believe that some degree of flexibility is  
11 necessary in developing avoided costs that (1) yield avoided cost prices that reflect both lead  
12 times for construction or acquisition of resources and the need for new supply and (2) are  
13 practical to apply while reasonably reflecting the power supply costs that are avoidable.

14 The resource sufficiency period is revisited every two years in conjunction with PGE's  
15 Avoided Cost filing. PGE believes that the standard two year update cycle allows QF's  
16 certainty of pricing for a period of time. More frequent updates to the resource sufficiency  
17 period could trigger changes to the avoided costs that would serve to add confusion to the  
18 avoided cost and QF development process.

19 **Q. Please address Issue 2: What is the definition of resource sufficiency/deficiency for**  
20 **avoided cost purposes?**

- 21 • **In what ways does resource sufficiency and deficiency differ from load/resource**  
22 **balance determinations?**

1 A. Our response to Issue 1 provides the working definition for resource sufficiency: the time  
2 period between the effective date of an updated avoided cost filing and the date that the IRP  
3 indicates baseload resource additions are necessary. Similarly, the resource deficiency  
4 period starts at the date that the resource sufficiency period ends.

5 For PGE, resource sufficiency means that the potential avoidable costs for the  
6 sufficiency period are based on avoiding market power purchases. In PGE's current avoided  
7 costs, (as set out in PGE's Schedule 201) the Company is resource-sufficient through 2011.  
8 In 2012, the Company's avoided costs prices are based on the CCCT costs. This approach is  
9 consistent with the Commission's direction regarding resource position:

10 "The calculation of avoided costs when a utility is in a resource deficient  
11 position should reflect longer term resource decisions that are subject to  
12 deferral or avoidance due to QF power purchases." Order No. 05-584, page  
13 26.

14 Resource sufficiency period determination is not a question of whether the utility is  
15 undertaking generation plant construction or even whether the utility is purchasing  
16 wholesale market power to supply load. The resource sufficiency period must reflect  
17 avoidable costs. The IRP's assessment of when new base load resource supply should be  
18 added as an economic supply option is the most reliable indicator for the sufficiency period.  
19 This assures consistency with Commission's statement:

20 "This Commission's goal is to encourage the economically efficient  
21 development of QFs, while protecting ratepayers by ensuring that utilities  
22 incur costs no greater than they would have incurred in lieu of purchasing  
23 QF power (avoided costs)." Order No. 07-360, page 1.

1 Today and for the foreseeable future, PGE can expect to purchase significant amounts  
2 of energy to economically meet load. Further, PGE is also engaged in constructing  
3 additional resources such as wind turbines. Neither the power purchases nor the new  
4 generating facility construction means that today or for the next several years that the  
5 Company is or will be resource-deficient relative to serving load.

6 PGE's Annual Power Cost Update filing illustrates this fact. The annual power cost  
7 update includes projected costs for power purchases to serve load as well the variable costs  
8 of generating facilities for the next calendar year; the filing does not include capital costs for  
9 new resources. This year, on April 1, 2009, PGE filed the initial power costs update to serve  
10 forecasted loads during 2010. Clearly the power cost update shows how the Company will  
11 meet the forecast load requirements in 2010. If a new QF enters into a standard QF contract  
12 with PGE today and begins to deliver power on January 1, 2010, the avoided costs in 2010  
13 should reflect the market prices, similar to the market prices assumptions used for our  
14 annual power cost update. New CCCT costs are not avoided or avoidable in the 2010 time-  
15 frame. Consistent with avoided market power purchases, PGE's current avoided costs (as  
16 set in Schedule 201) reflect CCCT costs beginning in 2012.

17 By extension, avoidable costs for subsequent years are also market-based until the IRP  
18 indicates baseload additions are economic. The resource sufficiency period extends until the  
19 CCCT would otherwise be placed in service.

20 Issue 2 further asks: In what ways does resource sufficiency and deficiency differ from  
21 load/resource balance determinations? Resource sufficiency and deficiency are avoided  
22 cost-related terms that describe the impact QF power will have on the utility's power supply  
23 costs. The load/resource balance determined in the IRP is a comparison of market purchases

1 generation resource output (energy and/or capacity) and forecast loads to be served by the  
2 utility. Determination of PGE's load/resource balance requires evaluation of a variety of  
3 forecasting assumptions including normal or critical hydro, and normal or extreme weather  
4 in order to produce a meaningful view of a utility's resource position. The assumptions and  
5 analysis for a load/resource balance assessment are thoroughly addressed and vetted in the  
6 IRP.

7 PGE's 2007 filed IRP set out 2012 as the target date for the acquisition of new energy  
8 and capacity resources. The date reflects the time that additional longer-term resources are  
9 economically added to the system and includes the effects of energy efficiency and other  
10 demand-side contributions to meeting loads. Exhibit 103 is an excerpt from the 2007 filed  
11 IRP showing the 2012 need for resource additions in the context of a summary of the IRP  
12 resource needs analysis.

13 **Q. Please address Issue 3: What loads were used to compute the load forecast?**

- 14 • **Are load forecasts up to date?**  
15 • **Are forecasts different that are used for the utilities Integrated Resource Plan**  
16 **(IRP), if so, how?**  
17 • **Is the load forecasting methodology currently used by utilities accurately**  
18 **forecasting loads?**

19 A. PGE's long-term load forecast is developed within the IRP and reflects customers load  
20 requirements. For avoided cost purposes, the IRP load forecast is used to determine the  
21 resource sufficiency period. The IRP is subject to public review by interested parties as well  
22 as the Commission. In broad terms, the load forecast estimates the utility's retail loads over

1 the time frame needed for the particular analysis. For example, for IRP purposes, the load  
2 forecast estimates retail loads (that PGE will serve) for a minimum of 20 years.

3 Forecasts are normally updated throughout the IRP process in order to provide and  
4 incorporate any impacts of load changes on the resource plan.

5 With regard to the issue: “Is the load forecasting methodology currently used by utilities  
6 accurately forecasting loads,” PGE believes the forecasts are reasonable (and as noted are  
7 subject to public review). In Docket UM 1056 pertaining to the guidelines for IRP’s, the  
8 Commission requires that utilities consider uncertainty and risk in the IRP planning process.  
9 This suggests that the IRP process goes beyond a simple test of “accuracy” of the load  
10 forecast to consider additional sources of risk and uncertainty in its planning (see Order  
11 07-002, Guideline 1b.) In the past, the Commission has also looked beyond the utility to  
12 other forecasts e.g., the NWPPC forecast, to test the “reasonableness” of particular load  
13 forecasts.

14 **Q. Please address Issue 4: Is it appropriate to determine resource sufficiency for avoided**  
15 **cost filings in a different manner than is used to determine resource needs for the IRP**  
16 **planning process?**

- 17 • **How is the IRP load and resource determination (forecast) relevant to the**  
18 **avoided cost sufficiency determination?**

19 A. Fundamentally, the utility’s IRP is the planning tool used by PGE to determine resource  
20 needs in the future and is the basis for a resource sufficiency period determination. The  
21 IRP’s findings are detailed enough to allow useful information about resource needs timing  
22 to be applied in the avoided cost analysis. We recognize that incorporating the IRP findings  
23 into avoided cost resource sufficiency determination process may require modest

1 adjustments; nevertheless, the IRP's resource needs finding is the basis for establishing a  
2 sufficiency period. Therefore, the resource sufficiency period should not be different than  
3 what is determined through the IRP process.

4 We believe that the issue of resource sufficiency period determination as discussed here  
5 illustrates that there is potential for complexity and controversy to emerge from an avoided  
6 cost resource planning process that is not grounded in IRP results. In UM 1129 the  
7 Commission addressed many issues associated with avoided cost-based pricing for QF  
8 power with a practical and balanced resolution designed to encourage QFs to develop  
9 economic projects.

10 The Commission's practical approach to setting out avoided costs suggests use of a  
11 simplified and balanced requirement to use a CCCT as the avoidable long-term resource.  
12 For example, the Commission required simplified processes for a QF to either directly enter  
13 into a standard QF contracts or negotiate QF contracts. QFs with less than 10 MW of  
14 capacity have a variety of standardized pricing options available. QFs may also enter into  
15 power sale contracts with the utility for any term up to 20 years. The range of options and  
16 limited requirements for delivery obligations demonstrate the Commission's objective to  
17 moderate potentially complex and costly analysis with solutions that reasonably establish  
18 avoided costs. The avoided cost process should not become unnecessarily complicated  
19 solely to address the resource sufficiency period determination.

20 In the interest of simplifying the resource sufficiency determination, the Commission  
21 should consider directing utilities to set the resource sufficiency period at the length of time  
22 typically needed to plan and construct the avoided CCCT baseload resource. A presumptive  
23 resources sufficiency period of 48 to 54 month based on a CCCT construction cycle is a

1 reasonable basis for setting the start of a resource deficiency period. Although unlikely  
2 given planning and construction times for new resources, if IRP indicated that the addition  
3 of long-term or baseload resources will deviate by more than a year from the presumed 48 to  
4 54 month sufficiency, avoided costs assumptions about resource sufficiency and deficiency  
5 can be adjusted. Further, this assures that avoided costs consistently reflect the  
6 determination of avoided costs reflecting avoided costs both in the near-term and long-term.  
7 A potential QF may enter into a power sale contract based on avoided costs filings in effect  
8 at the time the QF enters into the contract. This provides the appropriate price signals to  
9 QFs for timing project development.

10 **Q. Please address Issue 5: Must a utility be both capacity and energy deficient to be in a**  
11 **position of resource deficiency?**

- 12 • **Can a utility that is chronically short on capacity and continuously building**  
13 **capacity be considered resource sufficient?**

14 A. The Commission has directed that utilities use a CCCT as the avoidable resource for the  
15 resource deficiency period. For avoided cost purposes, the deficiency period timing is  
16 properly related to the point in time when the addition of a baseload resource to the utility  
17 resource portfolio is identified in the IRP.

18 The Commission also addressed the reality that utility market power purchases are  
19 made over a period time as a part of the utility's power supply acquisition process. The  
20 Commission has stated:

21 "Although a utility may acquire market resources as demand gradually builds,  
22 at some point the increase in demand warrants the utility making plans to  
23 build or acquire long-term generation resources. At that point, calculation of

1           avoided costs should reflect the potential deferral or avoidance of such  
2           generation resources.” Order No. 05-584, page 27

3           Clearly, the Commission established that avoided costs need to differentiate between  
4           resource sufficiency and deficiency periods and that power purchases were not evidence of  
5           resource deficiency. For the Commission to establish otherwise, it would have to assume  
6           that resource adequacy would require utilities to always be in a resource surplus.

7           Alternative approaches to avoided costs such as a capacity deficiency standard as the  
8           measure of resource sufficiency/deficiency would not reflect avoidable costs and would be  
9           equivalent to a utility being resource long all the time to be considered resource sufficient.  
10          Utilities typically would not build resources to this standard; the IRP process develops the  
11          comprehensive plan from which a sufficiency period can be determined.

12 **Q. Please address Issue 6: How should resource energy and capacities be determined?**

- 13           • **How should a utility forecast QF capacity, and how does QF capacity factor in to**  
14           **the determination of the utilities resource position for the purposes of avoided**  
15           **cost calculations?**

- 16           • **Should capacity forecasts impact the sufficiency/deficiency calculations?**

17 A. Resource energy and capacity should be determined in the context of PGE’s IRP filing. See  
18 response to question 2b.

19           PGE does not explicitly forecast QF capacity in the IRP. Once a QF is online, its  
20           impact on PGE’s resource position will be reflected in the energy supply portfolio as  
21           appropriate for subsequent IRP’s. For nonfirm resources, such as wind or solar, PGE has  
22           proposed using 5% of nameplate capacity as capacity value. The NWPCC uses a similar  
23           value.



1 The QF capacity factor is not relevant for avoided costs purposes since the utility is  
2 required to pay firm energy prices for energy delivered (net output) by the QF under a  
3 standard QF contract.

4 **Q. Please address Issue 7: What resources go into the determination of**  
5 **sufficiency/deficiency?**

- 6 • **Is it appropriate to include short-term firm purchases in base load capacity**  
7 **when calculating resource sufficiency?**
- 8 • **Should only existing resources be included in determining the resource position?**
- 9 • **Should the choice of the type of avoided cost resource affect the determination of**  
10 **resource sufficiency?**
- 11 • **Is resource sufficiency and deficiency applicable only to firm supply resources?**
- 12 • **How does the Oregon Renewable Portfolio Standard (RPS) factor in to the**  
13 **determination of resource sufficiency?**

14 A. The portfolio of generating resources included in the utility's IRP are the appropriate  
15 resources for serving the IRP forecast loads (Issue 3 is the equivalent question from the load  
16 forecast side).

17 From an avoided cost-based pricing perspective, short-term term purchases are clearly a  
18 part of the available resource supply portfolio. Similarly, existing resources and planned  
19 and under-construction generation additions are considered in the IRP. The IRP considers  
20 both existing resources and forecasted resources in determining its resource position.

21 Issue 7 also asks, "Should the choice of the type of avoided cost resource affect the  
22 determination of resource sufficiency?" We note that the type of avoided resource does not  
23 affect the determination of a resource sufficiency period determination. The resource

1 sufficiency period is determined by forecasted load growth as a part of the IRP. Further, the  
2 Commission has already determined that a CCCT is the avoided long-term resource.

3 Similarly, the issue, “Is resource sufficiency and deficiency applicable only to firm  
4 supply resources,” should be addressed in the IRP findings. The IRP process requires a  
5 thorough consideration of resource needs and supply options (including firm and non-firm  
6 options) along with the economic impacts. The Commission requires that the IRP process  
7 consider uncertainty and risks in the planning process to better identify the economical  
8 resource portfolios.

9 The Oregon Renewable Portfolio Standard (RPS) requirements are a critical factor in  
10 the IRP process. The RPS standards will help guide future resource selections. We do not  
11 know if or how the RPS would affect the resource sufficiency period determination. In the  
12 future, however, for the next few years, we believe that Commissions choice of a CCCT as  
13 representative of avoided long-term resources is appropriate.

14 **Q. Please address Issue 8: How do multiple jurisdictional utilities calculate resource**  
15 **sufficiency?**

16 A. This question does not apply to PGE.

17 **Q. Please address ICNU’s addition to the issue list, Issue 1: Should the utilities’ avoided**  
18 **cost filings be differentiated based on their resource position?**

19 A. Yes. A utility’s avoided costs must reflect the resource position as determined from the IRP.  
20 The Commission is clear that the utility resource position affects the determination of the  
21 resource sufficiency period. Resource sufficiency or deficiency periods established by the  
22 IRP carry forward to a utility’s avoided cost filing. We note that avoided cost filings by  
23 different utilities may be different with respect to the resource sufficiency and deficiency

1 periods, but practically, the differences in resource sufficiency periods may be small due to  
2 similar construction times for a CCCT.

3 **Q. Please address ICNU's Issue 2: Do the utilities avoided costs methodologies accurately**  
4 **forecast their resources position?**

5 A. As previously discussed, resource sufficiency or deficiency periods established from the IRP  
6 provide a well-documented basis to assure that a utility's avoided costs are consistent with  
7 the utility's resource position. We do not believe that a parallel or a non-IRP load planning  
8 process for determining avoided costs is necessary or advisable.

9 **Q. Please address ICNU's Issue 3: Are the utilities acquiring resources greater than**  
10 **50MW while they are considered resource sufficient?**

11 A. Yes. Utilities may well be actively acquiring new resources in order to meet the  
12 requirements of Oregon's Renewable Portfolio Standard and resource needs. These  
13 resources, in aggregate, may well exceed 50MW nameplate capacity. The central  
14 determination is what costs are avoidable as a result of QF power deliveries. The avoided  
15 cost methodology consistent with the Commission's overall findings and directives in UM  
16 1129 support a resource sufficiency period.

17 **Q. In summary you believe most of the issues related to resource sufficiency/deficiency**  
18 **can be resolved through the IRP process. Is this correct?**

19 A. Yes. The IRP process is a thorough, well-vetted process that all stakeholders may  
20 participate in. This process examines the utility loads, resources, and forecasts. This is  
21 where the utility makes long-term supply decisions. As such it is the proper vehicle for  
22 determining a utility's resource sufficiency period.

1 **Q. If the Commission were to simplify the resource sufficiency determination should it be**  
2 **consistent with the avoided resource?**

3 A. Yes. The Commission has chosen a CCCT as the avoided resource, any simplification of  
4 the sufficiency determination should reflect the time to permit and build a CCCT. We  
5 believe an appropriate proxy for this period is 48 to 54 months.

### III. Qualifications

1 **Q. Ms. Kuns, please describe your qualifications.**

2 A. I graduated from Linfield College in 1973 with a Bachelor of Arts in Economics. I received  
3 a Master in Business Administration degree from Claremont Graduate School.

4 In 1979, I joined PGE in the Rates and Regulatory Affairs Department and have held  
5 various positions in the regulatory, marketing, and planning areas. My current position is  
6 Manager of Pricing and Tariffs.

7 **Q. Mr. Drennan, please describe your qualifications.**

8 A. I received a Bachelor of Science in Economics from the University of Wyoming in August  
9 1995. I also completed the coursework for a Master of Science in Regulatory Economics.  
10 From 1999 to 2001, I worked for the Iowa Department of Justice – Office of Consumer  
11 Advocate, as a Utility Analyst. Between 2001 and 2002 I worked for two energy consulting  
12 firms: Energy Resource Consulting, based in Denver, as a Supervising Economist, and EES  
13 Consulting, based in Seattle, as a Senior Analyst. In 2002, I joined PGE in the Rates and  
14 Regulatory Department. I have held various positions in the planning, marketing, and  
15 regulatory areas. My current position is a Senior Resource Analyst in the Integrated  
16 Resource Planning department.

17 **Q. Does this conclude your testimony?**

18 A. Yes.

**List of Exhibits**

<b><u>PGE Exhibit</u></b>	<b><u>Description</u></b>
101	UM 1396 Issues List, March 3, 2009
102	Excerpt, PGE Testimony, UM 1129 – Phase I
103	Excerpt, 2007 Integrated Resource Plan

ISSUED: March 3, 2009

**BEFORE THE PUBLIC UTILITY COMMISSION  
OF OREGON**

UM 1396

In the Matter of	)	
	)	
PUBLIC UTILITY COMMISSION OF	)	RULING
OREGON	)	
	)	
Investigation into Determination of	)	
Resource Sufficiency, pursuant to	)	
Order No. 06-538.	)	

**DISPOSITION: ISSUES LIST ADOPTED**

A prehearing conference was held in this docket on November 19, 2008. The Administrative Law Judge ordered the parties to submit joint or separate Issues Lists. Staff of the Public Utility Commission of Oregon (Staff) submitted their Issues List on February 13, 2009. Portland General Electric Company (PGE), Idaho Power Company, and PacifiCorp, dba Pacific Power, each filed letters in support of Staff's proposed Issues List. No filings were received from the Oregon Department of Energy or the Community Renewable Energy Association (CREA).

On February 13, 2009, the Industrial Customers of Northwest Utilities (ICNU) also filed a letter in support of Staff's Issues List, but included an additional three issues it states should be addressed in this proceeding.

The issues proposed by Staff are as follows:

**UM 1396 Issues List**

1. How are periods defined?
  - If a resource sufficiency period is established, how often and for what reasons should the sufficiency determination be revisited?
  
2. What is the definition of resource sufficiency/ deficiency for avoided costs purposes?
  - In what ways does resource sufficiency and deficiency differ from load/ resource balance determinations?

3. What loads were used to compute the load forecast?
  - Are the load forecasts up to date?
  - Are forecasts different that are used for the utility's Integrated Resource Plan (IRP), if so, how?
  - Is the load forecasting methodology currently used by the utilities accurately forecasting loads?
4. Is it appropriate to determine resource sufficiency for avoided cost filings in a different manner than is used to determine resource needs for the IRP planning process?
  - How is the IRP load and resource determination (forecast) relevant to the avoided cost sufficiency determination?
5. Must a utility be both capacity and energy deficient to be in a position of resource deficiency?
  - Can a utility that is chronically short on capacity and continuously building capacity be considered sufficient?
6. How should resource energy and capacities be determined?
  - How should a utility forecast QF capacity, and how does QF capacity factor in to the determination of the utilities' resource position or the purposes of avoided cost calculations?
  - Should capacity forecasts impact the sufficiency/deficiency periods?
7. What resources go into the termination of sufficiency/deficiency?
  - Is it appropriate to include short-term firm purchases in base load capacity when calculating resource sufficiency?
  - Should only existing resources be included in determining the resource position?
  - Should the choice of the type of avoided costs resource affect the determination of resource sufficiency?
  - Is resource sufficiency and deficiency applicable only to "firm" supply resources?
  - How does the Oregon Renewable Portfolio Standard (RPS) factor in to the determination of resource sufficiency?
8. How do multiple jurisdictional utilities calculate resource sufficiency?

The additional issues proposed by ICNU are as follows:

1. Should the utilities' avoided cost filings be differentiated based on their resource position?



2. Do the utilities' avoided costs methodologies accurately forecast their resources position?
3. Are the utilities acquiring resources greater than 50 MWs while they are considered resource sufficient?

Given the consensus regarding Staff's proposed issues, Staff's issue list is adopted as set forth above. The parties are instructed to formulate their testimony to address each of the issues as appropriate to their interest in the case.

Dated at Salem, Oregon, this 3rd day of March, 2009.

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Patrick Power  
Administrative Law Judge

### III. Avoided Costs

#### A. Resource Sufficiency Period

1 **Q. Should the Commission require that PGE update its resource sufficiency analysis as**  
2 **proposed by Staff?**

3 A. We do not believe an update to a load-resource balance is necessary for this avoided cost  
4 study. Our avoided cost study is consistent with the Commission's order and resulted in a  
5 resource sufficiency period ending in less than 3 years (2009 is the "deficiency" year for the  
6 avoided cost study). We presented an updated load-resource balance that supported the  
7 2009 date for using the proxy plant in computing avoided costs.

8 A simple review of the timing for our resource sufficiency period supports the 2009  
9 date for the end of the resource sufficiency period from an economic avoided cost  
10 perspective. From an avoidable cost standpoint, costs of a CCCT are not avoidable in the  
11 near-term. The CCCT cannot be planned, constructed or used to avoid costs in the near  
12 term. Other economic supply options are available and thus avoidable. The avoidable costs  
13 (that is costs saved as a result of supply provided by the QF) in the sufficiency period is the  
14 cost of market-based purchases. Beginning in 2009 our avoided costs are based on the costs  
15 of a CCCT and reflect the assumption that there is an avoidable long-term resource addition  
16 (the fixed and variable costs of a CCCT) in 2009. Notwithstanding the 2009 "deficiency"  
17 date PGE does not currently have an avoidable new plant addition at that date. The 2009  
18 date to start using the CCCT costs to set avoided costs is a balanced way to reflect the  
19 economic supply options that are avoidable in the near term (market Purchases) and  
20 avoidable costs based on longer-term resource commitments (the costs of a CCCT). Both

UM 1129 / PGE /  
DRENNAN / KUNS / 16

1 QFs and utility customers should find our resource sufficiency period to be reasonable  
2 economic representation of avoidable costs.

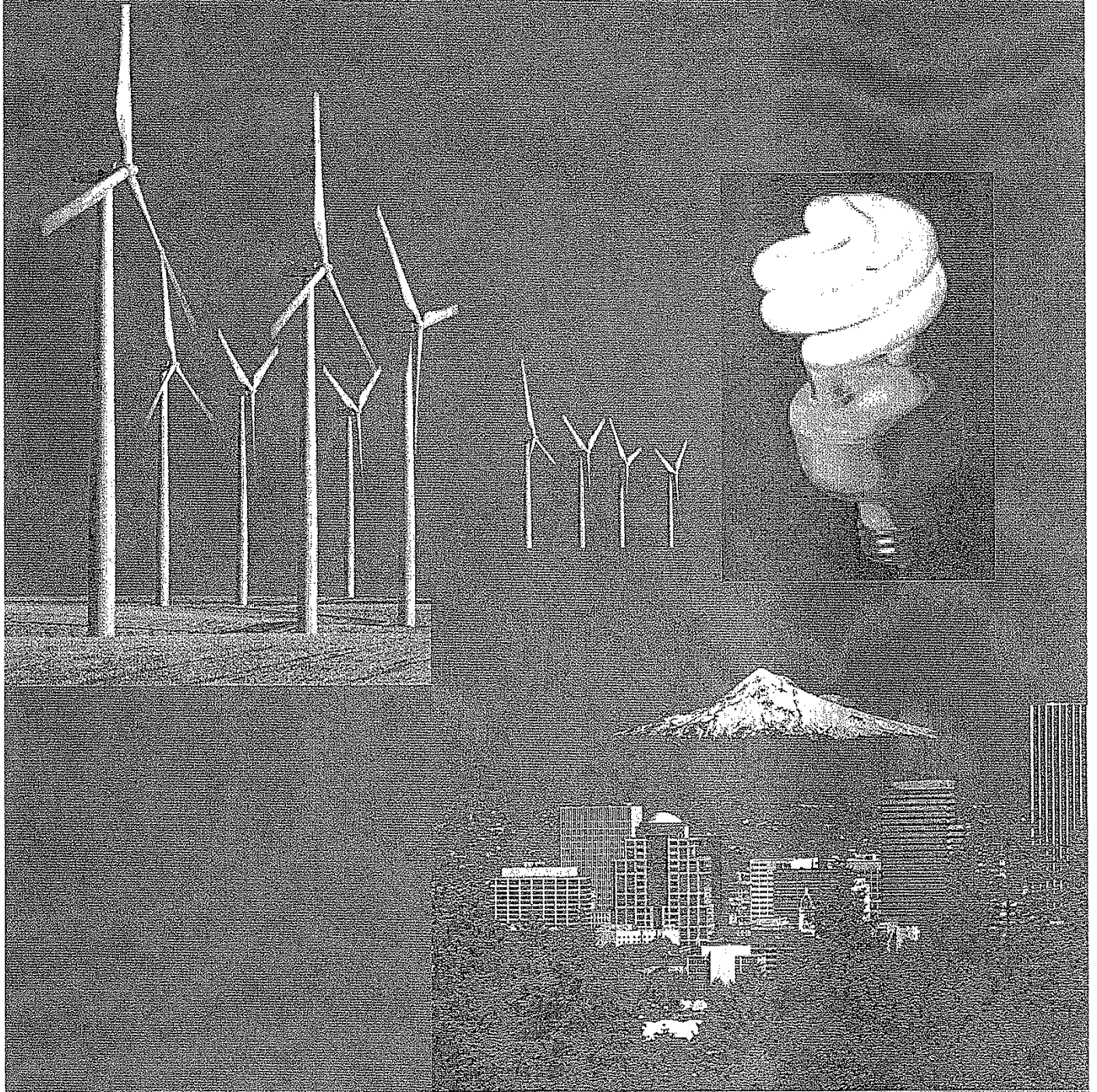
3 We believe that our resource sufficiency period used in our compliance filing is  
4 reasonable and does not require updates.

5 **Q. How do you propose to determine a resource sufficiency period for future avoided cost**  
6 **filings?**

7 A. We recommend that the load-resource balance be based on the utility's applicable integrated  
8 resource plan with any necessary updates to reflect material changes in loads or resources.  
9 The Commission should continue to require that avoided costs reflect power supply costs  
10 that are avoidable because of QF projects. This will yield QF pricing that mirrors the  
11 avoidable costs of the utility at the time a QF contract is entered into.

12 Staff proposes a number of adjustments to PGE's load-resource projection to determine  
13 the resource sufficiency period. (Staff/1200, Galbraith/9 through 12) We believe that  
14 Staff's proposal diverts attention from the central purpose of an avoided cost determination,  
15 which is to determine avoided costs. Avoided costs should reflect the economic supply  
16 options representative of the utility's supply position and planned supply actions. For PGE  
17 our supply portfolio includes future additions such as Port Westward (which is not  
18 avoidable) and power market purchases to meet loads economically. A single strict  
19 application of a load-resource formulation may well miss the economic resource options.  
20 This would be harmful to customers.

# 2007 Integrated Resource Plan



**Portland General Electric**

While Figure ES-3 displays some of our core analysis and conclusions, Chapters 10 through 12 of the IRP contain significantly more detail on our modeling methods and results. They also discuss other benefits of supply diversity, such as shaft and fuel diversity and hedging against other types of risk. The totality of our analysis confirms that of all the portfolios that we assessed, the Diverse + Contracts portfolio performed consistently well across both scenario and stochastic analyses. We recommend this portfolio for our IRP action plan because it provides technology and fuel diversification to our existing portfolio, while hedging against carbon risk by avoiding more long-term concentration of fossil-fueled, baseload generation. We also came to similar conclusions as the NWPCC in its 5th Power Plan in that our preferred portfolio focuses heavily on energy efficiency and renewable resources to meet future load growth.

### Proposed Energy Action Plan

Our analysis suggests that there is no obvious single generation solution to meet our future energy needs. As a result, we must make informed choices that involve trade-offs between expected costs and various uncertain risks. Our analysis confirms that diversification of our portfolio offers the best alternative for an uncertain future environment, while underscoring that the results of an RFP will better inform exact actions to be taken. Table ES-1 details our proposed Energy Action Plan.

**Table ES-1: 2012 Resource Need and Potential Energy Supply Actions**

	Energy		Capacity
	MW@ Normal Hydro	% of Target	MW@ Normal Hydro
PGE system load at normal weather (net of ETO EE)	2,630		
Remove assumed 5-yr. opt-out load	(30)		
Existing PGE & contract resources in 2012	(2,150)		
Add back implied ETO EE savings 2008-2012	85		
Recognize Beaver as an intermediate resource	<u>368</u>		
<b>PGE 2012 Resource Target<sup>1</sup></b>	<b>903</b>		
<u>Expected &amp; Potential Resource Actions:</u>			
ETO EE savings target 2007-2012	85	9%	111
Additional cost-effective EE 2008-2012	45	5%	59
Plant efficiency upgrades	7	1%	13
Partial contracts renewals (hydro)	70	8%	170
Biglow Canyon 2 & 3 (300 MW nameplate, by 2010)	105	12%	45
PPAs of up to 5-year terms for load uncertainty	180	20%	180
PPAs of 6- to 10-year terms for bridging	192	21%	192
Required added renewables to meet 2015 RPS target	<u>218</u>	<u>24%</u>	<u>133</u>
<b>Total of Recommended Actions</b>	<b>903</b>	<b>100%</b>	<b>904</b>

<sup>1</sup> The resource target does not include ETO energy efficiency, which we recognize as an action item. After ETO EE is accounted for, the 2012 energy resource gap will be 818 MWa.

Our energy action plan further diversifies PGE's existing portfolio by:

- Pursuing a significant new initiative to acquire all technically achievable and cost-effective EE beyond what the ETO has currently targeted through use of public purpose charge funds.
- Focusing on new renewable resources. Our Energy Action Plan slightly exceeds the Oregon RPS target of meeting 15% of load with renewables by 2015. This portion of the plan is first achieved by the build-out of 300 MW of additional nameplate wind at our new Biglow Canyon project by 2010. We already own the development rights to Biglow Canyon and are currently constructing the first 125 MW phase of the project, which includes building the infrastructure needed to serve the entire project.
- Entering into fixed-price PPAs of varying durations to reduce our current short-term market dependence, better match supply to elections made by our direct-access eligible customers, and provide flexibility and remain adaptive to changing future conditions.

The Energy Action Plan is both diverse and serves as a bridging strategy. It avoids major new long-term, baseload thermal plant commitments while allowing time for national energy and environmental policy to coalesce and emerging technologies to mature and move closer to commercialization.

#### **Proposed Capacity Action Plan**

Due to several internal and external factors, our emphasis on capacity needs and resource alternatives has increased substantially for this IRP:

- Our supply of flexible and high capacity value hydro resources is declining.
- Both PGE and the entire Western electric system continue to add ever-increasing levels of variable wind resources.
- Increased central air-conditioning and changes in consumption patterns have also caused us to increasingly experience both summer and winter demand peaks.
- We expect a regional and West-wide tightening of the load-resource balance as we move past the end of the current decade.

Based on these factors, we no longer believe that it is wise to rely on spot-markets to meet a significant portion of our capacity needs. As a result we recommend a capacity action plan that focuses on filling our needs through reliable and longer-term demand and supply resources.

Our recommended Energy Action Plan fills about 60% of our 2012 peak capacity needs. The remaining capacity gap is approximately 740 MW, inclusive of 6% operating and 6% contingency reserves. While this shortfall appears daunting, the highest 500 MW of the peaking requirement is limited in duration, occurring over approximately 50 hours of the year under normal weather conditions. The following table presents our proposed approach to filling our peak capacity requirement, taking into account both cost and risk.

**Table ES-2: 2012 Resource Need and Potential Capacity Supply Actions**

	Capacity - Winter		Capacity - Summer	
	@Normal Hydro	% of Target	@Normal Hydro	% of Target
PGE system peak at normal weather (net of ETO EE)	4,127		3,761	
Add required operating reserve at 6% of peak load	248		226	
Add weather / plant contingency reserve at 6% of peak load	248		226	
Remove assumed 5-yr. opt-out load (w/reserves)	(32)		(38)	
Existing PGE & contract resources in 2012	(3,050)		(2,845)	
Add back implied ETO EE savings 2008-2012	<u>111</u>		<u>111</u>	
<b>PGE 2012 Resource Target<sup>1</sup></b>	<b>1,652</b>		<b>1,440</b>	
<b><u>Year-round Resource Actions:</u></b>				
Capacity value from proposed Energy Actions	904	55%	904	63%
Dual-purpose (capacity and wind following) SCCTs	100	6%	100	7%
<b><u>Customer-based Solutions:</u></b>				
Direct Load Control, if economic (space & water heat, A/C)	25	2%	23	2%
Curtailement tariff, critical peak pricing	35	2%	35	2%
Continuation of DSG program @ 13.5 MW / Yr.	80	5%	80	6%
<b><u>Seasonally Targeted Resources:</u></b>				
Bi-seasonal via demand and supply RFPs	299	18%	299	20%
Winter-only via supply RFP	<u>210</u>	<u>13%</u>	<u>0</u>	<u>0%</u>
<b>Total of Potential Actions</b>	<b>1,652</b>	<b>100%</b>	<b>1,440</b>	<b>100%</b>

<sup>1</sup> The resource target does not include ETO energy efficiency, which we recognize as an action item. After ETO EE is accounted for, the 2012 capacity resource gap will be 1540 MW.

Our proposed Capacity Action Plan includes:

- Continuation and expansion of our industry-leading Dispatchable Standby Generation (DSG) program. This program provides standby operating reserves with distributed and centrally dispatchable, customer-sited generation at very low investment cost. It also incurs fuel costs only when called upon, and contributes to customer reliability and satisfaction.
- Implementation of retail customer curtailment tariffs and direct load control for fifty hours or less per year, once our plan to install advanced metering infrastructure throughout our service territory is implemented at the end of this