

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

UM 1514

Application for Deferral of Incremental Costs
in Support of Automatic Adjustment Clause
Associated with Automated Demand Response

PORTLAND GENERAL ELECTRIC COMPANY

**Joint Testimony & Exhibit
In Support of Stipulation**

May 2, 2011

Table of Contents

I. Introduction..... 2

II. ADR Program Description..... 4

III. ADR Process..... 10

IV. Costs and Benefits 12

V. Cost Allocation 17

VI. Qualifications..... 18

List of Exhibits..... 21

I. Introduction

1 **Q. Please state your names and positions with PGE.**

2 A. My name is George Compton. I am a Senior Economist employed five-eighths time
3 by the Economic Research and Financial Analysis Division of the Public Utility
4 Commission of Oregon (OPUC or Commission). My name is Carla Bird. I am a
5 Senior Revenue Requirements Analyst employed by the OPUC. Together we are
6 testifying on behalf of Commission Staff (Staff) in this proceeding.

7 My name is Gordon Feighner. I am a Utility Analyst for the Citizens' Utility
8 Board of Oregon (CUB).

9 My name is Alex Tooman. I am a Project Manager for Portland General
10 Electric (PGE).

11 Our qualifications appear at the end of this testimony.

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

13 A. Our purpose is to describe the Stipulation reached among the Staff; CUB; and PGE
14 (the Stipulating Parties) regarding PGE's proposed Automated Demand Response
15 (ADR) pilot. The Stipulating Parties have settled all issues regarding the ADR pilot
16 including the nature of the pilot, its scale, and cost recovery. The Industrial
17 Customers of Northwest Utilities (ICNU) are also a party to this case. ICNU neither
18 supports nor opposes this stipulation.

19 **Q. What is the basis for the Stipulation?**

20 A. On December 29, 2010, PGE submitted a deferral request for the ADR pilot costs
21 (UM 1514) and Advice Filing 10-29 for recovery of those costs by means of an
22 automatic adjustment clause. PGE held several workshops both before and after

1 these filings to review all aspects of their ADR proposal. Based on these discussions
2 and two settlement conferences, the Stipulating Parties agree that the ADR pilot is
3 reasonable and prudent and that PGE's deferral and cost recovery mechanism are
4 appropriate. In support of this agreement, the Stipulating Parties also recognized that
5 the ADR program had been included in the following OPUC proceedings:

- 6 • The 2009 integrated resource plan (IRP), LC 48, which has received
7 Commission acknowledgement.
- 8 • Docket No. UE 189, regarding PGE's advance metering infrastructure
9 system (AMI). Commission Order No. 08-245 included AMI conditions
10 (Appendix A, pages 11-13 of 21) that specified a demand response
11 program of this nature.

12 **Q. How is your testimony organized?**

13 A. We begin by providing a more detailed description of the ADR pilot. We then
14 provide information regarding the operational processes that the ADR program will
15 employ. Next, we describe the costs and benefits of the ADR program. We then
16 discuss the stipulated approach for addressing the cost allocation method as
17 employed in the tariff for the automatic adjustment clause. We conclude with our
18 qualifications.

II. ADR Program Description

1 **Q. Please describe the nature of the ADR proposal.**

2 A. The ADR proposal entails a pilot operated by a 3rd-party provider (Provider), who
3 will deliver 10 MW of projected capacity benefits in 2012 and at least 20 MW of
4 projected capacity benefits in 2013. (See Exhibit 101.) The advantage of employing
5 the Provider is that they are a nationally recognized leader in automated demand
6 response programs with proven market penetration. In addition, this type of program
7 will require minimal internal development work by PGE. Instead, PGE can focus on
8 utilizing this capacity resource in providing reliable service to its customers.

9 **Q. What period does the pilot specifically encompass?**

10 A. The pilot would effectively begin on the latter date of contract signing or OPUC
11 approval. It would then continue through December 2013 and would encompass two
12 years of operations and the following seasons in which PGE could call events:

- 13 • December 2011 through February 2012 (winter 2011-2012);
- 14 • July 2012 through September 2012 (summer 2012);
- 15 • December 2012 through February 2013 (winter 2012-2013);
- 16 • July 2013 through September 2013 (summer 2013); and
- 17 • December 2013.

18 **Q. Why would the pilot run through December 2013?**

19 A. We believe that if the pilot is successful, PGE will ask to incorporate the ADR
20 program into PGE's Annual Power Cost Update filing (AUT – Schedule 125)
21 beginning January 1, 2014. Consequently, the proposed timeline allows ADR to
22 continue uninterrupted through 2013 and, from there, transition into the 2014 AUT.

1 This timeline also relates to the cost-effectiveness with the Provider, in that PGE
2 must enter into at least a two-year contract with the Provider. And finally, the
3 timeline also allows for an initial evaluation, to include the first two seasons listed
4 above (1st operating year), and a subsequent evaluation after the next two seasons
5 listed above (2nd operating year). The first evaluation will inform the parties and
6 Commission of ADR's viability prior to 2014 AUT approval and the second will
7 conclude prior to 2015 AUT approval. Canceling the pilot and attempting to restart
8 the program (while awaiting the results of the evaluations) is not a feasible approach
9 for a program operated by a 3rd-party provider.

10 **Q. Has the Provider been selected?**

11 A. Yes. PGE is currently completing contract negotiations with RTP Controls (RTP)
12 for the specific terms of the ADR pilot. RTP was selected through a request for
13 proposal process where PGE sent requests to 19 demand response providers. From
14 that initial request, PGE received five responses. Three providers were eliminated
15 based on cost and other issues. The remaining two providers then entered a complex
16 runoff. RTP was selected from that process based on a combination of good credit,
17 bidding summer and winter events (the other provider bid only winter), better
18 technology, and a stronger marketing plan.

19 **Q. Which customers will be eligible to participate in the pilot?**

20 A. All customers from:

- 21 • Schedule 47 – Small Nonres. Irrigation & Drainage;
- 22 • Schedule 49 – Large Nonres. Irrigation & Drainage;
- 23 • Schedule 83 – Large Nonres. Standard Service (31kW – 200 kW);

- 1 • Schedule 85 – Large Nonres. Standard Service (201 kW – 1000 kW); and
2 • Schedule 89 – Large Nonres. Standard Service (>1000 kW)

3 are eligible unless they participate in one of the following PGE programs:

- 4 • Direct access;
5 • Distributed standby generation;
6 • Demand buy back;
7 • Firm Load Reduction Pilot; and
8 • Any other demand response program.

9 **Q. When will ADR events be called?**

10 A. The parties agree that the ADR program is intended only as a capacity resource
11 during critical events such as a:

- 12 • Large increase in PGE’s load, which typically occurs during an extreme
13 weather event;
14 • Large decline in PGE’s generation, which can occur from a thermal plant
15 going off-line or a rapid decline in wind generation; or
16 • Significant constraint in regional transmission affecting PGE.

17 Consequently, the ADR pilot will be limited to no more 15 events per summer
18 or winter season with only one to four hours per event, and no more than 40 hours
19 per season (i.e., a maximum of 80 hours per year). There can be no more than one
20 event called per day and events cannot occur more than two days in a row.

21 **Q. What is the expected timeline for the ADR pilot?**

22 A. The contract with the Provider was finalized in April 2011. If the Commission
23 approves this proposal, the Provider will begin recruiting eligible participants in May

1 2011, so that equipment installation, testing, and interfaces can be completed in time
2 to allow the program to be available as a capacity resource by December 2011.

3 **Q. How will the program be evaluated?**

4 A. As noted above, we plan to have two formal evaluations prepared by a third-party
5 contractor after: 1) the summer 2012 season, and 2) the summer 2013 season. These
6 will require six months to prepare and will entail rigorous analyses to verify the
7 pilot's effectiveness. In addition, PGE will provide interim status reports based on
8 internal records to demonstrate the pilot's effectiveness at reducing load compared to
9 expected reductions. PGE and Staff will coordinate to determine the specific
10 information to be provided in the interim reports, which will be provided no later
11 than 45 days after the end of an operation season.

12 These studies will evaluate actual load curtailment during events called by PGE.
13 The events can be for testing purposes or critical events, or both, during a given
14 ADR season.

15 **Q. Based on these studies and information, is there any point during the course of**
16 **the pilot that the parties can determine whether it should continue or be**
17 **terminated?**

18 A. Yes. If by April 2013, the interim and formal reports indicate that the ADR pilot
19 does not provide capacity benefits at a reasonable cost, Staff or CUB or both may
20 recommend that the Commission not reauthorize the associated deferral for the
21 remainder of 2013 (May-December). The stipulation calls for PGE to apply to the
22 Commission to re-authorize the deferral of ADR pilot costs by January 1, 2012 and
23 January 1, 2013. The 2013 application for re-authorization will only seek deferral of

1 costs incurred between January 1, 2013 and April 30, 2013. If Staff or CUB or both
2 oppose re-authorization of the deferral PGE can: 1) terminate the contract with RTP
3 or 2) contest the opposition in the docket initiated by PGE's 2013 application for re-
4 authorization.

5 **Q. What will happen if the pilot proves to be successful by April 2013?**

6 A. Assuming the program is shown to be effective during the initial evaluations, Staff
7 and CUB will recommend that the Commission reauthorize the deferral and tariff for
8 the remainder of 2013. We then expect that the program will ramp up to achieve an
9 estimated 43 MW by December 2013. By the summer season 2014, the program
10 will expand to 50 MW of capacity benefit, which could then continue as part of a
11 10-year contract. (See Exhibit 101). As noted above, pending favorable evaluations
12 and Commission approval, PGE plans to seek authority to include the ADR program
13 in its 2014 and subsequent AUT filings. Ultimately, we believe the ADR program
14 has significant potential for demand response benefits.

15 **Q. Does PGE earn credits in the form of White Tags for the implementation of this**
16 **pilot?**

17 A. According to the terms of the contract between PGE and its 3rd-Party Provider, RTP,
18 any White Tags, if available, earned from the implementation of this program will be
19 retained by PGE.

20 **Q. Do the Stipulating Parties agree as to the proper treatment for any White Tags**
21 **that may be earned from the implementation of this pilot?**

22 A. Yes. Article 8 of the Stipulation sets for the agreement between the Stipulating
23 Parties by requiring PGE to bank any White Tags it earns from this pilot in a manner

1 similar to Renewable Energy Credits. In addition, the Parties agree that any sales of
2 White Tags will be reported to PGE's balancing account for property sales as a
3 refund to PGE's ratepayers.

III. ADR Process

1 **Q. Will PGE or the Provider have the primary contact with the retail customer?**

2 A. Under the ADR contract, the Provider will have the primary contact with the retail
3 customer. The Provider will ultimately be responsible for delivering committed load
4 reductions, all customer communications, equipment or facilities, incentive
5 payments, and related customer support activities.

6 **Q. How will eligible customers be recruited?**

7 A. The Provider will recruit and present offers to eligible customers and notify PGE of
8 specific participants and projected load reduction by customer. PGE will approve all
9 offers in advance and will also perform end-to-end testing to verify customer
10 participation and expected load reduction.

11 **Q. When the program is in place, how will ADR events occur?**

12 A. First, PGE will notify the provider of an event by means of electronic interface.
13 Then, the equipment and infrastructure installed by the Provider will result in
14 automated load reduction within 10 minutes of notification at customer facilities.

15 **Q. Who will monitor the actual load reductions?**

16 A. PGE and the Provider will both track individual customer and aggregate load
17 reductions and compare results for settlement purposes. Any differences in load
18 reductions that are not resolved can be settled by a separate contractor via regression
19 analysis using their extensive customer-usage data.

20

1 Q. What provisions will there be for the load reductions exceeding or falling short
2 of expected amounts?

3 A. For events in excess, load reductions will be capped at 110% of contracted levels.
4 Alternatively, the contract will provide for penalties for load reductions below
5 contracted amounts (i.e., defaulted events).

IV. Costs and Benefits

1 **Q. What are the estimated costs of the ADR pilot?**

2 A. We estimate the costs for the ADR pilot to be approximately \$8.2 million in O&M
3 expense including development costs and program evaluation.

4 **Q. What are the benefits of the ADR program?**

5 A. The primary benefit is that it provides a least-cost, demand-side (and hence, carbon-
6 free), capacity resource, which increases reliability and avoids the costs of other
7 capacity resources that PGE would need to build or acquire through contracts. In
8 addition, customers benefit by having a more diverse resource mix and by paying
9 less for capacity than most long-term, alternative resources. The ADR pilot, in
10 particular, will help determine whether demand-side programs will be an effective
11 alternative to supply-side capacity resources.

12 **Q. Are there any other benefits?**

13 A. Yes. ADR will help replace expiring capacity resources and increasing capacity
14 needs as identified in the 2009 IRP and will help meet the increasing reserve
15 requirements for intermittent wind generation. Finally, the ADR program provides
16 the following:

- 17 • It is environmentally green;
- 18 • It can be incremental (by MW);
- 19 • Additional energy efficiency measures are possible by means of the
20 Provider's expertise with curtailable customers; and

- 1 • The ADR program could potentially be expanded to other areas in Oregon
2 since large commercial and industrial customers could have locations
3 outside of PGE’s service territory.

4 **Q. Are there any potential benefits that PGE could attain by monetizing the**
5 **reduced load through power sales?**

6 A. PGE maintains that during any of the critical events in which ADR might be
7 exercised, PGE would neither have a “long” position nor be able to create one by
8 curtailing load. If PGE were to attempt to achieve economic benefits from ADR
9 during non-critical events, it would risk having this resource unavailable during an
10 actual critical event, especially given the limited number of hours that are available.
11 Not only would this be an imprudent use of the ADR capacity resource, but valuable
12 reliability could be forfeited during periods when it is needed most. In short, PGE
13 believes that this benefit will be used solely for system reliability.

14 **Q. How do you know the ADR program is a least-cost alternative?**

15 A. Consistent with the 2009 IRP and the scoping plan for customer and system benefits
16 in UE 189, PGE compared the estimated cost of the demand response programs with
17 that of a single cycle combustion turbine (CT). For this program, in particular, the
18 costs of ADR were compared to that of an LMS100 CT and found, on an average
19 levelized program basis, to be approximately equal.

20 **Q. You have described the ADR *program* as being attractive insofar as the ADR**
21 **per-megawatt-year costs would be “approximately equal” to the costs of a**
22 **LMS100 CT. Is there a way to evaluate the cost-effectiveness of the proposed**
23 **ADR *pilot* itself?**

1 A. Two considerations apply. The April 2013 evaluation described above provides for
2 an early termination of the pilot in the event of a demonstrated failure of the ADR
3 mechanisms to achieve the timely capacity reserve benefits that are sought. At that
4 point, PGE estimates only about \$6 million of the projected total of \$8.2 million
5 would have been recovered from ratepayers.

6 Provided that the targeted capacity responses are achieved through the
7 implementation of the pilot, and assuming the ascribed CT-equivalent ADR value
8 modeled by PGE in the least-cost scenario, then approximately two-thirds of the
9 ADR pilot period costs (approximately \$5.2 million) can be justified as providing
10 valuable incremental critical event capacity. Accordingly, less than \$3 million of the
11 \$8.2 can be attributed to “learning” and the absence of economies of scale. That \$3
12 million would include an investment in setting up administrative processes,
13 infrastructure and equipment, and costs to secure customer participation for full
14 system deployment as well as providing assurance regarding the viability of an
15 important component of demand-side management.

16 **Q. Isn't it true that if an LMS100 or some other CT were in place rather than the**
17 **ADR program that PGE and its customers could reap benefits beyond meeting**
18 **the critical event capacity requirements described above? (Those benefits**
19 **would be in the form of added off-system sales or the avoidance of some load-**
20 **balancing spot-market purchases during high-price, non-critical periods.)**

21 A. Yes, that would be true.

22 **Q. Then why are the parties supporting the ADR program rather than promoting**
23 **the installation of more CT capacity?**

1 A. Along with the other advantages of the ADR program that were described earlier, the
2 Stipulating Parties believe there is considerable merit in seeking diversity in PGE's
3 capacity portfolio. The ADR program costs are well understood and limited.
4 Installing thermal production capacity entails additional risks related to permitting,
5 siting, and construction costs, in addition to operational expense risks regarding fuel
6 prices, CO₂ taxes, and pollution abatement.

7 **Q. Why would an LMS100 be the comparable standard and not another capacity**
8 **contract?**

9 A. Because capacity contracts can have a variety of conditions and notification times,
10 they are not readily comparable. In contrast, the LMS100 has 10-minute availability,
11 similar to ADR, so that it represents the least-cost alternative resource.

12 **Q. You stated above that an automatic adjustment clause is proposed as the**
13 **method of cost recovery for this pilot. What is the basis for this?**

14 A. Based on the following reasons, we believe that an automatic adjustment clause
15 (AAC) is appropriate for recovering prudently incurred costs associated with ADR:

- 16 • To achieve a meaningful level of results, the ADR pilot is scheduled for
17 more than one year.
- 18 • After the ADR pilot is complete, and if deemed successful, PGE proposes
19 to have subsequent ADR costs flow through PGE's Annual Power Cost
20 Update (Schedule 125) similar to other power cost and capacity resources.
21 The AAC will allow for similar treatment during the pilot phase.
- 22 • The ADR program is predictable, verifiable, and implemented on a
23 scheduled basis.

- 1 • AACs are typically applied pursuant to previous Commission decisions or
2 statutory authority (e.g., PGE’s RAC filings / SB 838). The ADR program
3 is a direct result of Commission Order No. 08-245 (Appendix A, pages
4 12-13 of 21) and is consistent with PGE’s recently acknowledged IRP
5 (LC 48).

V. Cost Allocation

1 **Q. Please describe the stipulation regarding the ADR tariff.**

2 A. In the Stipulation, the Stipulating Parties agree to support the tariff filing (Advice 10-
3 29), which allows PGE to collect ADR costs by means of an automatic adjustment
4 clause.

5 **Q. What method of allocating costs have you included in the tariff?**

6 A. PGE's initial advice filing specified that the costs of the ADR program would be
7 allocated to each customer schedule on the basis of an equal percent of forecast
8 generation revenues.

9 **Q. Do all parties agree with this allocation?**

10 A. No. ICNU has indicated that it opposes the rate spread portion of Advice Filing
11 10-29, and neither supports nor opposes the other aspects of this Stipulation. To
12 address ICNU's position, PGE supplemented Advice No. 10-29 with an amended
13 ADR tariff, removing the language regarding the cost allocation method, and
14 replacing it with a provision stating that the costs will be allocated to applicable rate
15 schedules in a manner approved by the Commission. With Commission approval of
16 the ADR pilot and this stipulation, the Provider can begin developing the program so
17 it can become effective by December 2011. The Parties can also begin a separate
18 process soon after approval of this tariff and the ADR pilot to bring the cost
19 allocation issue to the Commission for decision.

VI. Qualifications

1 **Q. Mr. Compton, describe your educational background and experience.**

2 A. I received a Bachelor of Science Degree in Mathematics and Psychology and a
3 Master of Science Degree in Statistics from Brigham Young University, and a Ph.D.
4 in Economics from UCLA. Following 11 years of employment as a probabilist in
5 the McDonnell Douglas Astronautics Company, I spent 30 years in Utah working in
6 the field of utility regulation – mostly for that state’s Division of Public Utilities.
7 My part-time employment during the past four years with the OPUC Staff has mostly
8 involved rate-spread and rate-design work in electric and gas general rate cases. I
9 have also had responsibilities regarding PacifiCorp’s multi-state allocations process,
10 IRP risk analyses, and such demand-side management elements as the critical peak
11 pricing and large customer firm load curtailment pilot programs of PGE.

12 **Q. Ms Bird, describe your educational background and experience.**

13 A. I received an Accounting Degree from Trend College of Business in 1983. I
14 received my certification from the National Association of State Boards of
15 Accountancy in the Principles of Public Utilities Operations and Management in
16 March of 1997. I have attended the Institute of Public Utilities sponsored by the
17 National Association of Regulatory Utility Commissioners at Michigan State
18 University in August of 2002 and the College of Business Administration and
19 Economics at New Mexico State University’s Center for Public Utilities in May of
20 2004. I have been employed by the Public Utility Commission of Oregon since
21 April of 2001. Currently, I am the Senior Utility Analyst for revenue requirement
22 for the Rates and Regulation Division of the Utility Program. Current

1 responsibilities include leading research and providing technical support on a wide
2 range of policy issues for electric and gas utilities. I have previously testified in
3 behalf of the Public Utility Commission in Docket Nos. UE 177, UE 178, UG 170,
4 UG 171, UE 180, UM 1234, UE 167, UE 188, UE 197, UE 177, UE 178, UM 1121,
5 UM 1261 and UM 1271 and numerous other dockets.

6 **Q. Mr. Feighner, describe your educational background and experience.**

7 A. I received a Bachelor of Arts degree in Economics from Reed College in 2002. I
8 received a Master of Environmental Management from Duke University in 2005. I
9 have previously provided testimony in dockets including UE 196, UE 204, UE 207,
10 UE 208, UE 210, UE 213, UE 214, UE 216; UE 217, UE 219, UM 1355, UM 1431,
11 and UM 1484. I have also completed the Annual Regulatory Studies Program at the
12 Institute of Public Utilities at Michigan State University in 2010.

13 Between 2004 and 2008, I worked for the US Environmental Protection Agency
14 and the City of Portland Bureau of Environmental Services, conducting economic
15 and environmental analyses on a number of projects. In November 2008 I joined the
16 Citizens' Utility Board of Oregon as a Utility Analyst and began conducting research
17 and analysis on behalf of CUB.

18 **Q. Mr. Tooman, please describe your educational background and experience.**

19 A. I received a Bachelor of Science degree in Accounting and Finance from The Ohio
20 State University in 1976. I received a Master of Arts degree in Economics from the
21 University of Tennessee in 1993 and a Ph.D. in Economics from the University of
22 Tennessee in 1995. I have held managerial accounting positions in a variety of
23 industries and have taught economics at the undergraduate level for the University of

1 Tennessee, Tennessee Wesleyan College, Western Oregon University, and Linfield
2 College. Finally, I have worked for PGE in the Rates and Regulatory Affairs
3 department since 1996.

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

5 A. Yes.

List of Exhibits

<u>Exhibit</u>	<u>Description</u>
101	ADR Program Timeline