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August 23, 2016

Via Electronic Filing

OREGON PUBLIC UTILITY COMMISSION
ATTENTION: FILING CENTER
PO BOX: 1088
SALEM OR 97308-1088

RE: Docket No. UE 308 – 2017 Annual Power Cost Update Tariff (Long Term Hedging)

Attached is Amended Redacted Testimony of Staff Exhibit 500.

Confidential pages from Staff/500 Kaufman/4 -11 are being mailed to parties who have signed Protective Order No.16-137.

A Certificate of Service and Service list are included with this filing

/s/ Kay Barnes
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CERTIFICATE OF SERVICE

UE 308

I certify that I have, this day, served the foregoing document upon all parties of record in this proceeding by delivering a copy in person or by mailing a copy properly addressed with first class postage prepaid, or by electronic mail pursuant to OAR 860-001-0180, to the following parties or attorneys of parties.

Dated this 23rd day of August, 2016 at Salem, Oregon

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CASE: UE 308
WITNESS: LANCE KAUFMAN

PUBLIC UTILITY COMMISSION
OF
OREGON

(AMENDED)
STAFF EXHIBIT 500

Opening Testimony
(Long-Term Hedging)

REDACTED
August 23, 2016

Q. Please state your name, occupation, and business address.

A. My name is Lance Kaufman. I am a Senior Economist employed in the Energy Rates, Finance and Audit Divison of the Public Utility Commission of Oregon (OPUC). My business address is 201 High Street SE., Suite 100, Salem, Oregon 97301.

Q. Please describe your educational background and work experience.

A. My witness qualification statement is found in Exhibit Staff/301.

Q. What is the purpose of your testimony?

A. The purpose of my testimony is to evaluate PGE's proposed gas production investment.

Q. Did you prepare an exhibit for this docket?

A. Yes. I prepared a summary of PGE's revenue requirement forecast in Exhibit Staff/501, consisting of 3 pages. I prepared a summary of Staff's revenue requirement forecast in Exhibit Staff/502, consisting of 3 pages. I provide a copy of PGE's response to Staff Data Requests in Exhibit Staff/503, consisting of 4 pages.

Q. How is your testimony organized?

A. My testimony is organized as follows:

Q. Please summarize PGE's proposed gas production investment.

A. PGE plans to enter into a natural gas production partnership ("Proposed Investment") with an existing natural gas producer ("Production Partner"). Through a newly formed affiliate Portland General Gas Supply Company (PGGS), PGE would invest in drilling and developing new gas wells. PGE is proposing to incorporate costs of the Proposed Investment into the 2017 Annual Power Cost Update (APCU), which would increase 2017 power costs by $0.6 million.[1] PGE also requests that the Commission:

- Approve affiliated interest transactions for the Proposed Investment.
- Waive the lower of cost or market rules for the Proposed Investment.
- Approve hedging guidelines that would facilitate PGE's formulaic investment of approximately $325 million into well acquisition and development.
- Allow formulaic recovery of the $325 million investment through the AUT.

Q. What concerns does Staff have regarding this investment?

A. Staff's review of the Proposed Investment identified a number of issues:

- PGE values crude production using an optimistic forecast;
- PGE understates the risk of the investment;
- The investment may add to PGE's cost of capital; and
- The timing of the costs and benefits do not match.[2]

Q. Please summarize your findings and recommendation.

[1] See PGE/700, Sims – Tooman/2, line 11.
[2] See PGE/100, Tinker – Sims/21, lines 15-22.

A. I find that the Proposed Investment increases PGE's short and long term general business risk. I also find that the vast majority of gas production occurs within the first ten years of the Proposed Investment, a time period horizon that has traditional financial hedging options available. Based on these findings, I recommend that the Commission not approve PGE's requests related to the Production Investment. Should the Commission decide to allow cost recovery of the Proposed Investment, I provide an alternate framework that minimizes negative impacts to ratepayers.

Q. Please summarize your remaining testimony.

A. The remainder of my testimony addresses Staff's issues in the order raised above.

ISSUE 1. PGE HAS AN OPTIMISTIC VIEW OF COMMODITY PRICES

Q. Please summarize why you believe that PGE has an optimistic view of commodity prices.

A. PGE forecasts production revenues by forecasting an annual sale price for natural gas, NGLs, and crude oil. PGE's forecast of market prices relies on the NYMEX commodity futures market for the first few years and on McKenzie Woods forecasts for the remaining years. PGE's July 15, 2016, Monet Update contains a reasonable natural gas forecast. However, the forecast used for NGLs and crude oil prices is not reasonable. Figure 1 below is PGE's forecast for the production value of the Proposed Investment's oil and NGL.

[redacted]

[redacted]

[redacted]

PGE expects to sell both oil and NGL at [redacted] per barrel by 2024. In its NPV model, PGE prices both crude oil and NGL price per barrel to be equivalent to West Texas Intermediate (WTI) crude oil. The sharp rise observed in 2020 is the result of transitioning from a future's market based forecast to a [redacted] forecast.

Q. Please explain how production costs are calculated.

A. PGE calculates production cost using a revenue requirement model. The revenue requirement model forecasts operating costs, depreciation, depletion, taxes, and capital carrying costs. Most operating costs are set at a base level and escalated over the production period at an inflation rate of [redacted] Other production costs such as transportation are indexed to production volumes. PGE uses current values for property tax rate, income tax rate, and weighted average cost of capital.

Q. Please summarize Staff's analysis of the revenue requirement model.

A. At this time Staff has no objections to the cost side of the revenue requirement model. The annual revenue requirements of PGE's model are provided in the "Total Revenue Reqmts" column of Exhibit Staff/501, Kaufman/2.

Staff has reviewed the cost assumptions and mechanics of the model. The mechanics of the revenue requirement model are sound. The cost assumptions that can be easily validated such as tax rate and cost of capital are reasonable. Staff does not currently have a basis to verify the reasonableness of components specific to gas exploration and production. However, a finding that the production cost forecasts are too low would not change Staff's conclusions.

<u>ISSUE 2. THE VALUE OF THE PROPOSED INVESTMENT IS UNCERTAIN</u>

Q. PGE claims that the production guarantees reduce the Proposed Investment's risk. What is the financial impact of triggering the minimum production guarantee?

A. With the correct commodity prices, the expected NPV of the project is [redacted]. If production decreases to [redacted] of the expected amount, the NPV reduces by [redacted] to negative [redacted], a reduction of over [redacted] percent. In the optimistic scenario of hitting the production cap of [redacted] percent, the Proposed Investment has an NPV of [redacted].

Q. How does a 10 percent reduction in commodity prices used by Staff affect the value of the Proposed Investment?

A. A 10 percent reduction in the expected commodity prices reduces the value of the investment from [redacted] to [redacted]. The optimistic scenario of a 10 percent increase in the expected commodity prices has an [redacted].

Q. Does PGE's analysis include any contingency expenses?

A. No. PGE's analysis does not include contingency expenses. If the analysis includes 10 percent adder for contingencies the NPV decreases from [redacted] to [redacted]. The optimistic scenario of a 10 percent reduction in expenses has an [redacted].

Q. So with respect to all three factors – production quantity, price, and cost, a 10 percent error results in a negative NPV?

A. That is correct. Staff adjusted the three factors by 10 percent each. For every factor the investment became uneconomic and had a negative NPV.

Q. You have evaluated three separate negative scenarios: low production, low commodity prices, and unexpected expenses. What is the value of the investment if all three scenarios occur simultaneously?

A. If all three negative outcomes occur simultaneously the NPV of the project is negative [redacted] This loss occurs on a [redacted] investment, for every [redacted].

Q. Are the three scenarios reasonable?

A. Yes, these are reasonable scenarios. A 10 percent reduction in expected gas prices has been a common event over the last decade. Similarly, Commission experience with other projects shows production shortfalls and cost overruns exceeding 10 percent are not unreasonable.

Q. So despite the production guarantee, is there a reasonable scenario where PGE loses nearly all the investment?

A. Yes.

ISSUE 3. PROPOSAL ADDS TO PGE'S COST OF CAPITAL

Q. Please summarize your findings related to the risk of the proposed investment.

A. Staff expects the Proposed Investment will increase risk to PGE investors. The added risk to investors will likely cause PGE's cost of capital, and subsequently customer rates, to increase. The cost effectiveness of the Proposed Investment is highly sensitive to price, production, and cost assumptions. The Proposed Investment and the supporting analysis rely on Production Partner's participation as an operating partner. PGE does not have the expertise to operate the wells. In the event that Production Partner ceases to operate the wells, PGE will have to renegotiate a new contract, at potentially unfavorable terms.

Production Partner Credit Risk

Q. Please provide a succinct background for PGE's Production Partner.

A. [redacted]

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[3] See "[redacted] Warns of $44 Million Hedging Loss" by Paul Ausick in the July 15, 2016, Wall Street Journal (WSJ).

[redacted]

[redacted]

[redacted]

Q. Is the industry that Production Partner operates in low risk?

A. No. Between January 1, 2015, and May 16, 2016, 64 bankruptcies have occurred in the oil and gas exploration sector.[4] Bankruptcies continue despite rebounds in crude prices.[5] Associated investment banks have loaned substantial money to companies in this industry and these banks now have an incentive to arrange transactions in which monies due the coordinating bank or investment group are repaid out of new debt obligations of new investors.

Proposed Investment is not a reasonable hedging instrument

Q. What is PGE's primary justification for the Proposed Investment?

A. PGE's primary justification for the proposed investment is to reduce long term gas price uncertainty. PGE claims that this is done primarily for the benefit of customers.

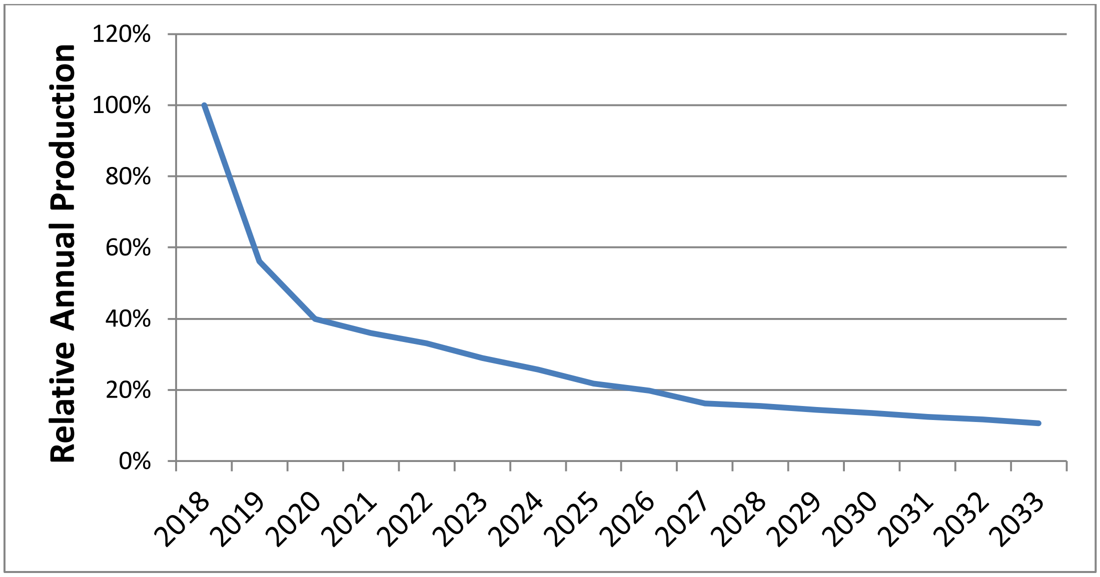
Q. How does the Proposed Investment impact customers' rate risk?

[4] See "Oil bankruptcies mount despite crude rebound", CNN, http://money.cnn.com/2016/05/16/investing/sandridge-energy-oil-bankruptcy/ accessed August 9, 2016.
[5] See "Oil bankruptcies mount despite crude rebound", CNN, http://money.cnn.com/2016/05/16/investing/sandridge-energy-oil-bankruptcy/ accessed August 9, 2016.

A. The Proposed Investment has an ambiguous impact on risk. There is likely some positive correlation between the value of the proposed investment and natural gas prices. The correlation means that when PGE's gas costs increase, the value of the proposed investment also increases. The correlation is limited; however, because approximately half the production value is tied to oil prices. PGE has failed to provide analysis quantifying the expected relationship between PGE's gas costs and the value of the Proposed Investment.

An additional limitation in the value of the Proposed Investment as a risk reduction instrument is that the annual production volumes decline sharply in the first few years of the hedge. Production decreases 60 percent in the first two years of full production, and by 10 years after drilling is complete production reduces to 16 percent of the original level. This means that the vast majority of the value of the Proposed Investment could be hedged with a 10 year financial hedging instrument.

Figure 2 Relative Annual Production Value



PGE's proposal introduces substantial production cost and liability uncertainty. Neither of these two counteracting forces on PGE's risk has been quantified. This makes the Proposed Investment a relatively ineffective hedge compared to a traditional financial hedging instrument.

Q. If the Proposed Investment does not resemble a financial instrument, what does it resemble?

A. It is very similar to simply purchasing stock in a gas production firm. The value of the stock will increase and decrease with the forward gas price curve.

Q. What disadvantage is there in PGE hedging by purchasing stock in gas production firms?

A. If PGE invests heavily in gas production firms, PGE's cost of capital may increase. Gas production firms have higher costs of capital compared to regulated utility firms.

Q. Do you believe that there is another way for customers to reduce their long term gas risk?

A. Yes, PGE is essentially proposing to impose investment in gas exploration and production on its customers. This is a type of investment decision that individual customers can already make on their own. If individual PGE customers feel over exposed to long term gas price risk, they can make investments equivalent to the one proposed by PGE by directly investing in E&P firms.

Cost of Capital impacts to PGE with a Gas E&P Subsidiary

Q. What is PGE's credit status now?

A. PGE's FMBs are currently rated as:

Moody's: A1 **S&P: A–**

PGE's Unsecured Long-Term Debt is currently rated as:

Moody's: A3 **S&P: BBB**

Q. Is PGE working towards an S&P upgrade?

A. Yes, PGE filed testimony in 2015 stating "PGE will continue to pursue an upgrade from S&P, which would help lower financing costs for customers through lower pricing on revolving lines of credit and new debt."[6]

Q. Given the differential between Moody's and S&P what would be the impact of an S&P upgrade of PGE's credit ratings?

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[6] See UE 294 PGE/1000, Hager – Greene/5, lines 8 to 10.

A. Because revolving credit facilities, letters of credit and other financial instruments are based on the higher of S&P vs. Moody's ratings when rating are only one notch apart, PGE would see lower costs in all its financing activity.

Q. And ratepayers would see the benefits?

A. Yes.

Q. What would be the credit impact of PGE forming a natural gas E&P division?

A. Rating agencies would be less likely to upgrade PGE, and would likely review PGE for downgrade.[7] PGE notes that it has not communicated with credit rating agencies regarding the proposed investment.[8]

Q. Would ring fencing fully insulate the pure utility operations of PGE?

A. No. PGE admits that ring fencing cannot fully insulate PGE's utility operations from affiliated interest risk.[9] PGE proposes that any impact on cost of capital be passed on to customers.[10]

Q. Suppose after the Proposed Investment PGE's credit rating remains unchanged. Does this mean the investment did not harm ratepayers?

A. No. If the Proposed Investment prevents PGE from receiving a rating upgrade, PGE customers will experience an opportunity cost of not having lower interest rates.

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[7] Regarding its recent sale MDU Resources CEO stated "Exiting the E&P business lowers our risk profile, and it allows us to focus more on growing our other business operations." See http://www.mdu.com/news/2016/04/05/mdu-resources-completes-sale-of-oil-and-natural-gas-assets accessed August 8, 2016.
[8] See Staff/503, Kaufman/2.
[9] See Staff/503, Kaufman/3.
[10] See Staff/503, Kaufman/4.

ISSUE 4. TIMING OF COSTS AND BENEFITS ARE NOT MATCHED

Q. PGE claims that the project has a long term cost per therm below the forward price curve for natural gas. Does this mean that all customers are expected to benefit from the investment?

A. Not all customers benefit from PGE's Proposed Investment. According to PGE, the annual cost of the investment will exceed the benefits in the first six years of the project. PGE proposes passing the excess costs to customers in the year that they occur. However, PGE has access to existing medium term hedging products that can provide the same level of cost stability without the sizeable increase in total fuel cost.

The primary customer benefit under PGE's assumptions occurs from 2028 to 2038. This means that current customers are paying higher than market gas prices so that future customers can pay lower than market prices.

Q. Is it possible to appropriately match the costs and benefits of the Proposed Investment?

A. Staff contends that there are no net benefits. However, even for a project with negative net present value, it is possible to more fairly allocate the costs. PGE could defer production costs from periods of relatively higher costs to periods of relatively lower costs.

Q. If the Commission approves cost recovery for this investment, should the Commission approve an increase to PGE's 2017 NVPC?

A. No, even if the Commission approves cost recovery for this investment, the Commission should not approve an increase to PGE's 2017 NVPC. Given that

PGE finds a positive net percent value for this investment, PGE should structure cost recovery of the project so that customers experience a portion of the gains in every year. This would result in lower power costs for every year of the Proposed Investment.

Q. Given the analysis you have presented what is your proposal?

A. I propose that the Commission exclude costs of the Proposed Investment from PGE's NVPC and deny PGE's request for approval of an AI Agreement with PGGS, and deny PGE's request to waive the rule requiring that transactions pursuant to AI agreements be priced at lower of cost or market. I also recommend that the Commission decline to adopt PGE's proposed hedging guidelines.

Q. If the Company continues with the Proposed Investment do you have any recommendations for rate recovery?

A. Yes. If PGE executes the Proposed Investments, PGE intends to also sign a long term gas supply contract with its new affiliate, PGGS.[11] Rather than a cost of service contract, the annual contract price should be shaped so that there is no inter-temporal cost shifting. The price should also be fixed so that the contract results in NPV gas costs $4 million below what would be achieved with the current forward price curve. A fixed price contract will prevent ratepayers from bearing the burden of any incorrect analysis in PGE's proposal. However, a fixed price contract does not protect customers from cost of capital impacts of the proposed investment. Even after the fact, these

[11] See PGE/100, Tinker – Sims/19, lines 19 and 20.

impacts would be difficult to measure. Parties should work together to identify a way to prevent customers from paying any cost of capital increases related to the Proposed Investment.

Q. Does this conclude your rebuttal testimony?

A. Yes.