Exh. JLB-28T
Dockets UE-190529 and UG-190530
UE-190274/UG-190275 (*consolidated*)
Witness: Jason L. Ball

BEFORE THE WASHINGTON
UTILITIES AND TRANSPORTATION COMMISSION

WASHINGTON UTILITIES AND TRANSPORTATION COMMISSION, **Complainant,** **v.** **PUGET SOUND ENERGY,** **Respondent.**	**DOCKETS UE-190529 and UG-190530 *(Consolidated)***
In the Matter of the Petition of **PUGET SOUND ENERGY** **For an Order Authorizing Deferral Accounting and Ratemaking Treatment for Short-life UT/Technology Investment**	**DOCKETS UE-190274 and UG-190275 (*consolidated*)**

CROSS-ANSWERING TESTIMONY OF

Jason L. Ball

STAFF OF
WASHINGTON UTILITIES AND
TRANSPORTATION COMMISSION

Natural Gas Line Extensions
Cost of Service Methods

January 15, 2020

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I. INTRODUCTION

Q. Please state your name.

A. My name is Jason L. Ball.

Q. Are you the same Jason L. Ball who filed response testimony with the Washington Utilities and Transportation Commission (Commission) on behalf of Commission Staff (Staff) on November 22, 2019?

A. Yes.

II. SCOPE AND SUMMARY OF TESTIMONY

Q. Please summarize the scope of your testimony.

A. I respond generally to the arguments of Northwest Energy Coalition (NWEC) witness Amy E. Wheeless regarding natural gas line extensions and Federal Executive Agencies (FEA) witness Ali Al-Jabir regarding cost of service.

Q. Please provide an overview of your response to NWEC witness Amy Wheeless' testimony.

A. I recommend the Commission reject NWEC's proposal to modify the margin allowance calculation for natural gas line extensions. In doing so I provide several corrections to NWEC's misrepresentation of the history of margin allowances

calculations, analyze NWEC's proposed policy discussion, and offer an alternative way for the Commission to consider NWEC's recommendations.

Q. Please provide an overview of your response to FEA witness Al-Jabir's testimony.

A. FEA proposes to classify demand and energy related costs using a 4-Coincident Peak method. I recommend the Commission reject FEA's proposed cost of service study since the ongoing rulemaking into cost of service studies is actively addressing the classification of demand and energy related costs.

III. MARGIN ALLOWANCES FOR NATURAL GAS LINE EXTENSIONS

Q. Please summarize the testimony of NWEC regarding margin allowances for natural gas line extensions.

A. First, NWEC discusses the history of margin allowances related to natural gas line extensions with particular focus on the Perpetual Net Present Value (PNPV) methodology. Second, NWEC summarizes natural gas usage in PSE's service territory. Third, NWEC links the history of the PNPV method and overall gas usage to PSE "aggressively expanding the natural gas customer base" and "incentivizing switching from electric to natural gas."[1]

[1] Wheeless, Exh. AEW-1T at 15:17-19.

Q. Based on this testimony, what are NWEC's recommendations?

A. NWEC recommends that the Commission require PSE to reduce natural gas margin allowances and restore the previous methodology for calculating those allowances, known as the Facilities Investment Analysis (FIA) model. NWEC also recommends the Commission "re-open UG-143616 or open a new collaborative docket."[2]

A. Staff's response to NWEC's Recommendations

Q. Should PSE use the FIA model to determine natural gas line extension margin allowances?

A. No. The FIA model is a complex, assumption driven calculation that treats customers inequitably based on highly variable numbers. As I testify to in more detail below, Staff continues to support the PNPV method and recommends that the Commission continue to allow PSE to use it.

Q. Should the Commission "re-open UG-143616 or open a new collaborative docket?"[3]

A. No. UG-143616 is still open. I recommend the Commission close that docket because questions regarding natural gas infrastructure expansion can be addressed through other available processes. PSE's Natural Gas Technical Advisory Group is well equipped to discuss questions related to the "future viability of natural gas

[2] *Id.* at 20:17-18.
[3] *Id.*

infrastructure, how to adequately consider whether investments will remain used/useful over the life of assets, and other related issues."[4] No "new collaborative docket" is needed. Indeed, NWEC has already "raised concerns in various venues."[5]

B. The History of Margin Allowances and Natural Gas Line Extensions

Q. Do you concur with NWEC's recitation of facts regarding the history of the Commission's consideration of natural gas margin allowances in Washington?

A. No. NWEC's testimony omits information about the reason for adopting the PNPV method and misrepresents the purpose of Commission's investigation of natural gas distribution infrastructure expansion in Docket UG-143616.

Q. What information does NWEC omit about the reasons for adopting the PNPV method?

A. NWEC claims to "not know the Company's motivations for requesting the change" to the PNPV method for calculating margin allowances .[6] However, as Staff explained to the Commission at the time of the methodological change, PSE switched to the PNPV method to simplify its tariff structure and make the relevant calculations easier to understand, perform, and apply. The PNPV method

[4] *Id.* at 21:1-3.
[5] Ball, Exh. No. JLB-31 at 3.
[6] *Id.* at 5:3.

accomplished this task while ensuring that the line extension allowances remained economically justified.[7]

Q. How does NWEC misrepresent the purpose of Commission's investigation of natural gas distribution infrastructure expansion in Docket UG-143616?

A. NWEC claims that the Commission did not issue "guidance regarding the need and implementation for natural gas distribution infrastructure expansion."[8] This is not an accurate statement. This docket was an investigation of the opportunity provided by low natural gas prices to address environmental concerns and promote economic development:

> During the workshop, participants, including local natural gas distribution companies, identified that natural gas production in the United States has increased significantly and that the cost of natural gas has decreased. **These factors create an opportunity to address environmental concerns** associated with emissions from oil furnaces and wood burning stoves, **and promote economic development,** by expanding natural gas service to areas not currently served by natural gas.
>
> Participants identified a number of strategies to address these concerns, including reviewing and revising natural gas line extension tariffs, and developing incentives for expanding natural gas distribution service. Participants also identified the costs of local permits and fees for street infrastructure as disincentives for customers investing in a natural gas connection to their residence or business. (emphasis added)[9]

NWEC represents UG-143616 as an investigation of the expansion of natural gas infrastructure when in actuality incentives to expand natural gas infrastructure were

[7] Ball, Exh. JLB-29.
[8] Wheeless, Exh. AEW-1T at 7:5-7.
[9] Notice of Opportunity to File Written Comments, UG-143616 (December 15, 2014) at 1.

an outcome of the investigation, not its cause. NWEC has reversed the causal order of the docket to argue that margin allowances, and in particular margin allowances calculated using the PNPV method, represent utility attempts to directly expand natural gas infrastructure without a clear mandate to do so.

Q. Why is it important to understand the purpose of the investigation in UG-143616?

A. As I discuss below, there are three policy questions that are the essence of NWEC's testimony. The correct history of natural gas line extensions and margin allowances is important to understanding and answering these questions.

Q. Are there any other examples of missing or incomplete facts in NWEC's testimony?

A. Yes. NWEC's testimony also discusses Avista's LEAP filing in Docket UG-152394, but leaves out critical details from that filing. Specifically, Avista included more than just a change to the margin allowance calculation; it proposed that any remaining margin allowance from a line extension could be used to offset a customer's purchase of an energy efficient natural gas furnace.[10] This fundamentally altered margin allowances by treating them as a vehicle for energy policy. This was noted in the Staff memo reviewing the program in 2018, which specifically called out the use of excess margin allowance to finance energy efficient appliances as being out of

[10] Ball, Exh. JLB-30 at 1.

step with the evolution of greenhouse gas emissions policy.[11] Nevertheless, NWEC inappropriately equates PSE's use of the PNPV method to Avista's broader, policy oriented LEAP pilot.

NWEC also asserts that the "pilot for the PNPV methodology change was never fully evaluated before it was made permanent for Avista, Puget Sound Energy, and Cascade Natural Gas."[12] To be clear, no such pilot has ever existed for PSE or Cascade. The only pilot that ever existed regarding natural gas line extensions was Avista's LEAP pilot which, as I discussed above, included more than just updated margin allowance calculations.

C. Policy Questions related to Margin Allowances for Natural Gas Line Extensions

Q. What policy rationale does NWEC provide in support of its recommendation to reduce margin allowances for natural gas line extensions?

A. NWEC provides several pages of testimony on the social and economic context for margin allowances related to natural gas line extension. In short, NWEC argues that:

- The environmental impact of natural gas line extensions is not recognized in the PNPV method.[13]

[11] *Id.* at n. 16.
[12] *Id.* at 21:3-5.
[13] Wheeless, Exh. AEW-1T at 17:15-19:2 and 20:5-9.

- The price risk of natural gas line extensions has been increasing.[14]
- The impacts to customers of providing margin allowances has not been quantified.[15]

Q. Does Staff recommend the Commission continue to rely on the PNPV method?

A. Yes. Staff provided its rationale for supporting the PNPV method in its 2017 memo in UG-161268. That rationale remains equally valid today:

> The PNPV method it simpler to calculate and relies on information from recent rate cases. The anticipated revenue from the customer divided by the authorized rate of return, results in the net present value of the customer's presence on the system. This metric is a good proxy for the financial break-even point of adding new customers to the system.
>
> PSE's current line extension allowance methodology is far more complex to calculate. Under the current Rule No. 7, margin allowances are calculated using a discounted cash flow calculation contained in an excel spreadsheet. Referred to as the "Facilities Investment Analysis" or FIA Model, certain assumptions around the annual therms (estimated using square footage for residential customers) produces a semi-unique margin allowance for each customer. Switching to the PNPV method simplifies this process and clarifies line extension policies for new customers. (footnotes omitted)[16]

Q. If the Commission wishes to entertain the policy issues raised by NWEC, how should these policies issues be addressed?

A. NWEC's testimony is essentially three specific questions regarding margin allowances. If the Commission wishes to engage with NWEC, answering these

[14] *Id.* at 15:20-17:14 and 19:4-20:5.
[15] *Id.* at 14:1-12.
[16] Ball, Exh. JLB-29 at 2.

questions should resolve the issues raised by NWEC and provide general policy guidance to other utilities. These questions are:

1. What is the purpose of a margin allowance related to a line extension?
2. What types of risk, if any, should be reflected in the calculation of a margin allowance?
3. What impacts do margin allowances have on existing customers?

Q. Could these questions apply to electric as well as natural gas margin allowances?

A. Yes, although NWEC limits its discussion and recommendations to natural gas margin allowances, these questions are indifferent to the type of service; meaning that they apply equally to both electric and natural gas businesses. While the specific answers may differ, care should be taken to avoid providing preference (a form of subsidy) to one type of service over another.

1. Purpose of Margin Allowances

Q. Regarding the first question, how have margin allowances been treated historically?

A. Margin allowances have been treated as a form of cost-sharing between existing rate payers and new ones; this cost-sharing is based in the principles of cost causation and benefit follows burden.[17] For example, if a new customer is expected to cover

[17] For a more detailed explanation of these principles see Ball, Exh. JLB-2.

100 percent of the costs of their connection to the existing system, then existing customers receive almost all of the benefit that comes from spreading fixed system costs over more customers. On the other hand, if a new customer receives their entire line extension for free, regardless of the cost, then existing customers are harmed when the new customer's additional revenue is not sufficient to reduce costs for the system as a whole.

Q. What is the appropriate level of cost-sharing for a line extension between new customers and existing ones?

A. The line extension allowance should be calculated such that the cost to existing customers of providing the allowance is no more than the benefit they receive from the new customer. The PNPV method accomplishes this. It represents the level of revenues that can be expected from a new customer, discounted over time. Anything less than this amount represents a subsidy to existing customers. Anything more than this amount represents a subsidy to new customers.

Q. Does NWEC offer a different purpose for margin allowances?

A. No.

Q. What other policy purposes could the Commission consider for margin allowances?

A. If the Commission decides margin allowances should accomplishing other purposes, I would suggest drawing on the work done in the investigation of natural gas

infrastructure expansion, Docket UG-143616. This work was summarized by Staff previously as four alternative policy goals:[18]

> Policy 1: Reducing greenhouse gas emissions.
>
> Policy 2: Addressing environmental concerns associated with emissions from oil furnaces and wood burning stoves.
>
> Policy 3: Promoting economic development by expanding service to areas not currently served by natural gas.
>
> Policy 4: Promoting energy efficiency.

2. Risks of Margin Allowances

Q. What risks exist with the calculation of margin allowances for line extensions?

A. NWEC discusses several risks related to the "economics and political viability of long-term support for natural gas service."[19] Specifically, NWEC addresses the volatility in natural gas prices, new technologies, environmental impacts, pricing for carbon emissions, and the potential banning of natural gas in general.[20] With regard to the PNPV method specifically, NWEC points out that the PNPV method assumes that natural gas customers do not disconnect their service.[21]

Q. Is it appropriate to rely on the PNPV method and assume that customers do not disconnect from the natural gas system?

[18] Ball, Exh. JLB-30.
[19] Wheeless, Exh. AEW-1T at 19:10-11.
[20] *Id.* at 15:20-19:2.
[21] *Id.* at 19:5-9.

A. Based on historical data, yes. Between 2010 and 2019 there have been 10,820 retirement work orders that appear permanent or about 1,082 per year.[22] In comparison, natural gas customer growth from 2010 to 2019 averaged 9,944 new customers *per year*. On average, customer growth in one year is almost equal to the total number of potential disconnects that occurred over a 10 year period.

Q. How can the Commission incorporate the risks discussed by NWEC into margin extension allowances?

A. There are at least three ways to address the economic and climate change risks identified by NWEC:

1. Incorporate the social cost of carbon into the margin allowance method for both electric and natural gas. This would treat the two fuels on equal footing by pricing into the calculation an externality that is otherwise not captured in overall rates.
2. Wait for the legislature to direct utilities to include some form of carbon price in overall rates. Since rates for both electric and natural gas would theoretically be treated equally, the PNPV would continue to reflect the balance between existing customers and new ones.
3. Adjust the margin allowance calculation to use a shorter timeframe. The PNPV method assumes "infinite" margin discounted through time. This is as an algebraic simplification of the Net Present Value formula:

[22] According to PSE service disconnects do not necessarily indicate that service will not be reconnected. Rather it simply indicates services have ceased at that location. Stand-alone work orders for reconnection of services at these locations may exist but may not necessarily be linked to the original disconnect.

$$\sum_{n=1} \frac{D}{(1+r)^n} = \frac{D}{(1+r)^1} + \frac{D}{(1+r)^2} \cdots + \frac{D}{(1+r)^n}$$

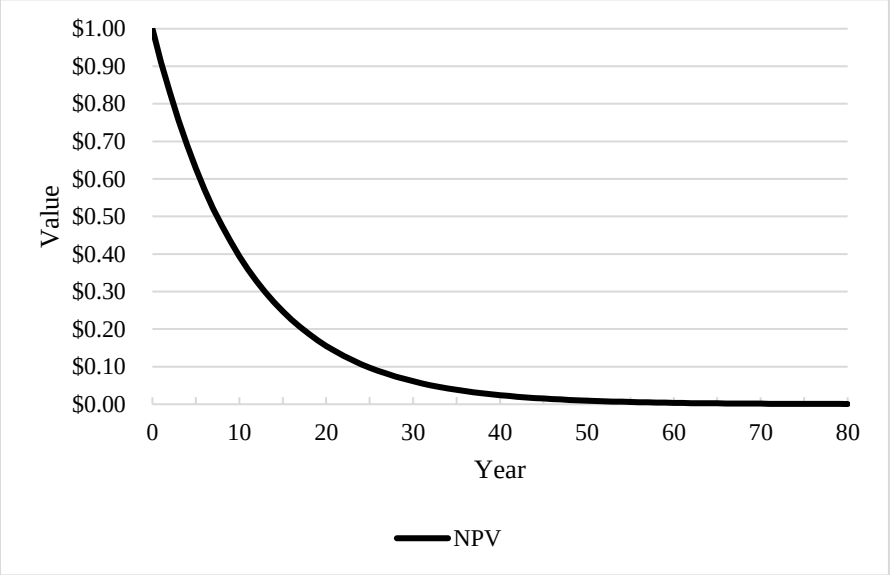
Where: $\lim_{n\to\infty} \sum \frac{D}{(1+r)^n} = \frac{D}{r}$

The first formula represents discounted cash-flow and can be adjusted to use whatever timeframe the Commission determines appropriate.

Q. How can the Commission calculate potential timeframes to use in a discounted cash-flow method?

A. It may be helpful here to identify a range of timeframes and then gauge the appropriateness of using specific ones. The lower end of a timeframe range is one, which would result in a margin allowance equal to one year's worth of revenue. The upper end of an allowance would then be the PNPV method, which is "infinite" time. However, "infinity" is not really useful in this context and can be simplified. Graphically, the PNPV method is represented as an asymptotic curve approaching zero.

Figure 1 - Net Present Value Curve



The slope, or how quickly this number approaches zero, is principally based on the discount rate used. The PNPV formula relies on PSE's currently authorized pre-tax cost of capital and results in 99.9% of the margin being recovered after 75 years. A higher pre-tax cost of capital will reduce this number further. For practical purposes, this can be thought of as the upper-limit on how long customers must remain on PSE's system to account for their margin allowance.

Q. How could the Commission evaluate different timeframes?

A. Choosing a number closer to one would indicate increasing risk of significantly reduced or eliminated gas usage. Thus the margin allowance should be lower to hold existing customers harmless against a new customers reduced revenue potential. Choosing a number closer to 75 years would indicate less perceived risk, and thus

margin allowances should be higher. The table below provides some timeframes and different ways of thinking about them.

Table 1 - Comparison of Timelines for Residential Margin Allowances Using Discounted Cash-Flow

Time Frame	Margin Allowance	
Current Margin Allowance	*$4,328*	
1 Year	$400	Reflecting High Risk of Lost Margin Due to New Natural Gas Hook-ups
10 Years	$2,539	
20 Years	$3,178	
30 Years	$3,853	Half Way between the Current Method and No Margin Allowance
40 Years	$4,202	
50 Years	$4,276	
60 Years	$4,306	
75 Years	$4,322	Approximately equal to the PNPV method

3. Gauging the Impact of Margin Allowances on Customers

Q. Has PSE quantified the impact on existing customers of margin allowances that use the PNPV method?

A. No. Through discovery, PSE responded to NWEC's inquiries about the impacts of the changes to margin allowances on existing customers. PSE responded that it does not have the data.

Q. How would this data be useful in setting margin allowances for line extensions?

A. Regardless of the purpose of margin allowances, rates should not result in significant cross-customer subsidization. In the case of margin allowances, this subsidization could occur between new customers and existing ones. Quantifying the impact of margin allowances would ensure a complete picture is available to the Commission before determining what an appropriate margin allowance should be.

Q. Is it possible for PSE to produce this information?

A. Possibly.[23] To determine the impact on existing customers from margin allowances, PSE would need to track new customers who receive a margin allowance and compare their actual revenue to the amount included in the margin allowance calculation. In aggregate, this would show whether new customers are generating the appropriate level of revenue to cover their line extension allowances.

IV. FEA RECOMMENDATIONS ON COST OF SERVICE

Q. Please summarize the testimony provided by FEA witness Al-Jabir.

A. FEA proposes a cost of service study (COSS) and recommends that PSE classify demand and energy related costs using a 4-Coincident Peak (4 CP) method.

[23] Ball, Exh. No. JLB-31 at 4.

Q. Does you support FEA's proposed COSS?

A. No. As I testified previously, the Company's COSS can be considered directionally accurate and can be used to set rates for the purposes of this case. Proposals for new cost classification methodologies, such as FEA's proposed use of a 4 CP method, are more appropriately addressed in the cost of service rulemaking, Docket UE-170002.

Q. Has FEA attended any of the workshops held in the cost-of-service rulemaking docket?

A. No.

Q. Has FEA submitted comments in the cost-of-service rulemaking docket?

A. No.

Q. Are there other reasons for the Commission to reject the COSS presented by FEA?

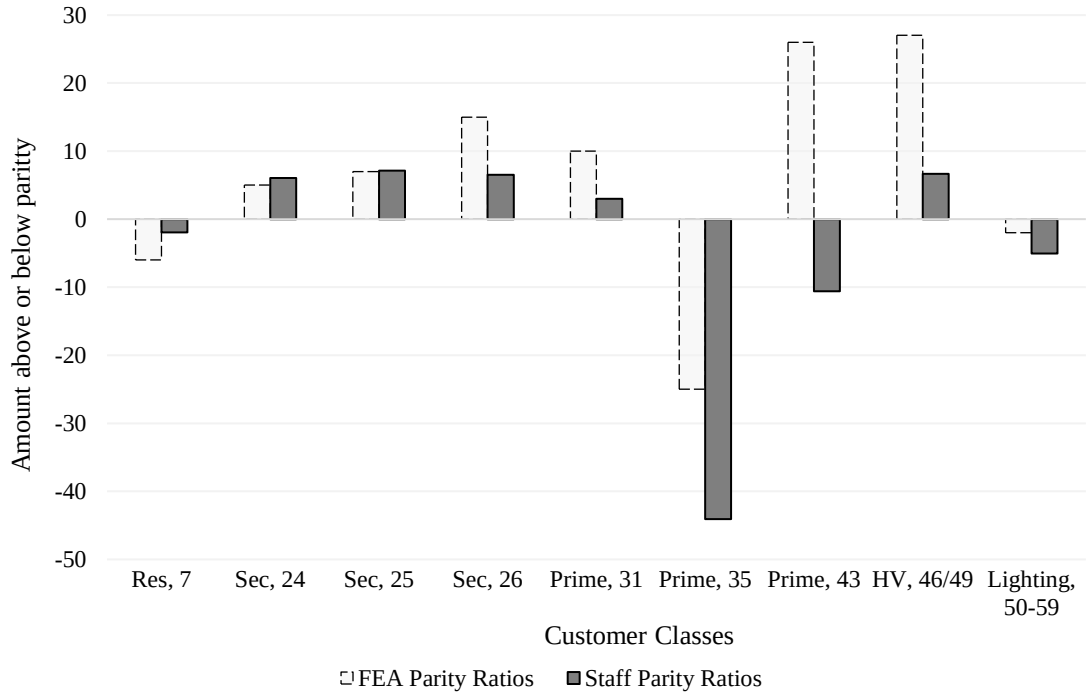
A. Yes. FEA testified that the "4 CP method provides a much better reflection of cost causation than classification or allocation methods that utilize energy usage to any significant degree."[24] The Commission has repeatedly rejected FEA's argument, which effectively states that energy usage is unrelated to cost causation. The Commission should again reject this assertion.

Further, not only does FEA's proposal ignores a key element of power generation, that kilowatt-hours are being provided, but it has the convenient effect of

[24] Al-Jabir, Exh. AZA-1T at 2:23-25.

shifting a large amount of costs away from schedules which FEA represents. As the table below shows the parity ratios FEA proposes are significantly different from PSE's. For schedule 43 in particular the parity ratio swings 37 points from 0.89 to 1.26.

Figure 2 - Comparison of PSE and FEA Parity Ratios



Q. Does this conclude your testimony?

A. Yes.