ORDER NO. 19-252

ENTERED Jul 30 2019

BEFORE THE PUBLIC UTILITY COMMISSION

OF OREGON

UM 1893

In the Matter of PUBLIC UTILITY COMMISSION OF OREGON, Report on Findings from Energy Efficiency Avoided Cost Workshops and Recommendations for Data Collection.	ORDER

DISPOSITION: STAFF'S RECOMMENDATION ADOPTED

At its public meeting on July 30, 2019, the Public Utility Commission of Oregon adopted Staff's recommendation in this matter. The Staff Report with the recommendation is attached as Appendix A.

BY THE COMMISSION:

Nolan Moser
Chief Administrative Law Judge

A party may request rehearing or reconsideration of this order under ORS 756.561. A request for rehearing or reconsideration must be filed with the Commission within 60 days of the date of service of this order. The request must comply with the requirements in OAR 860-001-0720. A copy of the request must also be served on each party to the proceedings as provided in OAR 860-001-0180(2). A party may appeal this order by filing a petition for review with the Circuit Court for Marion County in compliance with ORS 183.484.

ITEM NO. 1

PUBLIC UTILITY COMMISSION OF OREGON
STAFF REPORT
PUBLIC MEETING DATE: July 30, 2019

REGULAR X CONSENT ____ EFFECTIVE DATE July 31, 2019

DATE: July 22, 2019

TO: Public Utility Commission

FROM: Anna Kim

THROUGH: Jason Eisdorfer and JP Batmale **SIGNED**

SUBJECT: OREGON PUBLIC UTILITY COMMISSION STAFF:
(Docket No. UM 1893) Report on findings from energy efficiency avoided cost workshops and recommendations for data collection.

STAFF RECOMMENDATION:

The Public Utility Commission of Oregon (Commission) should approve the attached reporting forms to collect energy efficiency avoided cost data.

DISCUSSION:

Issue

Whether to approve the attached reporting forms to collect energy efficiency avoided cost data.

Applicable Law

Effective May 22, 2019, the Commission adopted OAR 860-030-0011 and other associated changes, formalizing the process of collecting and reviewing energy efficiency avoided cost data from energy utilities before the data is used by The Energy Trust of Oregon (Energy Trust).[1] Relevant here, OAR 860-030-0011(1) requires an energy utility to submit its data for calculation of energy efficiency avoided costs in the manner and method specified in a Commission-approved reporting form, which will then be available on the Commission's website.

[1] See *In the Matter of Rulemaking to Adopt Energy Efficiency Avoided Cost Reporting Rules,* Docket No. AR 621, Order No. 19-177 (May 22, 2019).

The attached forms are the initial forms proposed for adoption. Once adopted, the form must be submitted by October 15th of each year, and subsequent changes approved by the Commission will take effect no less than 60 days following approval. See OAR 860-030-0011(3).

Analysis

In Section I, this memo presents the energy efficiency avoided cost data collection forms for Commission review and also serves as an update on activities in the UM 1893 docket. In Section II, this memo provides an update on activities in this docket. The Commission requested status updates twice a year on this docket. This document serves as the second such update since that order.[2] The status update will cover the voluntary data review process conducted by Staff, energy efficiency avoided cost topics discussed in 2019, development of the data collection forms prepared for Commission review, and the proposed timeline for future work.

I. Reporting Form Development and Approval

In collaboration with Energy Trust and with stakeholder feedback, Staff developed the attached data reporting forms. Originally, the energy utilities provided drafts of these forms in the fall of 2018. Staff then worked with Energy Trust to modify these forms for Energy Trust's use with ongoing input from stakeholders. These forms were used in the voluntary review process described below.

As a result of the voluntary review, Staff worked with Energy Trust to propose the following changes to the forms before adopting the forms for use on an annual basis:

- Expanded instructions for citing data.
- Added instructions for clarification on how dollars are treated (real vs. nominal).
- Added the ability to submit alternate sets of data in the same document.
- Removed the ability to submit end-use specific natural gas data (see below).
- Introduced the possibility of submitting electric "carbon compliance costs" (see below).
- Improved clarity of instructions throughout the forms.

Stakeholders reviewed these documents and proposed thoughtful and specific suggestions including written comments Staff received on July 15, 2019 from three

[2] See In the Matter of the Public Utility Commission of Oregon's Investigation into the Methodology and Process for Developing Avoided Costs Used in Energy Efficiency Cost-Effectiveness Tests, Docket No. UM 1893, Order No. 18-077 (February 27, 2018) page 1.

utilities. In response, Staff addressed all comments and worked with Energy Trust to adjust the data reporting forms thusly:

- Updated the timeframe for electric data requested.
- Removed the proposed electric carbon value fields until further review of the topic.
- Included both peak day and peak hour fields for avoided natural gas distribution capacity costs.
- Provided natural gas utilities with options to submit both bottom-up or top-down avoided distribution capacity costs.
- Added instructions on how to submit the forms.
- Other edits for clarity and consistency.

Staff attempted to accommodate different approaches to calculating natural gas avoided distribution capacity costs. Northwest Natural pioneered a bottom-up approach to calculating these costs by calculating distribution demands at an end-use level whereas the other natural gas utilities use a top-down approach starting at the system level. Energy Trust is able to accommodate both approaches. The natural gas data reporting form was modified accordingly.

There remain some topics outstanding for future discussion in UM 1893. The proposed electric data reporting form includes fields for 12x24 matrices of loss-of-load probability (LOLP). This data is not currently used by Energy Trust. The data is being collected to inform future conversations on the possibility of moving to this level of granularity. Staff is also willing to discuss the possibility of representing transmission costs and distribution costs in a similar way and will recommend modifying the data reporting forms in the future, if needed.

Similarly, RPS compliance costs are also being collected to inform future discussions on the topic. Electric carbon compliance costs may also be revisited in the future. Finally, there is the possibility of exploring natural gas end-use load profiles in the future. Staff will work with stakeholders in Q4 2019 to determine which topics to explore in 2020 in Docket No. UM 1893.

In accordance with OAR 860-030-0011, Staff presents these forms in advance of the filing deadline on October 15, at which point Staff will begin reviewing the data submitted. Staff will hold a workshop in late October or early November to share the submitted data and provide an opportunity for public comment. Staff plans to present findings and recommendations to the Commission at the December 3, 2019, Public Meeting, so that data can be approved before the deadline of 60 days after submission. Energy Trust will then use the approved data for their 2021 budget. Staff will meet with

stakeholders to establish goals for UM 1893 in 2020 and work through additional topics as needed.

II. Activity Update for UM 1893
Voluntary Review

After the Commission issued Order No. 18-077 in Docket No. UM 1893, Staff requested that the energy utilities working with Energy Trust provide energy efficiency avoided cost data for a voluntary review process so that Staff could test the process and provide a review of the data for Energy Trust's use for their 2020 budget. Utilities submitted data collection forms by December 1, 2018. Of the five utilities that submitted data, two submitted at least one alternative set of data for Staff's review. Over the course of the next three months, Staff reviewed the submitted data and had several email conversations and phone meetings with Energy Trust and with individual utilities to understand the data that had been submitted.

As part of this discussion and review process, Staff conducted a workshop on December 10, 2018, where Energy Trust presented how the avoided cost data is used within their existing process to determine the cost-effectiveness of energy efficiency measures. Staff also answered questions about the data collection and review process. At this time, stakeholders were interested in understanding how Staff will determine which set of data to use when alternate options were available. As this was a new process, Staff needed more time to study the provided examples of alternative submissions.

Staff held a second workshop on February 4, 2019, where Staff presented initial draft results based on the data review up to that point and the rationale behind preliminary decisions between alternate sets of data. At this second workshop, Energy Trust also presented a comparison between the data used for the 2019 Energy Trust budget with the proposed new data, which allowed stakeholders to see how the inputs differ and the estimated impacts of using the new data.

Energy Trust provided comparisons between individual utility submissions and also a combined comparison between the preliminary results and the previous year's results. This is the first time stakeholders had the opportunity to view all of the individual inputs that went into the Energy Trust's calculations of energy efficiency avoided costs together and to see how the reported data directly impacted the blended avoided cost. During the workshop, stakeholders identified specific data that would warrant additional review. This public review helped further the review process so that Staff could approve data for Energy Trust's use.

In terms of process, several stakeholders requested more opportunities for review and feedback during the formal data review. Staff wants to provide as much opportunity for public input as possible during the 60 day review period. In collaboration with Energy Trust, Staff will hold a stakeholder workshop soon after the data submission deadline to provide an initial look at the submitted data and to give stakeholders the maximum amount of time to review and provide comment.

Avoided Cost Topics 2019

In addition to testing the process for updating avoided costs, Staff continued to work with Energy Trust and stakeholders to improve elements of the avoided cost methodology for energy efficiency.

Changes were made to the seasonality assumptions for avoided electric generation capacity costs. These changes were based on findings in 2018 around the utility's generation capacity needs and Energy Trust's avoided cost calculation methodology.

Previously, it was assumed that the electric utilities had winter peaking loads, and thus winter-based, generation capacity costs Energy Trust will now incorporate seasonal considerations in a way that reflects current utility operations and builds upon Energy Trust's improved computing capabilities to apply the following new assumptions:

- 100 percent summer generation capacity needs for Pacific Power
- An even split between summer and winter generating capacity needs for PGE

The proposed data reporting forms reflect these assumptions. Staff is also working with Energy Trust to expand Energy Trust's capability to incorporate more granular demand data in the future.

In the course of discussing seasonality implications for electric generating capacity in 2018, stakeholders suggested exploring additional refinements to transmission and distribution calculations. Staff held a third workshop on April 12, 2019, and a fourth on July 3, 2019, to explore the following topics:

1. The appropriateness and feasibility of applying seasonality to avoided electric transmission capacity costs and avoided distribution capacity costs.
2. The appropriateness and feasibility of calculating avoided natural gas distribution system costs for the peak hour instead of the peak day.

For the first topic, Staff discussed the possibility of applying seasonality to avoided electric transmission and distribution capacity costs in the April 12, 2019, workshop. Staff acknowledges that electric needs in a system can shift between and within

seasons over time, and the needs for generating capacity, transmission capacity, and distribution capacity may change at the seasonal level. Staff determined that the topic warranted further conversation.

Staff asked PGE to present information on their current process for calculating transmission and distribution capacity costs at the July 3, 2019, workshop. Based on PGE's presentation and feedback provided by stakeholders during these two workshops, Staff believes that it is both appropriate and feasible to apply seasonality to avoided electric transmission and distribution capacity costs. Energy Trust is currently capable of incorporating seasonality for transmission and for distribution at the same granularity as with generating capacity costs and will incorporate cost estimates for both summer and winter. The proposed data collection forms reflect this process.

For the second topic, Staff discussed the possibility of calculating avoided natural gas distribution capacity costs at the peak system hour rather than the peak system day in the April 12, 2019, workshop. Natural gas deliveries are typically scheduled at a daily level. Consistent with the way fuel is scheduled, resource planners planned for long-term resource needs to meet system needs at the daily level. Meanwhile, teams responsible for planning distribution capacity would plan long-term distribution system needs to meet the instantaneous peak. As integration in planning increases between supply and distribution, there is a possibility of increasing the temporal granularity of energy efficiency impacts for natural gas utilities. Staff determined that the topic warranted further conversation.

Staff asked Cascade Natural Gas to present information on their current status for calculating distribution capacity costs at the system peak at the July 3, 2019, workshop. Based on Cascade's presentation and feedback from stakeholders during these two workshops, Staff believes that it is both appropriate and feasible to incorporate avoided natural gas distribution capacity costs for the peak hour. However, the three natural gas utilities working with Energy Trust are at different stages of developing methods to calculate these costs. As utilities work through the IRP process, these calculations may take 2-4 years to create and complete review through that process. Staff wishes to continue exploring the implications of peak day and peak hour estimates for Energy Trust's use. For these reasons, Staff plans to continue collecting distribution capacity peak day costs and also begin collect peak hour costs as more data becomes available. The proposed data reporting forms reflect this process.

Timeline after Submission of Reporting Forms in 2019

As noted above, Staff wants to provide as much opportunity for public input as possible during the review period following submission of the October 15th reports. In collaboration with Energy Trust, Staff will hold a stakeholder workshop soon after the

data submission deadline to provide an initial look at the submitted data and to give stakeholders the maximum amount of time to review and provide comment. Staff plans to present findings and recommendations for avoided costs to the Commission at the December 3, 2019, Public Meeting, so that data can be approved by the Commission before the target date of 60 days after submission per OAR 860-030-0013. Energy Trust will then use the approved data for their 2021 budget.

Staff will meet with stakeholders to establish goals for Docket No. UM 1893 in 2020 and work through additional topics as needed. Going forward, Staff's findings and recommendations on energy efficiency avoided cost data will be presented to the Commission for final review within the 60 day review window so that the data can be used by Energy Trust. Staff will present their findings and rationale, and include a comparison to the previous year.

Conclusion

Based on the foregoing, Staff believes the attached data reporting forms are ready for Commission approval. These documents incorporate the findings throughout the UM 1893 process that Staff believes will improve the accuracy and transparency of data used for energy efficiency avoided costs.

Staff has learned from the previous voluntary review of data and has a strategy to review data through the formal process. Staff will return in December 2019 with findings from the first formal review of energy efficiency avoided cost data.

PROPOSED COMMISSION MOTION:

Approve the attached data reporting forms to collect energy efficiency avoided cost data.

REG1 EE AC Data

Energy Efficiency Avoided Cost Submission Template - Electric

Utility Name:	Please Select
Submission Date:	Fill

Instructions and Definitions

<> Please fill out this workbook completely and per the instructions and submit via electronic filing to docket UM 1893. Submissions are due October 15 of each year.
<> Inputs will be reviewed and approved by the OPUC before being sent to the Energy Trust of Oregon for use in Avoided Cost development
<> **Provide as much detail as possible when sourcing** data inputs, including the link to the source (if available), page number and table or graph number
This will increase the efficiency of this process and require less iteration during the OPUC review period
Required pages 1,2,3,4 refer to data presented in the most recently acknowledged IRP, IRP Update, or General Rate Case unless otherwise noted.

1) Global Inputs - IRP

<> Most components of the avoided costs are input into this tab including inflation/discount rates, line losses, risk reduction values, T&D deferral values, and generation deferral values
<> Identify the winter & summer peak periods for Transmission and Distribtution. The Generation LOLP Map will be utilized for generation peak definitions.
<> If necessary, Energy Trust will work with each utility about sector definitions for T&D for which values to provide for Res, Com, and Ind
<> **Ensure that the dollar years of the data inputs match the source** - Energy Trust will inflate to the proper year
<> Please provide the values in the most recently acknowledged IRP

2) Forward Market Prices - IRP

<> Provide forward market price forecast by month for both high load hours and low load hours
<> Please provide the dollar amount of these prices that is associated with carbon costs (or %). If it is a dollar value, this is a subset of the total prices provided - The total forward market prices should be the FULL price, including carbon
<> **Indicate if the forecast is in nominal or real dollars (and what dollar year if real)**
<> Please provide the values in the most recently acknowledged IRP

3) LOLP - IRP

<> Input a 12x24 Loss of Load Probability heat map per the example in the worksheet
<> These will be potentially utilized in future iterations of avoided cost updates pending outcome of UM1893
<> Include heat maps for all days, weekdays only, and weekends only
<> Please provide the values in the most recently acknowledged IRP

4) RPS Compliance - IRP

<> Input RPS compliance costs by year
<> Please provide the values in the most recently acknowledged IRP

1a, 2a, 3a, 4a) Alternative Submissions

<> Use these worksheets to provide alternative values to the most recently acknowledged IRP values
<> Provide a rationale for submitting the alternative values in the box provided at the top of each alternative worksheet
<> If a second set of alternative values is submitted, simply copy the alt tabs necessary and rename to 1b, alt 2 in the tab name

Global Assumptions Inputs				SOURCING				
				Provide as much detail as possible with sourcing including a link. Ensure that dollar years listed here are the same as the source.				
Avoided Cost Element	**Units**	**Value**	**Dollar Year**	**Source**	**Source Page #**	**Table # (if applicable)**	**Source Link or File Name**	**Source Notes**
Inflation Rate	Percent		N/A					
Real Discount Rate	Percent		N/A					
Regional Act Credit	Percent	10.00%	N/A					
Transmission Loss Factor	Percent		N/A					
Distribution Loss Factor, Commercial	Percent		N/A					
Distribution Loss Factor, Industrial	Percent		N/A					
Distribution Loss Factor, Residential	Percent		N/A					
Risk Reduction Value	$/MWh							
Transmission Deferral Credit	$/kW-yr							
Seasonal Capacity Split - Summer	Percent		N/A					
Seasonal Capacity Split - Winter	Percent		N/A					
Summer Peak Period Definition	Month/Day/Hour		N/A					*Day is intended to be weekday or weekend*
Winter Peak Period Definition	Month/Day/Hour		N/A					*Day is intended to be weekday or weekend*
Deficiency start year	Year		N/A					
Distribution Deferral Credit	$/kW-yr							
Seasonal Capacity Split - Summer	Percent		N/A					
Seasonal Capacity Split - Winter	Percent		N/A					
Summer Peak Period Definition	Month/Day/Hour		N/A					*Day is intended to be weekday or weekend*
Winter Peak Period Definition	Month/Day/Hour		N/A					*Day is intended to be weekday or weekend*
Deficiency start year	Year		N/A					
Generation Capacity Credit	$/kW-yr							
Seasonal Capacity Split - Summer	Percent		N/A					
Seasonal Capacity Split - Winter	Percent		N/A					
Deficiency start year	Year		N/A					
RPS Compliance Cost	$/MWh							
Avoided RPS Compliance Obligation	%		N/A					

Forward Price Inputs

Real or Nominal?	
Dollar Year:	
Carbon Prices Additive?	
Carbon Value Units ($/MWh or $/Ton)	
Source and Pg #:	
Source Link or File Name:	
Source Notes:	

NOTES:
Please provide notes as to how this value relates to forward market prices. It can be expressed as a percentage of forward market prices, a set $/MWh, or $/ton. **Please identify the units in the box to the left**

Year	Date	HLH Total ($/MWh)	LLH Total ($/MWh)	HLH Carbon Cost (OR % of HLH Price that accounts for Carbon?)	LLH Carbon Cost (OR % of LLH Price that accounts for Carbon?)
2021	1/1/2021				
2021	2/1/2021				
2021	3/1/2021				
2021	4/1/2021				
2021	5/1/2021				
2021	6/1/2021				
2021	7/1/2021				
2021	8/1/2021				
2021	9/1/2021				
2021	10/1/2021				
2021	11/1/2021				
2021	12/1/2021				
2022	1/1/2022				
2022	2/1/2022				
2022	3/1/2022				
2022	4/1/2022				
2022	5/1/2022				
2022	6/1/2022				
2022	7/1/2022				
2022	8/1/2022				
2022	9/1/2022				
2022	10/1/2022				
2022	11/1/2022				
2022	12/1/2022				
2023	1/1/2023				
2023	2/1/2023				
2023	3/1/2023				
2023	4/1/2023				
2023	5/1/2023				
2023	6/1/2023				
2023	7/1/2023				
2023	8/1/2023				
2023	9/1/2023				
2023	10/1/2023				
2023	11/1/2023				
2023	12/1/2023				
2024	1/1/2024				
2024	2/1/2024				
2024	3/1/2024				
2024	4/1/2024				
2024	5/1/2024				
2024	6/1/2024				
2024	7/1/2024				
2024	8/1/2024				
2024	9/1/2024				
2024	10/1/2024				
2024	11/1/2024				
2024	12/1/2024				
2025	1/1/2025				

Loss of Load Probability Heat Map Input

NOTE: This is utilitized for generation defferals only.
Source and page #:
urce Link or File Name:
Source Notes:

WEEKDAYS & WEEKENDS

Count	31	28	31	30	31	30	31	31	30	31	30	31
Hr Ending	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
3	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
4	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
5	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
6	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
7	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
8	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
9	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
10	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
11	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
12	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
13	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
14	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
15	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
16	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
17	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
18	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
19	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
20	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
21	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
22	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
23	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
24	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

WEEKDAYS ONLY

Count	31	28	31	30	31	30	31	31	30	31	30	31
	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
3	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
4	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
5	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
6	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
7	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
8	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
9	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
10	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
11	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
12	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
13	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
14	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
15	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
16	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
17	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
18	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
19	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
20	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
21	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
22	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
23	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
24	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

EXAMPLE

Count	31	28	31	30	31	30	31	31	30	31	30	31
Hr Ending	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
3	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
4	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
5	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
6	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
7	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
8	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.00	0.00	0.00	0.00	0.00
9	0.00	0.00	0.00	0.00	0.00	0.00	0.03	0.00	0.00	0.00	0.00	0.00
10	0.00	0.00	0.00	0.00	0.00	0.00	0.06	0.00	0.00	0.00	0.00	0.00
11	0.00	0.00	0.00	0.00	0.00	0.01	0.06	0.00	0.00	0.00	0.00	0.00
12	0.00	0.00	0.00	0.00	0.00	0.02	0.07	0.00	0.00	0.00	0.00	0.00
13	0.00	0.00	0.00	0.00	0.00	0.04	0.01	0.01	0.00	0.00	0.00	0.00
14	0.00	0.00	0.00	0.00	0.00	0.06	0.01	0.01	0.00	0.00	0.00	0.00
15	0.00	0.00	0.00	0.00	0.00	0.07	0.01	0.01	0.00	0.00	0.00	0.00
16	0.00	0.00	0.00	0.00	0.00	0.08	0.01	0.01	0.00	0.00	0.00	0.00
17	0.00	0.00	0.00	0.00	0.00	0.05	0.01	0.01	0.00	0.00	0.00	0.00
18	0.00	0.00	0.00	0.00	0.00	0.04	0.03	0.01	0.00	0.00	0.00	0.00
19	0.00	0.00	0.00	0.00	0.00	0.00	0.06	0.01	0.00	0.00	0.00	0.00
20	0.00	0.00	0.00	0.00	0.00	0.00	0.10	0.01	0.00	0.00	0.00	0.00
21	0.00	0.00	0.00	0.00	0.00	0.00	0.03	0.01	0.00	0.00	0.00	0.00
22	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.01	0.00	0.00	0.00	0.00
23	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
24	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

RPS Compliance Inputs IRP

Real or Nominal?	
Dollar Year:	
Source and Pg #:	
Source Link or File Name:	
Source Notes:	

	RPS Compliance Cost ($/MWh)	Avoided RPS Compliance Obligation (%)
2021		
2022		
2023		
2024		
2025		
2026		
2027		
2028		
2029		
2030		
2031		
2032		
2033		
2034		
2035		
2036		
2037		
2038		
2039		
2040		
2041		
2042		
2043		
2044		
2045		
2046		
2047		
2048		
2049		
2050		

Alternative Submissions	Rationale for alternative submission: *Provide an overall rationale for providing alternative values - use the 'Source Notes/Rationale' column to provide more detailed rational for individual inputs.*

Global Assumptions Inputs				SOURCING *Provide as much detail as possible with sourcing including a link. Ensure that dollar years listed here are the same as the source.*				
Avoided Cost Element	**Units**	**Value**	**Dollar Year**	**Source**	**Source Page #**	**Table # (if applicable)**	**Source Link or File Name**	**Source Notes**
Inflation Rate	Percent		N/A					
Real Discount Rate	Percent		N/A					
Regional Act Credit	Percent	10.00%	N/A					
Transmission Loss Factor	Percent		N/A					
Distribution Loss Factor, Commercial	Percent		N/A					
Distribution Loss Factor, Industrial	Percent		N/A					
Distribution Loss Factor, Residential	Percent		N/A					
Risk Reduction Value	$/MWh							
Transmission Deferral Credit	$/kW-yr							
Seasonal Capacity Split - Summer	Percent		N/A					
Seasonal Capacity Split - Winter	Percent		N/A					
Summer Peak Period Definition	Month/Day/Hour		N/A					*Day is intended to be weekday or weekend*
Winter Peak Period Definition	Month/Day/Hour		N/A					*Day is intended to be weekday or weekend*
Deficiency start year	Year		N/A					
Distribution Deferral Credit	$/kW-yr							
Seasonal Capacity Split - Summer	Percent		N/A					
Seasonal Capacity Split - Winter	Percent		N/A					
Summer Peak Period Definition	Month/Day/Hour		N/A					*Day is intended to be weekday or weekend*
Winter Peak Period Definition	Month/Day/Hour		N/A					*Day is intended to be weekday or weekend*
Deficiency start year	Year		N/A					
Generation Capacity Credit	$/kW-yr							
Seasonal Capacity Split - Summer	Percent		N/A					
Seasonal Capacity Split - Winter	Percent		N/A					
Deficiency start year	Year		N/A					
RPS Compliance Cost	$/MWh							
Avoided RPS Compliance Obligation	%		N/A					

Alternative Submissions	Rationale for alternative submission: *Provide an overall rationale for providing alternative values in this box*

Forward Price Inputs

Real or Nominal?	
Dollar Year:	
Carbon Prices Additive?	
Carbon Value Units ($/MWh or $/Ton)	
Source and Pg #:	
Source Link or File Name:	
Source Notes:	

NOTES:
Please provide notes as to how this value relates to forward market prices. It can be expressed as a percentage of forward market prices, a set $/MWh, or $/ton. **Please identify the units in the box to the left**

Year	Date	HLH Total ($/MWh)	LLH Total ($/MWh)	HLH Carbon Cost ($/MWh) (OR % of HLH Price that accounts for Carbon?)	LLH Carbon Cost ($/MWh) (OR % of LLH Price that accounts for Carbon?)
2021	1/1/2021				
2021	2/1/2021				
2021	3/1/2021				
2021	4/1/2021				
2021	5/1/2021				
2021	6/1/2021				
2021	7/1/2021				
2021	8/1/2021				
2021	9/1/2021				
2021	10/1/2021				
2021	11/1/2021				
2021	12/1/2021				
2022	1/1/2022				
2022	2/1/2022				
2022	3/1/2022				
2022	4/1/2022				
2022	5/1/2022				
2022	6/1/2022				
2022	7/1/2022				
2022	8/1/2022				
2022	9/1/2022				
2022	10/1/2022				
2022	11/1/2022				
2022	12/1/2022				
2023	1/1/2023				
2023	2/1/2023				
2023	3/1/2023				
2023	4/1/2023				
2023	5/1/2023				
2023	6/1/2023				
2023	7/1/2023				
2023	8/1/2023				
2023	9/1/2023				
2023	10/1/2023				
2023	11/1/2023				
2023	12/1/2023				
2024	1/1/2024				
2024	2/1/2024				
2024	3/1/2024				
2024	4/1/2024				
2024	5/1/2024				
2024	6/1/2024				
2024	7/1/2024				
2024	8/1/2024				
2024	9/1/2024				
2024	10/1/2024				
2024	11/1/2024				
2024	12/1/2024				

Alternative Submissions	Rationale for alternative submission: *Provide an overall rationale for providing alternative values in this box*

Loss of Load Probability Heat Map Input

NOTE: This is utilitized for generation defferals only.
Source and page #:
urce Link or File Name:
Source Notes:

WEEKDAYS & WEEKENDS

Count	31	28	31	30	31	30	31	31	30	31	30	31
Hr Ending	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
3	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
4	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
5	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
6	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
7	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
8	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
9	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
10	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
11	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
12	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
13	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
14	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
15	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
16	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
17	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
18	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
19	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
20	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
21	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
22	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
23	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
24	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

WEEKDAYS ONLY

Count	31	28	31	30	31	30	31	31	30	31	30	31
	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
3	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
4	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
5	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
6	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
7	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
8	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
9	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
10	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
11	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
12	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
13	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
14	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
15	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
16	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
17	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
18	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
19	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
20	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
21	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
22	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
23	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
24	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

WEEKENDS ONLY

Count	31	28	31	30	31	30	31	31	30	31	30	31
	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
3	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
4	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
5	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
6	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
7	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
8	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
9	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
10	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
11	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
12	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
13	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
14	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
15	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
16	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
17	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
18	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
19	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
20	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
21	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
22	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
23	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
24	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

EXAMPLE

Count	31	28	31	30	31	30	31	31	30	31	30	31
Hr Ending	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
3	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
4	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
5	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
6	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
7	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
8	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.00	0.00	0.00	0.00	0.00
9	0.00	0.00	0.00	0.00	0.00	0.00	0.03	0.00	0.00	0.00	0.00	0.00
10	0.00	0.00	0.00	0.00	0.00	0.00	0.06	0.00	0.00	0.00	0.00	0.00
11	0.00	0.00	0.00	0.00	0.00	0.01	0.06	0.00	0.00	0.00	0.00	0.00
12	0.00	0.00	0.00	0.00	0.00	0.02	0.07	0.00	0.00	0.00	0.00	0.00
13	0.00	0.00	0.00	0.00	0.00	0.04	0.01	0.01	0.00	0.00	0.00	0.00
14	0.00	0.00	0.00	0.00	0.00	0.06	0.01	0.01	0.00	0.00	0.00	0.00
15	0.00	0.00	0.00	0.00	0.00	0.07	0.01	0.01	0.00	0.00	0.00	0.00
16	0.00	0.00	0.00	0.00	0.00	0.08	0.01	0.01	0.00	0.00	0.00	0.00
17	0.00	0.00	0.00	0.00	0.00	0.05	0.01	0.01	0.00	0.00	0.00	0.00
18	0.00	0.00	0.00	0.00	0.00	0.04	0.03	0.01	0.00	0.00	0.00	0.00
19	0.00	0.00	0.00	0.00	0.00	0.00	0.06	0.01	0.00	0.00	0.00	0.00
20	0.00	0.00	0.00	0.00	0.00	0.00	0.10	0.01	0.00	0.00	0.00	0.00
21	0.00	0.00	0.00	0.00	0.00	0.00	0.03	0.01	0.00	0.00	0.00	0.00
22	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.01	0.00	0.00	0.00	0.00
23	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
24	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

Alternative Submissions	**Rationale for alternative submission:** *Provide an overall rationale for providing alternative values in this box*

RPS Compliance Inputs IRP

Real or Nominal?	
Dollar Year:	
Source and Pg #:	
Source Link or File Name:	
Source Notes:	

	RPS Compliance Cost ($/MWh)	Avoided RPS Compliance Obligation (%)
2021		
2022		
2023		
2024		
2025		
2026		
2027		
2028		
2029		
2030		
2031		
2032		
2033		
2034		
2035		
2036		
2037		
2038		
2039		
2040		
2041		
2042		
2043		
2044		
2045		
2046		
2047		
2048		
2049		
2050		

Energy Efficiency Avoided Cost Submission Template - Natural Gas

Utility Name:	Please Select
Submission Date:	Fill

Instructions and Definitions

<> Please fill out this workbook completely and per the instructions and submit via electronic filing to docket UM 1893. Submissions are due October 15 of each year
<> Inputs will be reviewed and approved by the OPUC before being sent to the Energy Trust of Oregon for use in Avoided Cost development
<> **Provide as much detail as possible when sourcing** data inputs, including the link to the source (if available), page number and table or graph number
This will increase the efficiency of this process and require less iteration during the OPUC review period
Required pages 1,2,3,4,5,6 refer to data presented in the most recently acknowledged IRP, IRP Update, or General Rate Case unless otherwise noted.

1) Global Inputs - IRP

<> Standard economic assumptions of the avoided costs are input into this tab, including inflation and discount rates, as well as real dollar year and forecast start year. <> In addition to the standard economic assumptions, please provide the system peak definition of the utility (calendar Month/Day/Hour) and the peak-day/annual load and peak-hour/Annual Load Ratios for the utility system.
<> Note that in tabs 2-6, calendar start year and input table titles are calculated fields that pull from the global input tab, so these must be populated.
<> Ensure that the dollar years of the data inputs match the source - Energy Trust will inflate to the proper year
<> Please provide the values in the most recently acknowledged IRP

2) Commodity and Transport - IRP

<> Provide Commidity and Transport price forecast by month
<> Indicate if the forecast is in nominal or real dollars (if real, dollar value will populate headers from Global Inputs tab)
<> Please provide the values in the most recently acknowledged IRP

3) Environmental Compliance - IRP

<> Provide the $/Metric Ton of CO2 assumed for each year of the forecast
<> Provide the metric ton of CO2/dekatherm assumed for each year of the forecast
<> Column 'F' is a calculated field, which multiplies the $/metric ton of CO2 by the CO2/dekatherm
<> Please provide the values in the most recently acknowledged IRP

4) Infrastructure Capacity - IRP

<> Provide the Supply Infrastructure Capacity Cost in a $/Dth/Day format for each year available of the forecast period
<> Provide the Distribution Infrastructure Capacity Cost in a $/Dth/Day and $/Dth/Hour format for each year available of the forecast period
<> Please provide the values in the most recently acknowledged IRP

5) Risk Reduction - IRP

<> Provide the Risk Reduction value in a $/Dth format if available for each year available of the forecast period
<> The box in cell C7 calculates the levelized net present value of all years of the forecast period. This is used when negative values occur in any year of the forecast period. If the levelized risk reduction value is negative, zero will be assigned as the final value. This is due to the premise that the risk reduction value is meant to be a benefit.
<> Please provide the values in the most recently acknowledged IRP

6) End Use Load Profiles - IRP

<> Provide the Monthly share of annual load for the utility's system by end use, if available.
<> Provide the peak day/annual load and peak hour/annual load ratios by end use, if available.
<> Please provide the values in the most recently acknowledged IRP

1a, 2a, 3a, 4a, 5a, 6a) Alternative Submissions

<> These worksheets provide a location for the utility to present alternative values to the most recently acknowledged IRP values for OPUC review.
<> Submissions in these tabs are not required.
<> Provide a rationale for submitting the alternative values in the box provided at the top of each alternative worksheet.
<> If a second set of alternative values is submitted, simply copy the alt tabs necessary and rename to 1b, alt 2 in the tab name. However, note that in tabs 2-6, calendar start year and input table titles are calculated fields that pull from the global input tab. Either update these formulas or override them.

Global Assumptions Inputs			SOURCING				
			Provide as much detail as possible with sourcing including a link. Ensure that dollar years listed here are the same as the source.				
Avoided Cost Element	**Units**	**Value**	**Source**	**Source Page #**	**Table # (if applicable)**	**Source Link or File Name**	**Source Notes**
Discount Rate (Company's Real after-tax weighted average cost of capital (WACC)	Percent						
Inflation Rate	Percent						
Regional Act Credit	Percent	10.00%	N/A				
Forecast Period Calendar Start Year	Year						
Real Dollar Base Year	Year						
System Peak Definition	Calendar Month/Day/Hour						
System Peak Coincident Day Factor	Peak Day/Annual Load Ratio						
System Peak Coincident Hour Factor	Peak Hour/Annual Load Ratio						

Commodity Price Inputs

Real or Nominal?	
Source and Pg #:	
Source Link or File Name:	
Source Notes:	

Gas Commodity and Transportation/Storage Costs (Real $/Dth)

Year #	Calendar Year	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
1	0												
2	1												
3	2												
4	3												
5	4												
6	5												
7	6												
8	7												
9	8												
10	9												
11	10												
12	11												
13	12												
14	13												
15	14												
16	15												
17	16												
18	17												
19	18												
20	19												
21	20												
22	21												
23	22												
24	23												
25	24												
26	25												
27	26												
28	27												
29	28												
30	29												
31	30												
32	31												
33	32												
34	33												
35	34												
36	35												
37	36												
38	37												
39	38												
40	39												
41	40												
42	41												
43	42												
44	43												
45	44												

Environmental Compliance Cost Inputs

Real or Nominal?	
Source and Pg #:	
Source Link or File Name:	
Source Notes:	

Environmental Compliance Cost

Year #	Calendar Year	Environmental Compliance Cost (Real $/MTCO2e)	Carbon Intesity (MTCO2e/Dth)	Environmental Compliance Cost (Real $/Dth)
1	0			$0.000
2	1			$0.000
3	2			$0.000
4	3			$0.000
5	4			$0.000
6	5			$0.000
7	6			$0.000
8	7			$0.000
9	8			$0.000
10	9			$0.000
11	10			$0.000
12	11			$0.000
13	12			$0.000
14	13			$0.000
15	14			$0.000
16	15			$0.000
17	16			$0.000
18	17			$0.000
19	18			$0.000
20	19			$0.000
21	20			$0.000
22	21			$0.000
23	22			$0.000
24	23			$0.000
25	24			$0.000
26	25			$0.000
27	26			$0.000
28	27			$0.000
29	28			$0.000
30	29			$0.000
31	30			$0.000
32	31			$0.000
33	32			$0.000
34	33			$0.000
35	34			$0.000
36	35			$0.000
37	36			$0.000
38	37			$0.000
39	38			$0.000
40	39			$0.000
41	40			$0.000
42	41			$0.000
43	42			$0.000
44	43			$0.000
45	44			$0.000

Infrastructure Capacity Cost Inputs

Real or Nominal?	
Source and Pg #:	
Source Link or File Name:	
Source Notes:	

Infrastructure Capacity Costs

		Infrastructure Capacity Costs		
Year #	**Calendar Year**	**Supply (Real $/Dth/Day)**	**Distribution Peak DAY (Real $/Dth/Day)**	**Distribution Peak HOUR (Real $/Dth/Hour)**
1	0			
2	1			
3	2			
4	3			
5	4			
6	5			
7	6			
8	7			
9	8			
10	9			
11	10			
12	11			
13	12			
14	13			
15	14			
16	15			
17	16			
18	17			
19	18			
20	19			
21	20			
22	21			
23	22			
24	23			
25	24			
26	25			
27	26			
28	27			
29	28			
30	29			
31	30			
32	31			
33	32			
34	33			
35	34			
36	35			
37	36			
38	37			
39	38			
40	39			
41	40			
42	41			
43	42			
44	43			
45	44			

Risk Reduction Value Inputs

Real or Nominal?	
Source and Pg #:	
Source Link or File Name:	
Source Notes:	

Risk Reduction Value

No Data Entered

= Levelized Risk Reduction Value (for use when negative values occur in any years of the forecast period). If this value is negative, then zero will be assigned as the final value.

Year #	Calendar Year	Risk Reduction Value (Real $/Dth)
1	0	
2	1	
3	2	
4	3	
5	4	
6	5	
7	6	
8	7	
9	8	
10	9	
11	10	
12	11	
13	12	
14	13	
15	14	
16	15	
17	16	
18	17	
19	18	
20	19	

End Use Load Profiles & Peak Day/Hour Ratios

Source and Pg # and/or Table #:	
Source Link or File Name:	
Source Notes:	

End Use Load Profiles	Monthly Share of Normal Weather Annual Load												Peak to Annual Normal Weather Usage Ratios	
End Use	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Peak Day	Peak Hour

Notes:
Energy Trust will work with Utility and OPUC Staff to determine the most appropriate Load Profiles and peak factors to use, whether that is utility specific values or Northwest Power and Conservation Council proxies. In order for utility-specific values to be used, utility staff must review the methodology they used to develop the values with OPUC Staff.

Alternative Submissions	**Rationale for alternative submission:** *Provide an overall rationale for providing alternative values - use the 'Source Notes/Rationale' column to provide more detailed rational for individual inputs.*

Global Assumptions Inputs			SOURCING				
			Provide as much detail as possible with sourcing including a link. Ensure that dollar years listed here are the same as the source.				
Avoided Cost Element	**Units**	**Value**	**Source**	**Source Page #**	**Table # (if applicable)**	**Source Link or File Name**	**Source Notes**
Discount Rate (Company's Real after-tax weighted average cost of capital (WACC)	Percent						
Inflation Rate	Percent						
Regional Act Credit	Percent	10.00%	N/A				
Forecast Period Calendar Start Year	Year	2020					
Real Dollar Base Year	Year	2020					

Alternative Submissions	Rationale for alternative submission: *Provide an overall rationale for providing alternative values using this box*

Commodity Price Inputs

Real or Nominal?	
Source and Pg #:	
Source Link or File Name:	
Source Notes:	

Gas Commodity and Transportation/Storage Costs (Real 2020$/Dth)

Year #	Calendar Year	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
1	2020												
2	2021												
3	2022												
4	2023												
5	2024												
6	2025												
7	2026												
8	2027												
9	2028												
10	2029												
11	2030												
12	2031												
13	2032												
14	2033												
15	2034												
16	2035												
17	2036												
18	2037												
19	2038												
20	2039												
21	2040												
22	2041												
23	2042												
24	2043												
25	2044												
26	2045												
27	2046												
28	2047												
29	2048												
30	2049												
31	2050												
32	2051												
33	2052												
34	2053												
35	2054												
36	2055												
37	2056												
38	2057												
39	2058												
40	2059												
41	2060												
42	2061												
43	2062												
44	2063												
45	2064												

Alternative Submissions	Rationale for alternative submission: *Provide an overall rationale for providing alternative values using this box*

Environmental Compliance Cost Inputs

Real or Nominal?	
Source and Pg #:	
Source Link or File Name:	
Source Notes:	

Environmental Compliance Cost

Year #	Calendar Year	Environmental Compliance Cost (Real 2020$/MTCO2e)	Carbon Intesity (MTCO2e/Dth)	Environmental Compliance Cost (Real 2020$/Dth)
1	2020			$0.000
2	2021			$0.000
3	2022			$0.000
4	2023			$0.000
5	2024			$0.000
6	2025			$0.000
7	2026			$0.000
8	2027			$0.000
9	2028			$0.000
10	2029			$0.000
11	2030			$0.000
12	2031			$0.000
13	2032			$0.000
14	2033			$0.000
15	2034			$0.000
16	2035			$0.000
17	2036			$0.000
18	2037			$0.000
19	2038			$0.000
20	2039			$0.000
21	2040			$0.000
22	2041			$0.000
23	2042			$0.000
24	2043			$0.000
25	2044			$0.000
26	2045			$0.000
27	2046			$0.000
28	2047			$0.000
29	2048			$0.000
30	2049			$0.000
31	2050			$0.000
32	2051			$0.000
33	2052			$0.000
34	2053			$0.000
35	2054			$0.000
36	2055			$0.000
37	2056			$0.000
38	2057			$0.000
39	2058			$0.000
40	2059			$0.000
41	2060			$0.000
42	2061			$0.000
43	2062			$0.000
44	2063			$0.000
45	2064			$0.000

Alternative Submissions	Rationale for alternative submission: *Provide an overall rationale for providing alternative values using this box*

Infrastructure Capacity Cost Inputs

Real or Nominal?	
Source and Pg #:	
Source Link or File Name:	
Source Notes:	

Infrastructure Capacity Costs

		Infrastructure Capacity Costs		
Year #	Calendar Year	Supply (Real $/Dth/Day)	Distribution Peak DAY (Real $/Dth/Day)	Distribution Peak HOUR (Real $/Dth/Hour)
1	2020			
2	2021			
3	2022			
4	2023			
5	2024			
6	2025			
7	2026			
8	2027			
9	2028			
10	2029			
11	2030			
12	2031			
13	2032			
14	2033			
15	2034			
16	2035			
17	2036			
18	2037			
19	2038			
20	2039			
21	2040			
22	2041			
23	2042			
24	2043			
25	2044			
26	2045			
27	2046			
28	2047			
29	2048			
30	2049			
31	2050			
32	2051			
33	2052			
34	2053			
35	2054			
36	2055			
37	2056			
38	2057			
39	2058			
40	2059			
41	2060			
42	2061			
43	2062			
44	2063			
45	2064			

Alternative Submissions	Rationale for alternative submission: *Provide an overall rationale for providing alternative values using this box*

Risk Reduction Value Inputs

Real or Nominal?	
Source and Pg #:	
Source Link or File Name:	
Source Notes:	

Risk Reduction Value

No Data Entered

= Levelized Risk Reduction Value (for use when negative values occur in any years of the forecast period). If this value is negative, then zero will be assigned as the final value.

Year #	Calendar Year	Risk Reduction Value (Real 2020$/Dth)
1	2020	
2	2021	
3	2022	
4	2023	
5	2024	
6	2025	
7	2026	
8	2027	
9	2028	
10	2029	
11	2030	
12	2031	
13	2032	
14	2033	
15	2034	
16	2035	
17	2036	
18	2037	
19	2038	
20	2039	

Alternative Submissions

Rationale for alternative submission:
Provide an overall rationale for providing alternative values using this box

End Use Load Profiles & Peak Day/Hour Ratios

Source and Pg # and/or Table #:	
Source Link or File Name:	
Source Notes:	

End Use Load Profiles	**Monthly Share of Normal Weather Annual Load**												**Peak to Annual Normal Weather Usage Ratios**	
End Use	**Jan**	**Feb**	**Mar**	**Apr**	**May**	**Jun**	**Jul**	**Aug**	**Sep**	**Oct**	**Nov**	**Dec**	**Peak Day**	**Peak Hour**

Notes:
Energy Trust will work with Utility and OPUC Staff to determine the most appropriate Load Profiles and peak factors to use, whether that is utility specific values or Northwest Power and Conservation Council proxies. In order for utility-specific values to be used, utility staff must review the methodology they used to develop the values with OPUC Staff.