

May 6, 2016

TO: Tyler Pepple  
Bradley Van Cleve  
Davison Van Cleve, P.C.

FROM: Patrick Hager  
Manager, Regulatory Affairs

**PORTLAND GENERAL ELECTRIC  
UE 308  
PGE Response to ICNU DR No. 007  
Dated April 25, 2016**

**Request:**

**Please provide all data necessary to quantify the amount of any risk premium that is built into forward natural gas and power prices, including but not limited to the following:**

- a. Quarterly Forward Price Curves over the period December 2009 through March 2016 (inclusive), including all power and natural gas hubs where the Company transacts and 20 years of prices;**
- b. The final AUT Forward Price Curves over the period November 2009 through November 2015 (inclusive), including all power and natural gas hubs where the Company transacts and 20 years of prices;**
- c. Spot market prices, on a monthly basis over the period 2008-2016 (inclusive), including all power and natural gas hubs where the Company transacts; and,**
- d. Any other data or information that the Company would use to conduct to such an analysis.**

**Response:**

PGE objects to this request on the basis that it is overly broad and vague. Without waiving its objection, PGE replies as follows:

- a. Attachment 007-A provides quarterly forward price curves over the time period December 2009 through March 2016 for the power and gas trading locations used in PGE's initial forecast of 2017 power costs. PGE's forward price curves generally span a time series of five to six years, not 20 years. Due to limited liquidity, PGE's forward price curve for the California-Oregon Border (COB) spans one year.
- b. Attachment 007-B provides the final AUT forward price curves over the time period November 2009 through November 2015 for the power and gas trading locations used in each year's respective final power cost forecast. In its final update of electric and gas price curves PGE creates a forward curve based on an average of five daily curves from early November. This forward curve is identified with yellow highlight in the tables within Attachment 007-B. PGE's AUT forward price curves span a one year time series of prices, not 20 years.
- c. Attachment 007-C provides spot market prices on a monthly basis over the period 2008 – 2016 for the power and gas trading locations used in PGE's initial forecast of 2017 power costs.
- d. See PGE's objection at the beginning of this response. PGE has not attempted to identify a risk premium in the forward price curves identified in parts (a) and (b) of this response.

Attachments 007-A, 007-B, and 007-C are protected information subject to Protective Order No. 16-137.

September 12, 2016

TO: Tyler Pepple  
Bradley Van Cleve  
Davison Van Cleve, P.C.

FROM: Patrick Hager  
Manager, Regulatory Affairs

**PORTLAND GENERAL ELECTRIC  
UE 308  
PGE Response to ICNU DR No. 023  
Dated September 6, 2016**

**Request:**

**Please update your response to ICNU DR 007 to include data from 2000 to the present. Please provide the data in the same form as provided in response to ICNU DR 007.**

**Response:**

PGE objects to this request on the basis of relevance for the reasons stated below. Without waiving this objection, PGE responds as follows:

ICNU DR 007 specifically requests data necessary to quantify the amount of any risk premium that is built into forward natural gas and power prices. The fundamental value of hedging is in the reduction of price volatility and the true measure of the risk premium observed through hedging is the difference between prices in fixed price transactions at a given point in time. For example, locking prices for ten years will be more expensive than locking prices for five years, which will be more expensive than locking prices for one year. This price difference implicitly represents the premium paid for the extended price certainty.

PGE notes that a hindsight analysis of the difference between a point-in-time forecast of future natural gas prices versus the spot market is not a true measure of the risk premium associated with price certainty obtained through hedging activities. Instead, ICNU's backcasting analysis only reflects:

- How accurately the futures market has predicted future price activity, which is inherently difficult and never precise.
- How effectively hedges based on those futures “beat the market” (see PGE’s response to OPUC Data Request No. 055).

Attachment 023-A provides the requested information. Please note that the AUT curves corresponding to Attachment 007-B are not available prior to 2002, which was PGE’s earliest general rate case test year in the requested range (Docket No. UE 115). The annual Resource Valuation Mechanism (precursor to PGE’s AUT) did not begin until 2003.

Attachment 023-A is protected information subject to Protective Order No. 16-137.

Page 5 of Cross-Examination Exhibit ICNU/300 contains protected information, subject to Order No. 16-137, and has been redacted in its entirety.

September 12, 2016

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FROM: Patrick Hager  
Manager, Regulatory Affairs

**PORTLAND GENERAL ELECTRIC  
UE 308  
PGE Response to ICNU DR No. 024  
Dated September 6, 2016**

**Request:**

**Referencing PGE/800 at 30:4-6, please identify the specific hedging strategies PGE is examining to lock in forecasted prices of oil and non-gas liquids.**

**Response:**

PGE has had preliminary conversations with counterparties regarding hedging strategies to address the forecasted prices of oil and non-gas liquids (NGLs). When PGE has an approved transaction, potential hedge counterparties have expressed interest in discussing possible transactions. A liquid market currently exists for such hedging strategies including fixed for float swaps for up to 10 years (for oil) and up to 3 years (for NGLs). Absent an approved transaction, however, serious negotiations are unable to occur.

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Manager, Regulatory Affairs

**PORTLAND GENERAL ELECTRIC  
UE 308  
PGE Response to ICNU DR No. 025  
Dated September 6, 2016**

**Request:**

**Reference PGE/800 at 51:11-12. If the Commission adopted the referenced proposal, would the guidelines continue to operate as a presumption of prudence (see PGE/200 at 2:5-6) for any future transaction that met the guidelines?**

**Response:**

Under PGE's alternative proposal, "Guidelines (if any) [would] serve as mere commercial guideposts to use when assessing the market" (PGE/800 at 51:11-12). If the Commission were to approve this alternative, the guidelines would not operate as a presumption of prudence for future transactions that met the guidelines. Instead, the guidelines would operate as internal PGE parameters only. Potential transactions that fall outside the guidelines will not be pursued unless other factors indicate further consideration is warranted. Potential transactions that fall within the guidelines would have prudence determined in a rate making proceeding. This method would apply until such time that the Commission redefines the nature, scope, and/or meaning of the guidelines.

Cross-Examination Exhibit ICNU/302 contains protected information, subject to Order No. 16-137, and has been redacted in its entirety. ICNU/302 will be provided on CD to Qualified Persons as defined in Order No. 16-137.