

1 **BEFORE THE PUBLIC UTILITY COMMISSION**
2 **OF OREGON**

3 UM 1340

4 In the Matter of

5 PORTLAND GENERAL ELECTRIC
6 COMPANY

7 Report on the Feasibility of Using Stochastic
8 Modeling in the Annual Update.

MOTION TO CLOSE INVESTIGATION

9 Staff of the Public Utility Commission of Oregon (“staff”) asks the Commission to close
10 the investigation into the feasibility of using stochastic modeling in Portland General Company’s
11 (“PGE”) Annual Update because the study PGE performed indicates that the costs of stochastic
12 modeling will outweigh any potential benefit. The parties to this docket, which include PGE, the
13 Citizens’ Utility Board, the Industrial Customers of Northwest Utilities and PacifiCorp, support
14 this motion.

15 **I. Background.**

16 The Commission’s final order in PGE’s last general rate case, UE 180, specified that
17 “PGE should submit a report on the feasibility of using stochastic modeling in the Annual
18 Update by September 1, 2007,” and “after PGE submits its report on stochastic modeling the
19 Commission shall open a new docket to consider whether stochastic modeling should be used to
20 forecast net variable power costs.”¹ PGE submitted the feasibility report in compliance with the
21 Commission’s order. PGE’s report discussed (1) the history of PGE’s investigation into
22 stochastic power cost modeling; (2) the work on stochastic power cost modeling PGE had done
23 since the UE 180 order; (3) issues related to implementation of stochastic power cost modeling;
24 and (4) PGE’s need for Commission direction as to how PGE should proceed with
25 implementation of stochastic power cost modeling in the Annual Update process.

26 ¹ Order No. 07-015 at 12 and 56.

1 After PGE submitted its report, administrative law judge Sarah Wallace held a prehearing
2 conference and adopted an initial procedural schedule agreed to by all the parties. This schedule
3 consisted of a workshop, preceded by the circulation of issues lists. In her prehearing conference
4 memorandum, Judge Wallace noted that she intended to hold another prehearing conference to
5 set the remainder of the procedural schedule after parties had had opportunity to discuss and
6 come to agreement on the scope of the docket and the issues that must be addressed.

7 In accordance with the procedural schedule, the parties circulated issues lists and
8 participated in a workshop. After discussion of the issues at that workshop, the parties
9 concluded that the investigation into stochastic modeling that had been conducted thus far
10 established that the cost of using stochastic modeling in the Annual Update far outweighed any
11 potential benefit. The parties agreed that the appropriate next step in the docket was to ask that
12 the investigation be closed.

13 **II. Analysis.**

14 **a. Costs.**

15 PGE states that it has already spent \$260,000 in connection with this investigation into
16 the use of stochastic modeling. PGE estimates that in order to complete a model that is sufficient
17 for ratemaking purposes, the company would have to spend an additional \$500,000.
18 Accordingly, PGE's initial start-up costs to implement stochastic modeling would exceed
19 \$750,000.

20 PGE also estimates that in addition to these one-time costs, PGE would have ongoing
21 costs that exceed \$100,000 annually for full-time employees who would update and maintain the
22 model. PGE notes that the employees would have to be highly skilled in econometric techniques
23 and have graduate-level education, and says such employees are not readily available in the
24 workforce.

25 Other costs would also be incurred if stochastic modeling is used for PGE's annual
26 update. If stochastic modeling is used for ratemaking purposes, parties will have to agree on, or

1 litigate, the key variables of the model, the mathematical specifications of their stochastic
2 characteristics, and associated data sets and assumptions. Accordingly, all stakeholders,
3 including the Commission and interested customer groups, would incur significant costs in
4 connection with the implementation of stochastic modeling.

5 **b. Benefits.**

6 In its feasibility report, PGE described the simulated results of the preliminary stochastic
7 modeling performed by its consultant. The preliminary results indicated that stochastic modeling
8 produced little difference in net variable power costs from PGE’s base Monet forecast. This
9 suggests that use of stochastic modeling is unlikely to produce a material improvement in
10 precision from current modeling.

11 In addition, as discussed in previous rate proceedings, staff had previously hoped that
12 stochastic modeling would capture the extrinsic value of super peak plants and cold snap
13 contracts that are currently not realized using the Commission’s normalized approach to
14 ratemaking. Further, staff assumed that a consequence of capturing this value through stochastic
15 modeling would potentially have the effect of lowering net variable power costs (“NVPC”).
16 However, because five independent variables were allowed to vary randomly within the model--
17 hydro availability, electricity prices, natural gas prices, plant outage and load--the net result was
18 an increase in NVPC of approximately \$10,000,000.

19 Through the use of a PCAM, in the case of PGE, extrinsic values associated with super
20 peak and cold snap contracts will be considered on an annual basis with the true up mechanism.
21 Therefore, one of the original benefits of the stochastic modeling approach is no longer as critical
22 as staff previously considered.

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1 **c. Other considerations.**

2 **1. Any information learned through this investigation and the implementation**
3 **of stochastic modeling for PGE is not necessarily transferable to other**
4 **utilities.**

5 The investigation into stochastic modeling for PGE may not be applicable to stochastic
6 modeling for any other utility. It is possible the Commission would have to conduct similar
7 investigations into the use of stochastic modeling for PacifiCorp and Idaho Power Company.
8 And at minimum, the Commission would have to have proceedings to determine key variables of
9 any stochastic model, the mathematical specifications of their stochastic characteristics, and
10 associated data sets and assumptions for PacifiCorp and Idaho Power before using stochastic
11 modeling for those utilities.

12 **2. Stakeholders may be disadvantaged by use of stochastic modeling.**

13 It is optimistic to assume that consumer advocacy groups will have the resources to learn
14 a complicated stochastic model (with thousands of iterations) and verify the results.
15 Accordingly, these groups may be disadvantaged in any future proceedings using stochastic
16 modeling.

17 **III. Conclusion.**

18 The costs of using stochastic modeling outweigh any potential benefit. As noted above,
19 PGE's initial implementation costs for stochastic modeling will exceed \$750,000 and its ongoing
20 costs associated with stochastic modeling will likely exceed \$100,000 per year. In addition, the
21 Commission and stakeholders would incur significant costs in connection with the
22 implementation of stochastic modeling. In contrast, ratepayers will likely not see a benefit from
23 stochastic modeling, other than an assurance that certain costs may be more accurately captured
24 in PGE's NVPC, albeit at a higher level. However, even this benefit is of limited value given
25 that PGE is subject to a power cost adjustment mechanism that includes a deadband that would
26 likely absorb any difference in NVPC obtained by use of stochastic modeling.

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1 Because it is clear to staff that the costs of stochastic modeling outweigh any potential
2 benefit, staff asks the Commission to close the investigation into use of stochastic modeling in
3 PGE's Annual Update.

4 DATED this 6th day of May 2008.

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Respectfully submitted,

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1 **CERTIFICATE OF SERVICE**

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3 I certify that on May 6, 2008, I served the foregoing upon all parties of record in this
4 proceeding by delivering a copy by electronic mail and by mailing a copy by postage prepaid
5 first class mail or by hand delivery/shuttle mail to the parties accepting paper service.

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