

November 2019 IRP Comments and Public Input

Overview

The following comments were received in November 2019 as part of Puget Sound Energy’s 2019 Integrated Resource Plan (IRP) process. In total, fifteen comments were submitted to the IRP team. Several questions in this document have been extracted from some comments for brevity and are verbatim with sensitive personal information redacted from the report. Comments are organized by date and time received. Full comments as received are available on the project website at www.pse.com/irp.

Responses from the IRP team are included immediately following the submitted comment. In some cases and as appropriate, questions are repeated in **bold** and PSE responses are in *italics*. For questions or comments regarding the 2019 IRP, please visit the project website or email the IRP team at IRP@pse.com. All comments or questions submitted will be made public.

Due to the Thanksgiving holiday and a commitment that PSE made to address certain questions by November 29, any questions received between November 25 and November 30 will be included in the December 2019 report.

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Comment #1: Comments by James Adcock on the Response to the request from CENSE by Puget Sound Energy

Date received: 10/29/19

Name: James Adcock, Electrical Engineer

Organization: PSE Technical Advisory Group

Comment

I am a member of what PSE now calls "TAG" but previously called the "IRP" process. I have been so for about the last 10 years.

I write today neither to support nor oppose Staff's suggested exemption but rather to express a generalized concern that "Things Are Really Not Going Well" with this IRP cycle. In general, the quality of the PSE IRP process has gone down steadily for the last 10 years, and in the current IRP cycle, which implemented the PSE "TAG" restrictions, the quantity and quality of *actual* "technical" discussions has basically gone to zero. Even when there are strong disagreements between IRP participants and PSE -- as there has been for the last 10 years -- better a dialog than no dialog, and in the current IRP cycle there is basically "no dialog." PSE's position is basically "We Present, and You Listen." This is not what the plain language of the IRP laws requires. The IRP laws do not require a "Presentation" rather they require (in plain language) that utilities *Explain*. Recently for example, PSE took the position that the "good faith" progress ramp re CETA starts from their existing RE-newables position as a starting point, which then PSE indicates they believe they are in a "safe harbor" position for the next four years -- i.e. no new Non-Emitting resources are required for the next four years! I asked PSE to *Explain* that position, in that CETA does not deal with RE-newable resources (RE) but rather with Non-Emitting resources (NE) -- and therefore a consistent position would be that PSE should perform a 10-year nominal ramp (2020 to 2030) from their existing NE position to the 80% NE position required under CETA. But PSE refuses to *Explain* their seemingly inconsistent position. Further, the plain language of CETA does not provide a "safe harbor" possibility until 2030 -- and then *only* if a utility has previously maximized their NE acquisition possibilities. So (I believe) PSE should have no opportunity to "rest on their laurels" prior to 2030 -- and presumably not after then either.

[See PSE TAG Meeting #8 PowerPoint Slide 38, with PSE indicating there with the tiny double-arrow line that they believe their first tiny deficit on the "good faith" CETA ramp doesn't exist until 2023]

CETA would seem -- at least superficially -- to now align the desires, or at least the requirements, between utilities, IRP participants, the governor, and the UTC. Yet PSE still is "engaging in ploys." Which raises my concern that I believe PSE does not intend to make a "good faith effort" to meet the requirements of CETA, but rather to "slow walk" it while trying to defeat CETA by political process, or by regulatory distortions. I ask that the UTC and Commissioners not allow this to happen, but rather to act forcefully "from day one" to make sure PSE "gets on with it" and actually follows the CETA rules and does not keep coming back with excuses about why real NE acquisition progress has not been made.

To make the problem concrete: My calculations show that PSE -- assuming that it makes full use of the next 10 years -- 2020 to 2030 -- needs (for example) to build 3 wind farms each 100 turbines of the largest 3 megawatt size EVERY TWO YEARS! Or a total of 15 such wind farms over the next 10 years. If UTC / Commissioners allow *any* amount of PSE "foot dragging" this will simply not be possible. I am not suggesting that "building 15 wind farms" is the only way PSE may meet requirements, but I hope that I am illustrating just how large a problem PSE has to solve -- IF PSE actually works diligently to meet the requirements of CETA, rather than acting outside of legal framework to oppose it.

I therefore ask UTC Staff and Commissioners to act now to make sure that PSE does not engage in additional "foot dragging" or excuse making.

And please *do something* to get PSE's IRP process back on track, so that IRP participants can in fact participate in a meaningful manner, so that we can have meaningful dialog even when we disagree, and so that PSE be required to *Explain* their position not simply to "Present", etc.

Thank you for any help you can give to these matters.

James Adcock

PSE Response

PSE acknowledges James Adcock's October 29, 2019 filing to Docket UE-180607 and thanks James for filing it in the docket. Mr. Adcock is a 2019 IRP TAG member. The filing is available at the docket link and at www.pse.com/irp.

Comment #2:

RE: Commission Staff's Petition for an Order Granting Exemption from the Requirements of WAC 480-100-238(4) and (5) Dockets UE-180607 and UG-180608 (Puget Sound Energy) Docket UE-180738 (Avista Corporation) Docket UE-180259 (Pacific Power & Light Company)

Date received: 11/1/19

Name: Lisa Gafken, WSBA No. 31549

Organization: Attorney General of Washington, Public Counsel Unit

Comment

Dear Mr. Johnson: Public Counsel files these comments with the Utilities and Transportation Commission ("Commission") in response to Commission Staff's ("Staff") Petition for an Order Granting Exemption from the Requirements of WAC 480-100-238(4) and (5) ("Petition"). Public Counsel supports the Petition, but requests the Commission consider providing guidance to the utilities regarding the proposed integrated resource plan (IRP) updates. Additionally, Public Counsel provides comments regarding Staff's proposal to forego the public hearing process.

- I. The Commission should instruct the utilities to include certain information in their IRP updates.

Staff requests that the Commission grant an exemption from the requirements of WAC 480-100- 238(4), which requires electric utilities to file IRPs within two years of the date on which the previous plan was filed. Staff requests that the 2019 IRPs be considered updates under RCW 19.280.030(1). Generally, Public Counsel supports Staff's Petition to allow efficient allocation of resources and development of important policies as required by the Clean Energy Transformation Act (CETA). The utilities' updates should be as useful as possible, rather than mere placeholders until the next full IRPs are filed.

Public Counsel believes Commission guidance would be useful regarding the information that should be presented in the IRP updates. In particular, the Commission should require the utilities to provide the results of any modeling they did during the 2019 IRP process, the revenue requirement of any runs conducted, and identification of any preferred portfolios resulting from the utility's analysis. Public Counsel appreciates that the utilities performed a significant amount of modeling and considered a wide variety of scenarios and factors in the current IRP cycle. This information, along with revenue requirement data and understanding the resulting preferred portfolio(s), will be useful because it will help guide, to some extent, the utilities' decisionmaking in the near term. Additionally, the information will be useful as the Commission and stakeholders work through the myriad of rulemakings necessary to implement recent energy legislation.

The Commission should also require the utilities to show how they each addressed requirements contained in CETA in their IRP modeling. While CETA was passed well into the period during which the utilities were developing their IRP analysis for the 2019 filings, each of the utilities were responding to anticipated legislative requirements. The utilities approached their modeling to anticipate requirements and modified their approach from prior IRP cycles. Reviewing how each utility approached compliance with CETA requirements will be useful as the Commission and stakeholders move forward with the IRP Rulemaking (Docket U-190689) and other related proceedings. The inputs and results from the Company's models will be informative, given that they took differing approaches to address the planning horizon while anticipating new energy policies. Examining each of the Company's approaches could provide useful data and lessons to guide decision-making in the near future.

- II. Public participation should not be unnecessarily curtailed, but a public hearing may not be necessary.

Staff requests that the Commission grant an exemption from the requirements in WAC 480-100- 238(5), which require a public hearing on electric IRPs. Public participation in Commission matters, including IRPs, is important because the Commission should be aware of how the public views and understands the issues before it. However, if the Commission grants the Petition and allows the 2019 filings to be accepted as updates, rather than full-fledged plans, a public hearing is not necessary. A public hearing is required for plans, but not updates, under the rule. Even so, public participation should not be wholly curtailed. Members of the public may review the 2019 filings made by each of the electric utilities, and they may file written comments regarding these filings. Public Counsel believes that the Commission should include a statement in its order that the public may file written comments along with information regarding how individuals may communicate with the Commission.

Public Counsel appreciates the opportunity to provide these comments. We will be present at the November 7 Open Meeting to participate in the discussion regarding Staff's Petition. Questions about these comments can be directed to Carla Colamonici (Puget Sound Energy) at Carla.Colamonici@atg.wa.gov or (206) 389-3040, Corey Dahl (Avista Corporation) at Corey.Dahl@atg.wa.gov or (206) 464-6380, or Sarah Laycock (Pacific Power & Light Company) at Sarah.Laycock@atg.wa.gov or (206) 389-3879. If you have any other questions, please contact Lisa Gafken at Lisa.Gafken@atg.wa.gov or (206) 464-6595.

Sincerely,

Lisa W. Gafken, WSBA No. 31549

PSE Response

PSE acknowledges Public Counsel's November 1, 2019 filing to Dockets UE-180607 and UG-180608 and thanks Lisa Fafken, Assistant Attorney General for filing it in the docket. Public Counsel is represented on the 2019 IRP TAG by Carla Colamonici. The filing is available at the docket link and at www.pse.com/irp.

Comment #3: 2019 IRP Technical Input – IRP must address Listening Session inputs

Date received: 11/4/19 (Dated 11/5/19)

Name: Kevin Jones

Organization: Vashon Climate Action Group

Comment

Please note: the text below is an excerpt from the full comment. The comment can be read in full on the IRP website.

As a PSE TAG member, I am committed to and have devoted many hours to achieve an open, honest, high integrity IRP process. I have invested my time to compile the list of Listening Session inputs regarding the IRP process with the expectation that PSE will match my investment of time and energy by modifying the IRP process to better respect the interests and concerns of your customers. Please do that by responding, in writing, posted on the IRP website, to the questions below.

- Which of the Listening Session inputs in the list below will PSE incorporate in the 2019 IRP?
- Which of the Listening Session inputs does PSE intend to incorporate in the 2021 IRP?
- For those Listening Session inputs that PSE will not incorporate, or will not fully incorporate, into an IRP, what is the rationale for not doing so?

Respectfully submitted,

Kevin Jones

PSE Response

PSE acknowledges the email sent by Kevin Jones on November 4. As requested, the email was uploaded at www.pse.com/irp. Mr. Jones specifically requested three questions be addressed (provided below) and he also provided a matrix of listening session inputs. Mr. Jones is a 2019 IRP TAG member.

Which of the Listening Session inputs in the list below will PSE incorporate in the 2019 IRP?

Pursuant to Order 2, PSE will not be filing a 2019 IRP. However, PSE filed a Progress Report on November 15, 2019 which was distributed to the TAG and uploaded on pse.com on November 18, 2019.

Many recommendations made by stakeholders were incorporated in the 2019 effort. We will work with care and deliberation to ensure that the applicable contributions and feedback of stakeholders in the 2019 process is included in the 2021 IRP.

Which of the Listening Session inputs does PSE intend to incorporate in the 2021 IRP?

Concerning the 2021 IRP, PSE is considering the issues you highlight: analysis integrity, social justice, cost equity, process integrity, and alignment with state climate objectives. PSE looks forward to working with the WUTC in the rulemaking process and the stakeholders in the 2021 IRP. At this time, the specific plan for the 2021 IRP has not yet been developed.

For those Listening Session inputs that PSE will not incorporate, or will not fully incorporate, into an IRP, what is the rationale for not doing so?

PSE will be considering the listening session inputs in the development of the 2021 IRP. As referenced previously, PSE will be sharing a written response to the recommendations shared by participants during the IRPAG listening session. PSE will post this response by or before December 31, 2019.

Comment #4: 2019 IRP Technical Input – Replace coal electricity contracts with renewable energy contracts

Date received: 11/4/19

Names: Kevin Jones, Doug Howell

Organizations: Vashon Climate Action Group, Sierra Club

Comment

Note: The TAG acknowledges the WUTC Staff petition for an IRP schedule exemption. This technical input is submitted in response to PSE's commitment to "continue to ... maintain and respond to public input". This technical input should be considered an integral part of the collection of 2019 PSE IRP documents. We appreciate PSE's commitment to also include these technical inputs in the 2021 PSE IRP.

The Clean Energy Transformation Act (CETA) says "on or before December 31, 2025, each electric utility must eliminate coal-fired resources from its allocation of electricity."

Figure 7-2 of PSE's 2017 Greenhouse Gas Emissions Inventory (GHG_Inventory_2017 (1).pdf - below), shows that 22% of their total electricity related CO2 emissions are from "Firm Contracts – Coal".

As TAG members, we formally request that PSE post this letter on their 2019 IRP website and provide a written response to these questions:

- Will PSE commit to replacing these contracts with 100% renewable energy-based electricity upon their current contract termination date(s)?
- If not, will PSE provide the rationale for not replacing these contracts with 100% renewable energy-based electricity?

Respectfully submitted:

Kevin Jones – Vashon Climate Action Group

Doug Howell – Sierra Club

PSE Response

PSE acknowledges the email sent by Kevin Jones on November 4. As requested, the email was uploaded at www.pse.com/irp. Mr. Jones and Mr. Howell are 2019 IRP TAG members.

Will PSE commit to replacing these contracts with 100% renewable energy-based electricity upon their current contract termination date(s)?

No. PSE does not make resource decisions as part of the IRP planning process.

If not, will PSE provide the rationale for not replacing these contracts with 100% renewable energy-based electricity?

PSE is a regulated utility and cannot make any assertion related to future resources. Resource acquisitions are managed through a separate process and PSE must comply with all applicable laws and regulations, including CETA and NERC/WECC for system reliability.

Comment #5: 2019 IRP Technical Input – Use High Impact Social Cost of Carbon value

Date received: 11/4/19

Name: Kevin Jones, Virginia Lohr, Noah Roselander

Organization: Vashon Climate Action Group, Citizen's Climate Lobby, Vashon Climate Action Group

Comment

Please note: the text below is an excerpt from the full comment. The comment can be read in full on the IRP website.

As TAG members, we formally request that PSE post this letter on their 2019 IRP website and provide a written response to these questions:

- Did PSE use the High Impact SCC value in any of their 2019 IRP analyses or sensitivity analyses?
- If yes:
 - What SCC value did PSE use?
 - What IRP analyses or sensitivity cases included the High Impact SCC value?
 - Where will UTC and PCU regulators find the results of the High Impact SCC value analyses?
- If PSE did not accept the TAG technical input to include the High Impact SCC value, why was this input not incorporated?

If PSE has failed to include at least one sensitivity using the High Impact SCC values in their 2019 IRP analyses, will PSE commit to performing this analysis in the 2021 IRP?

Respectfully submitted:

Kevin Jones – Vashon Climate Action Group

Virginia Lohr – Citizen's Climate Lobby

Noah Roselander – Vashon Climate Action Group

PSE Response

PSE acknowledges the email sent by Kevin Jones on November 4. As requested, the email was uploaded at www.pse.com/irp. Mr. Jones is a 2019 IRP TAG member.

Did PSE use the High Impact SCC value in any of their 2019 IRP analyses or sensitivity analyses?

PSE used the value of \$62 per ton of metric ton CO₂ (in 2007 dollars) converted to \$74 per ton of CO₂ (in 2019 dollars). This number is from the technical update of the social cost of carbon for regulatory impact analysis under Executive Order No. 12866, published by then Interagency Working Group on Social Cost of greenhouse gas of the United States government, August 2016 (Section 15). A discount rate of two and one-half percent was applied, consistent with Executive Order No. 12866.

PSE presented this information at the May TAG meeting on slide 30: SCC of carbon starting at \$86/US ton of CO₂ (nominal in 2020) and growing to \$184/US ton (nominal) in 2039 as a planning adder in Washington including upstream emissions on natural gas.

Adjusted Cost of Greenhouse Gas Emissions

<i>Line</i>	<i>Year</i>	<i>Social Cost of CO2* (in 2007 dollars)</i>	<i>** GDP Index (2007)</i>	<i>** GDP Index (2018)</i>	<i>Adjusted Social Cost of CO2 (in 2018 dollars)</i>
1	2010	50	92.498	110.382	60
2	2015	56	92.498	110.382	67
3	2020	62	92.498	110.382	74
4	2025	68	92.498	110.382	81
5	2030	73	92.498	110.382	87
6	2035	78	92.498	110.382	93
7	2040	84	92.498	110.382	100
8	2045	89	92.498	110.382	106
9	2050	95	92.498	110.382	113

* Social cost of carbon in 2007 dollars using the two and one-half percent discount rate, listed in table 2, technical support document: Technical update of the social cost of carbon for regulatory impact analysis under Executive Order No. 12866, published by the interagency working group on social cost of greenhouse gases of the United States government, August 2016.

** Department of Commerce Bureau of Economic Analysis Gross Domestic Product Table 1.1.4 Annual Price Indexes Last Revised on: August 29, 2019

Note, PSE stated in the September 19, 2019 FINAL TAG notes: - On the gas side, PSE is modeling the \$74/ton SCC in the Base, low and high scenarios (converted to \$/MMBtu). There is a sensitivity to test an additional \$15/ton on top of the \$74/ton. Note, PSE is using CPI not GDP, to convert to 2018 dollars (PSE will defer to the WUTC for the 2021 IRP).

If yes: What SCC value did PSE use?

\$74 per ton of CO2 (in 2019 dollars)

What IRP analyses or sensitivity cases included the High Impact SCC value?

To date, PSE did not complete any analysis with a SCC value higher than what was stated in the Clean Energy Transformation Act.

Where will UTC and PCU regulators find the results of the High Impact SCC value analyses?

To date, PSE did not complete any analysis with a SCC value higher than what was stated in the Clean Energy Transformation Act.

If PSE did not accept the TAG technical input to include the High Impact SCC value, why was this input not incorporated?

Rather than including a high SCC value in the analysis, PSE planned on completing a sensitivity that is more constrained such that only renewable and non-emitting resources are included in PSE's energy supply portfolio after 2030. At the time of the September TAG meeting, PSE concluded that this sensitivity would be more constrained and effectively represent the intention behind the High Impact SCC value.

If PSE has failed to include at least one sensitivity using the High Impact SCC values in their 2019 IRP analyses, will PSE commit to performing this analysis in the 2021 IRP?

PSE will consult with stakeholders regarding scenarios and sensitivities for the 2021 IRP.

Comment #6: 2019 IRP Technical Input – Answer Energize Eastside questions

Date received: 11/4/19

Names: Don Marsh, Warren Halverson, Kevin Jones, Rob Briggs, Norm Hansen

Organizations: CENSE.org, Vashon Climate Action Group, Bridle Trails Neighborhood representative

Comment

Please note: the text below is an excerpt from the full comment. The comment can be read in full on the IRP website.

As TAG members, we formally request that PSE post this letter on the company's 2019 IRP website and provide a written response to the following questions:

1. Will PSE suspend the Energize Eastside project until it can be discussed by the TAG in the context of an Integrated Resource Planning process?
2. Will PSE provide written answers to the UTC's questions about the Energize Eastside project that were included in the Commission's comments on PSE's 2017 IRP?
3. Will PSE acknowledge declining winter peaks as documented by FERC Form 1 filings?

Respectfully submitted:

Don Marsh, CENSE.org

Warren Halverson, CENSE.org

Kevin Jones, Vashon Climate Action Group

Rob Briggs, Vashon Climate Action Group

Norm Hansen, Bridle Trails Neighborhood representative

PSE Response

PSE acknowledges the email by Don Marsh sent on November 4. As requested, the email was uploaded at www.pse.com/irp. Mr. Marsh specifically requested three questions be addressed (provided below) and provided graphs. Mr. Marsh, Mr. Halverson, Mr. Jones, Mr. Briggs, and Mr. Hansen are 2019 IRP TAG members.

1. Will PSE suspend the Energize Eastside project until it can be discussed by the TAG in the context of an Integrated Resource Planning process?

No.

2. Will PSE provide written answers to the UTC's questions about the Energize Eastside project that were included in the Commission's comments on PSE's 2017 IRP?

No. On September 26, 2019, WUTC's Executive Director and Secretary, Mark Johnson, sent Mr. Marsh and other individual TAG members a letter concerning the 2019 IRP process and the Energize Eastside Project. The letter from Mr. Johnson was shared with TAG members.

Relevant excerpts from the above referenced letter from the WUTC: "Utilities are required to develop IRPs for the purpose of evaluating and planning for future resource needs. IRPs consider generic alternatives on a planning basis to produce a thorough study of options. Specific resources are not chosen during the IRP process. Nor are IRPs used to update construction costs estimates and evaluate whether to continue with the acquisition of a project or resource. Rather, the Commission will evaluate after project completion whether a company has met its responsibility to perform continued evaluations of

its acquisition and the reasonable costs of the project. During a general rate proceeding, the Commission determines whether a company's project expenditures were prudent, as well as how much of those expenditures should be included in rates.

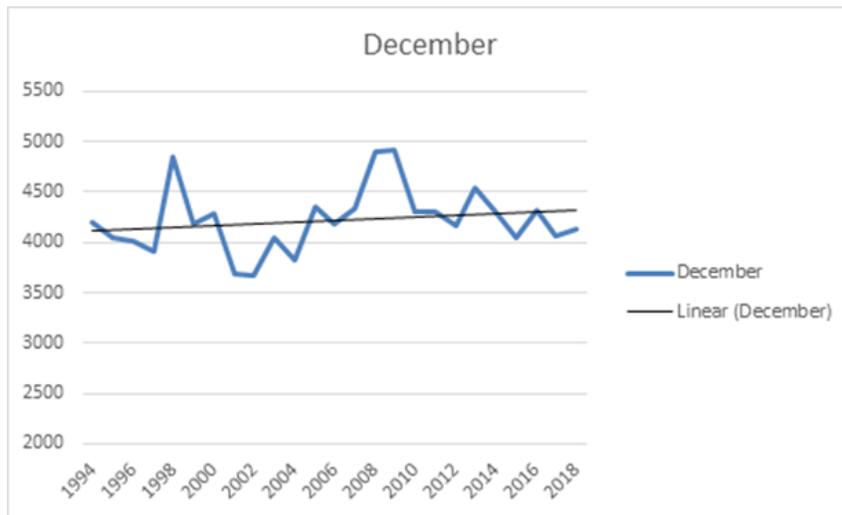
IRPs are intended to model a sufficiently broad range of costs for a generic resource type in order to provide a company an established means for comparing alternatives during its resource decision-making and its ongoing internal evaluation of whether to continue its acquisition. The Commission's 2017 letter acknowledging PSE's IRP did not find any deficiency in the cost range for the Energize Eastside Project that PSE used for developing its alternative resource options. Additionally, PSE is not obligated by WAC 480-100-238 to share with the public its evaluation of whether to continue its resource development once the acquisition has begun. We decline, therefore, to require PSE to provide that information publicly.

In addition to the public process required by rule, the IRP also affords an early opportunity for a company to establish facts and supporting analysis for a future prudency determination. Considering the substantial near-term issues facing utilities in the wake of the passage of CETA, it is premature to determine whether there is a need for PSE to explore this question in its 2019 IRP. When PSE files its 2019 IRP, the Commission will evaluate this issue in light of the Company's actual statements.

PSE states in its August 22, 2019, response that it believes additional transmission resources will be required. However, Commission rules do not require, and the Commission declines to otherwise compel, PSE to support its statement at this time."

Will PSE acknowledge declining winter peaks as documented by FERC Form 1 filings?

It is unclear what data Mr. Marsh used to conclude that the winter peaks are declining. Based on the data from FERC Form 1, December peaks from 1994 to 2018 clearly show, in the graph below, that the overall trend is increasing.



Comment #7: 2019 IRP Technical Input – 2019 IRP Data Request

Date received: 11/4/19

Name: Kevin Jones

Organization: Vashon Climate Action Group

Comment

Please note: the text below is an excerpt from the full comment. The comment can be read in full on the IRP website.

The TAG formally requests that PSE post this letter on your 2019 IRP website with these 2019 IRP data items:

- The results of the 2019 IRP sensitivity analysis which includes no new fossil fuels beyond 2030.
- The average cost of wind, solar, battery storage and pumped hydro systems in bids received by PSE (not individual bids).
 - Note: TAG research has acquired bid data which is significantly more affordable than renewable energy costs which are just a few years old. The TAG has provided this data to PSE. It is important to understand, particularly with CETA rulemaking underway, if the bid data that PSE is using for these same capabilities in their 2019 IRP analyses are consistent with TAG research.
- PSE has stated that renewable energy costs will increase. Please provide the reference data that indicates solar energy costs will increase.
- A list of PSE scheduled coal generation contract expiration dates and the MWH capacity of each contract.
- Full accounting of assumptions and modeling used to calculate upstream methane emissions.
- Full accounting of assumptions that went into forecast of a 20 percent increase in gas use for the gas utility used for peak loads over the 20-year IRP timeframe. Additional disclosure of expectation of gas use for the same period.
- Disclosure of the last 10 years of summer and winter demand peaks.
- Full disclosure of inputs used in Aurora, Plexos or any other models used to determine the preferred resource portfolio.

We also formally request PSE state, in writing, posted to the 2019 IRP website, your rationale for not providing any of the requested data items.

Respectfully submitted:

Kevin Jones – Vashon Climate Action Group

PSE Response

PSE acknowledges the email sent by Kevin Jones on November 4. As requested, the email was uploaded at www.pse.com/irp. Mr. Jones is a 2019 IRP TAG member.

The results of the 2019 IRP sensitivity analysis which includes no new fossil fuels beyond 2030.

Pursuant to Order 2, PSE will not be filing a 2019 IRP. PSE has not been able to complete all the analyses and as such will not be sharing the results. PSE will share all appropriate results when it starts the public process for the 2021 IRP.

The average cost of wind, solar, battery storage and pumped hydro systems in bids received by PSE (not individual bids).

PSE is not providing this information due to the commercially sensitive nature and confidentiality terms.

The IRP process differs from the Request for Proposal (“RFP”) process, where actual resource decisions are made.

In Washington State, resource decisions are not made in the IRP process. Acquisition decisions are made in a separate process, as detailed in WAC 480-107. In the acquisition process, generic resource costs for near-term decisions are replaced with actual resource alternatives. The most relevant inputs to the acquisition process from the IRP is the resource need, after conservation, and the analytical frameworks. Generic resource costs in the IRP are primarily helpful just to let participants in the acquisition process know the range of what PSE thinks it may see for new resources in the RFP process, however, bidders will compete against each other. The alternatives evaluated in the RFP do not compete against the generic resources assumed in PSE’s IRP.

Note: TAG research has acquired bid data which is significantly more affordable than renewable energy costs which are just a few years old. The TAG has provided this data to PSE. It is important to understand, particularly with CETA rulemaking underway, if the bid data that PSE is using for these same capabilities in their 2019 IRP analyses are consistent with TAG research.

For the 2019 IRP, PSE utilized a third-party consultant, HDR, to develop a forecast of resource costs. TAG members have recommended that PSE consider using the NREL Annual Technology Baseline (ATB) database (public) resource costs. Resource costs are updated for every IRP and any changes in future resource costs will be reflected in each IRP.

PSE has stated that renewable energy costs will increase. Please provide the reference data that indicates solar energy costs will increase.

PSE utilizes the third party generic electric resource cost information and PSE staff does not recall making this statement. If PSE did state this, we would like to take this opportunity to clarify that we do not take a position concerning costs and of course desire renewable energy costs to decrease.

A list of PSE scheduled coal generation contract expiration dates and the MWH capacity of each contract.

See summary table below. Note that capacity is represented in megawatts (MW) rather than megawatt hours (MWh).

Resource	Capacity (MW)	Expiration Date
Colstrip 1	153.5	12/31/2019
Colstrip 2	153.5	12/31/2019
Colstrip 3	185	12/31/2025
Colstrip 4	185	12/31/2025
Centralia	300	12/31/2025

Full accounting of assumptions and modeling used to calculate upstream methane emissions.

This information was provided in IRP Progress Report dated November 15, 2019 and included in the October 2018 and May 2019 TAG meetings. This question is also addressed in more detail below.

Full accounting of assumptions that went into forecast of a 20 percent increase in gas use for the gas utility used for peak loads over the 20-year IRP timeframe.

PSE would like to clarify that the 20 percent increase from 2018 to 2039 is the increase before conservation. Adjusted for conservation, loads increase nine percent from 2018 to 2039. This is consistent with the full methodology and information presented at the January 9, 2019 TAG #4 meeting and the meeting materials are available online. Load forecasts are updated for every IRP and will be updated again for the 2021 IRP. PSE will provide updated natural gas load forecast assumptions during the 2021 IRP public process.

Additional disclosure of expectation of gas use for the same period.

This will be provided in the 2021 IRP.

Disclosure of the last 10 years of summer and winter demand peaks.

PSE presented twenty years of demand peaks in the January 9, 2019 TAG meeting #4. Since PSE is winter peaking, summer peaks are not included. Meeting materials are available at www.pse.com/irp.

Full disclosure of inputs used in Aurora, Plexos or any other models used to determine the preferred resource portfolio.

Preferred resource portfolio was not developed for the 2019 IRP. Material inputs used to derive future preferred resource portfolios will be available with upcoming IRPs. Inputs used in the 2017 IRP are available online in the appendices of the 2017 IRP filing.

We also formally request PSE state, in writing, posted to the 2019 IRP website, your rationale for not providing any of the requested data items.

During the stakeholder process and in the IRP filing, PSE provides vast amounts of inputs, assumptions and results for an IRP. PSE does not and will not share any commercially sensitive information. It is unclear what specific information is missing.

What is PSE assuming for upstream methane leakage rate as a percentage of methane delivered, and what is the basis for using that value rather than much higher rates consistent with current scientific findings?

PSE is using data consistent with the Puget Sound Clean Air Agency (PSCAA). PSE understand that upstream emissions are an important issue and we will conduct further consultation for the 2021 IRP.

Why is PSE using an out-of-date value for global warming potential (GWP) for methane?

PSE uses the Intergovernmental Panel on Climate Change Fourth Assessment Report (AR4) 100-year global warming potentials (GWP), as directed by the EPA and the Department of Ecology. PSE does not view this as out-of-date.

Why is PSE using a GWP for a 100-year time horizon for methane when that time horizon is clearly illogical and inappropriate given the nature of the analysis and the environmental and political context in which the analysis is being performed?

Again, PSE uses the Intergovernmental Panel on Climate Change Fourth Assessment Report (AR4) 100-year global warming potentials (GWP), as directed by the EPA and the Department of Ecology. PSE does not view this as illogical and inappropriate.

Comment #8: 2019 IRP Technical Input – Upstream Gas Assumptions in PSE 2019 IRP

Date received: 11/4/19

Name: Rob Briggs

Organization: Vashon Climate Action Group

Comment

Please note: the text below is an excerpt from the full comment. The comment can be read in full on the IRP website.

As an IRP TAG member, I formally request that PSE post this letter on their 2019 IRP website and provide a written response to these questions, posts them to the IRP website, and email them to me at rsb@turbonet.com:

- What is PSE assuming for upstream methane leakage rate as a percentage of methane delivered, and what is the basis for using that value rather than much higher rates consistent with current scientific findings?
- Why is PSE using an out-of-date value for global warming potential (GWP) for methane?
- Why is PSE using a GWP for a 100-year time horizon for methane when that time horizon is clearly illogical and inappropriate given the nature of the analysis and the environmental and political context in which the analysis is being performed?

Best regards,

Rob Briggs

PSE Response

PSE acknowledges the email sent by Rob Briggs on November 4. As requested, the email was uploaded at www.pse.com/irp. Mr. Briggs also provided an email dated September 18 as a supplement. This document was previously uploaded at www.pse.com/irp. Mr. Briggs is a 2019 IRP TAG member.

What is PSE assuming for upstream methane leakage rate as a percentage of methane delivered, and what is the basis for using that value rather than much higher rates consistent with current scientific findings?

PSE uses the Intergovernmental Panel on Climate Change Fourth Assessment Report (AR4) 100-year global warming potentials (GWP), as directed by the EPA and the Department of Ecology. PSE does not view this as inconsistent with current scientific findings.

Why is PSE using an out-of-date value for global warming potential (GWP) for methane?

Again and as responded to Mr. Jones: PSE uses the Intergovernmental Panel on Climate Change Fourth Assessment Report (AR4) 100-year global warming potentials (GWP), as directed by the EPA and the Department of Ecology. PSE does not view this as out-of-date.

Why is PSE using a GWP for a 100-year time horizon for methane when that time horizon is clearly illogical and inappropriate given the nature of the analysis and the environmental and political context in which the analysis is being performed?

Consistent with our other responses: PSE uses the Intergovernmental Panel on Climate Change Fourth Assessment Report (AR4) 100-year global warming potentials (GWP), as directed by the EPA and the Department of Ecology. PSE does not view this as out-of-date.

Comment #9: 2019 IRP Technical Input – Capacity Factors in Resource Adequacy Analysis

Date received: 11/4/19

Name: Willard (Bill) Westre

Organization: PSE IRP TAG

Comment

Note: The TAG acknowledges the WUTC Staff petition for an IRP schedule exemption. This technical input is submitted in response to PSE's commitment to "continue to ... maintain and respond to public input". This technical input should be considered an integral part of the collection of 2019 PSE IRP documents. We appreciate PSE's commitment to also include these technical inputs in the 2021 PSE IRP.

It is my understanding after several years of IRP and TAG meetings that PSE uses the capacity factors (CF) listed in the IRP Electric Supply-Side Resources charts, developed by HDR and others in previous years, as the input data for resource adequacy analyses. This CF data is annual average data and does not accurately reflect data related to peak load requirements which are seasonal and hourly in nature. For example, HDR lists Montana wind CF as 42.2% but data from DNV indicates it is nearly 60% in winter which is PSE peak load season. Solar-plus-storage has a greater CF than the average CF in summer, corresponding to the PSE summer peak. CFs vary by season, time, geography and weather. CFs have great influence on overall resource performance and can lead to unfortunate resource selection.

This is even more important in the Clean Energy Transformation Act (CETA) era. The "rollercoaster" performance of most renewables can be combined creatively to create a "quasi-base" approach to simulate the consistent base performance of fossil fuels if the analysis is sensitive to the real performance of renewable options. In other words, figure out how to combine summer and daytime peaking solar, summer and daytime peaking WA wind, winter and nighttime peaking MT wind, and short and long-time storage effectively. This cannot be done without accurate and time-variable capacity factor data.

As a member of PSE's Technical Advisory Group, I formally request that PSE post this letter on their 2019 IRP website and provide a written response to this question:

- Will PSE update its Resource Adequacy analysis methods to develop and accommodate time-variable capacity factor data for renewables and use that in the 2021 IRP?

Thank you,

Willard (Bill) Westre

Mechanical Engineer

PSE IRP TAG

PSE Response

PSE acknowledges the email sent by Willard (Bill) Westre on November 4. As requested, the email was uploaded at www.pse.com/irp. Mr. Westre is a 2019 IRP TAG Member.

Will PSE update its Resource Adequacy analysis methods to develop and accommodate time-variable capacity factor data for renewables and use that in the 2021 IRP?

Yes, PSE will update its resource adequacy analysis for the 2021 IRP and will study the peak capacity contributions of renewable resources as part of the analysis.

Comment #10: 2019 IRP Technical Input – Gas Conservation

Date received: 11/4/19

Name: Willard (Bill) Westre

Organization: PSE IRP TAG

Comment

Please note: the text below is an excerpt from the full comment. The comment can be read in full on the IRP website.

As a member of PSE's Technical Advisory Group, I formally request that PSE post this letter on their 2019 IRP website and provide a written response to these questions:

- Will PSE revisit and intensify its gas conservation program?
- What specific gas conservation program changes will be offered?
- Will PSE offer customer incentives to convert from gas furnaces to electric heat pumps with the same efficiency requirements as current electric conversion to electric heat pumps?
- Will PSE offer customer incentives to convert from gas to electric induction cook-tops?
- Will PSE develop larger efficiency measures in the 2021 IRP?

Willard (Bill) Westre
Mechanical Engineer
PSE IRP TAG

PSE Response

PSE acknowledges the email sent by Willard (Bill) Westre on November 4. As requested, the email was uploaded at www.pse.com/irp. Mr. Westre is a 2019 IRP TAG Member.

Will PSE revisit and intensify its gas conservation program?

PSE consistently exceeds its natural gas conservation goals and the gas savings target contained in the just filed plan is significantly higher than in the past.

What specific gas conservation program changes will be offered?

Details concerning PSE's Biennium Conservation Program (BCP) can be found on the UTC website at - [PSE 2020 to 2021 Biennium Conservation Program](#) (please click on the icon next to the docket # and for access to all the documents)

Will PSE offer customer incentives to convert from gas furnaces to electric heat pumps with the same efficiency requirements as current electric conversion to electric heat pumps?

There are no financial incentives available for fuel conversion in the BCP.

Will PSE offer customer incentives to convert from gas to electric induction cook-tops?

There are no financial incentives available for fuel conversion in the BCP.

Will PSE develop larger efficiency measures in the 2021 IRP?

The current expectation is that the 2021 IRP will identify larger cost-effective energy efficiency potential.

Comment #11: 2019 IRP Technical Input – Transmission Capacity Improvement

Date received: 11/4/2019

Date received: 11/4/19

Name: Willard (Bill) Westre

Organization: PSE IRP TAG

Comment

Note: The TAG acknowledges the WUTC Staff petition for an IRP schedule exemption. This technical input is submitted in response to PSE's commitment to "continue to ... maintain and respond to public input". This technical input should be considered an integral part of the collection of 2019 PSE IRP documents. We appreciate PSE's commitment to also include these technical inputs in the 2021 PSE IRP.

In the May 22, 2019 Listening Session, PSE VP David Mills stated there was a growing need to improve electric transmission capacity over the mountains. The existing PSE transmission line that extends over Rockies to the Colstrip facility is the Montana Intertie and its westward extensions and has a limited capacity of approximately 1 GW. It is a High Voltage AC line.

The utility industry has reported on the technology to convert HV AC lines to High Voltage DC (HVDC). The major advantage of this technology is that it can increase transmission capacity by about 40%. Additionally, it reduces line loss. The conversion is cost effective on long lines such as the Montana Intertie and its extensions. Such a conversion would benefit PSE in increasing its ability to bring lower cost renewable Montana wind energy with its superior winter peaking performance to customers.

Of course, there would be down-time on the line for the conversion. But what better time than during the closeout of the Colstrip facilities to accomplish this.

As a member of PSE's Technical Advisory Group, I formally request that PSE post this letter on their 2019 IRP website and provide a written response to this question:

- Will PSE conduct a feasibility study in the next 6 months on converting the Montana Intertie and its extensions to HVDC to support scenario analysis in the next IRP?

Thank you,

Willard (Bill) Westre
Mechanical Engineer
PSE IRP TAG

PSE Response

PSE acknowledges the email sent by Willard (Bill) Westre on November 4. As requested, the email was uploaded at www.pse.com/irp. Mr. Westre is a 2019 IRP TAG Member.

Will PSE conduct a feasibility study in the next 6 months on converting the Montana Intertie and its extensions to HVDC to support scenario analysis in the next IRP?

No. The scope of such a proposal is outside local system planning for electric transmission and distribution. However, PSE would like to provide some additional background concerning this study. PSE and other utilities own the Colstrip Transmission System (CTS) as tenants-in-common under the Colstrip Project Transmission Agreement (CTA). A copy of the current CTA is on file with FERC in Docket No. ER11-4642. PSE's use of transmission capacity on the CTS is governed by the CTA.

PSE and other utilities have the right to transmission service over BPA's Eastern Intertie under the Montana Intertie Project Transmission Agreement (MIA). A copy of the current Amended and Restated Transmission Agreement between Bonneville Power Administration and Montana Intertie Users (MIA) is on file with FERC in Docket No. ER11-4195. PSE's right to transmission service over BPA's Eastern Intertie is governed by the MIA.

Studies and associated timelines are prescribed by the Federal Energy Regulatory Commission (FERC) under the Open Access Transmission Tariffs (OATT) on file with FERC. Studies impacting the CTS are conducted by NorthWestern Energy, on behalf of and in consultation with CTS owners. The CTA assigns the exclusive right to complete these studies to NorthWestern Energy in response to requests for interconnection and transmission service on the CTS. These studies would be based on the specific location, size and characteristics of the generator and the type of service requested. These studies would determine the impacts, the modifications needed, and the estimated costs of such modifications to the transmission system.

Comment #12: 2019 IRP Technical Input – Use latest renewable energy costs for IRP analyses

Date received: 11/5/2019

Name: Kate Maracas

Organization: Western Grid Group

Comment

Please note: the text below is an excerpt from the full comment. The comment can be read in full on the IRP website.

We formally request that PSE post this letter on their 2019 IRP website and provide a written response to these questions:

- Will PSE comply with the Washington Public Counsel Unit's request for disclosure of PSE's current RFP bid data under NDA, and if not, the justification for noncompliance?
- In light of the many energy economist expert projections that renewable energy and energy storage resource prices will continue to decline, will PSE provide substantive data to support its assertions that renewable energy/storage costs will increase during the IRP planning horizon?
- Will PSE provide justification for its assertions that low-cost renewable energy and battery storage is not the most prudent course of action?
- Will PSE provide evidence that responsive demand bids should not be a part of its future RFP inquiries, given that responsive demand will play an integral part in balancing essential flexibility between demand and supply resources?
- Can PSE provide evidence that refutes the projections of the aforementioned industry experts on forward cost reductions for renewable energy and storage?

Respectfully submitted:

Kate Maracas,
Managing Director,
Western Grid Group

PSE Response

PSE acknowledges the email sent by Kate Maracus on November 5. As requested, the email was uploaded at www.pse.com/irp. Ms. Maracus is a 2019 IRP TAG Member. Ms. Maracus re-submitted her letter on November 7 with some revisions and PSE uploaded the corrected version.

Will PSE comply with the Washington Public Counsel Unit's request for disclosure of PSE's current RFP bid data under NDA, and if not, the justification for noncompliance?

It is unclear when and where this request was made. However, PSE is obligated to protect commercially sensitive information obtained from third parties under non-disclosure agreements and confidentiality clauses.

In light of the many energy economist expert projections that renewable energy and energy storage resource prices will continue to decline, will PSE provide substantive data to support its assertions that renewable energy/storage costs will increase during the IRP planning horizon?

PSE utilizes the third party generic electric resource cost information and PSE staff does not recall making this statement. If PSE did state this, we would like to take this opportunity to clarify that we do not take a position concerning costs and of course desire renewable energy costs to decrease.

Will PSE provide justification for its assertions that low-cost renewable energy and battery storage is not the most prudent course of action?

PSE utilizes the third party generic electric resource cost information and PSE staff does not recall making this statement. If PSE did state this, we would like to take this opportunity to clarify that we do not take a position concerning costs and of course desire renewable energy costs to decrease. Specific project-based resource decisions are not made in the IRP.

Will PSE provide evidence that responsive demand bids should not be part of its future RFP inquiries, given that responsive demand will play an integral part in balance essential flexibility between demand and supply resources?

We agree. Demand response will play an integral part of the energy future.

As detailed in the November 15, 2019 IRP Progress Report, PSE is continuing to evaluate the best use cases for demand response, including its potential as a non-wires alternative for transmission and distribution investments. PSE filed a Demand Response RFP on Jun 11, 2018. The RFP called for demand response program offers to help meet capacity needs in program years 2019 to 2023. The RFP process is ongoing. Additional information about the RFP can be found online at www.pse.com/rfp.

Can PSE provide evidence that refutes the projections of the aforementioned industry experts on forward cost reductions for renewable energy and storage? (see Ms. Maracus' full email for the details concerning industry experts)

PSE utilizes the third party generic electric resource cost information and PSE staff does not recall making this statement. If PSE did state this, we would like to take this opportunity to clarify that we do not take a position concerning costs and of course desire renewable energy costs to decrease.

Comment #13: 2019 IRP Technical Input – Use best public participation practices in engaging the TAG

Date received: 11/5/2019

Name: Kate Maracas

Organization: Western Grid Group

Comment

Please note: the text below is an excerpt from the full comment. The comment can be read in full on the IRP website.

We formally request that PSE post this letter on their 2019 IRP website and provide a written response to these questions:

- Will PSE consult with Community Projects Managers Keri Pravitz and Renee Zimmerman to discuss ways in which they employ IAP2 for effective community engagement?
- Will PSE consider additional IAP2 training for the IRP team, and report back to the TAG on these topics via a response memo and/or the PSE IRP website?
- Will PSE commit to conducting the 2021 and all future PSE IRPs in accordance with IAP2 “Involve” guidelines?

Respectfully submitted:

Kate Maracas,
Managing Director,
Western Grid Group

PSE Response

PSE acknowledges the email sent by Kate Maracus on November 5. As requested, the email was uploaded at www.pse.com/irp. Ms. Maracus is a 2019 IRP TAG Member.

Will PSE consult with Community Project Managers Keri Pravitz and Renee Zimmerman to discuss ways in which they employ IA2 for effective community engagement?

Yes, the IRP team is reaching out to Keri Pravita and Renee Zimmerman.

Will PSE consider additional IAP2 training for the IRP team, and report back to the TAG on these topics via a response memo and/or the PSE IRP website.

PSE uses stakeholder engagement specialist who are trained in IAP2. PSE will utilize the IAP2 process and definitions to design the 2021 IRP stakeholder process and is currently reviewing possible IAP2 training for the IRP team. PSE considers this document a record of the response.

Will PSE comment to conducting the 2021 and all its future PE IRPs in accordance with IAP2 “Involve” guidelines?

The draft WUTC IRP rules state that the utility must inform, consult, and involve stakeholders in the development of its integrated resource plan and its two-year progress report. As a result, PSE plans to use the “inform”, “consult” and “involve” IAP2 guidelines in the development of the 2021 IRP stakeholder process.

Comment #14: 2019 IRP Technical Input – Make IRP data available

Date received: 11/5/2019

Name: Doug Howell

Organization: Sierra Club

Comment

Please note: the text below is an excerpt from the full comment. The comment can be read in full on the IRP website.

As TAG members, we formally request that PSE post this letter on their 2019 IRP website and provide a written response to these questions:

- Will PSE provide 2019 IRP input files to the Sierra Club under a nondisclosure agreement?
- If yes, when will the data be available?
- If no, what is the PSE rationale for not participating in this process which other utilities across the country have participated in?

Respectfully submitted:

Doug Howell – Sierra Club Beyond Coal Senior Campaign Representative

PSE Response

PSE acknowledges the email sent by Kevin Jones on behalf of Doug Howell on November 5. As requested, the email was uploaded at www.pse.com/irp. Mr. Jones and Mr. Howell are 2019 IRP TAG Members.

Will PSE provide 2019 IRP input files to the Sierra Club under a nondisclosure agreement?

Throughout the IRP process and past IRPs, PSE shares a large volume of input data used in the development of the IRP. The detailed data used in the development of the 2017 IRP is available on our website. PSE is willing to share all data that is not commercially sensitive or otherwise protected under non-disclosure agreements with third parties.

If yes, when will the data be available?

See above.

If no, what is the PSE rationale for not participating in this process which other utilities across the country have participated in?

PSE is obligated to protect commercially sensitive information obtained from third parties under non-disclosure agreements and confidentiality clauses.

Comment #15: 2019 IRP Technical Input – Shut down Colstrip

Date received: 11/5/2019

Name: Doug Howell

Organization: Sierra Club

Comment

Please note: the text below is an excerpt from the full comment. The comment can be read in full on the IRP website.

Colstrip is no longer a prudent investment. PSE customers are getting ripped off. PSE needs to immediately phase out Colstrip funding.

As TAG members, we formally request that PSE post this letter on their 2019 IRP website and provide a written response to these questions:

- Will PSE withdraw all financial support for Colstrip units 3 & 4 on or before December 31, 2025, consistent with Clean Energy Transformation Act objectives?
- Will PSE work with their Colstrip unit 3 & 4 partners to create a plan for all partners to transition away from Colstrip generated electricity?

Respectfully submitted:

Doug Howell – Sierra Club Beyond Coal Senior Campaign Representative

PSE Response

PSE acknowledges the email sent by Kevin Jones on behalf of Doug Howell on November 5. As requested, the email was uploaded at www.pse.com/irp. Mr. Jones and Mr. Howell are 2019 IRP TAG Members.

Will PSE withdraw all financial support for Colstrip units 3 & 4 on or before December 31, 2025, consistent with Clean Energy Transformation Act objectives?

Colstrip unit 3 and 4 will be out of PSE's energy supply portfolio on or before December 31, 2025. PSE will need to fulfill all legal obligations that may be associated with remediation, mitigation and the outcome of any related obligations concerning the peoples of Colstrip, Montana.

Will PSE work with their Colstrip unit 3 & 4 partners to create a plan for all partners to transition away from Colstrip generated electricity?

No. Each entity has its own set of customers and regulatory obligations that they must meet.

Comment #16: 2019 IRP Technical Input – Don't replace one fossil fuel with another fossil fuel

Date received: 11/4/2019

Name: Doug Howell

Organization: Sierra Club

Comment

Please note: the text below is an excerpt from the full comment. The comment can be read in full on the IRP website.

To this end, and with respect to the now ten- and twenty-five-year timelines to achieve this outcome, it seems imprudent for PSE to replace one fossil fuel-based source of electricity with another. The mandate is clear. The obligation of utilities is also clear.

As TAG members, we formally request that PSE post this letter on their 2019 IRP website and provide a written response to these questions:

- Will PSE commit to replacing their current fossil fuel electricity generation inventory only with electricity generation solutions with a zero or negative carbon emission footprint?
- If not, what situations do you believe would justify continued development of fossil fuel-based electricity generation systems?

Respectfully submitted:

Doug Howell – Sierra Club Beyond Coal Senior Campaign Representative

PSE Response

PSE acknowledges the email sent by Kevin Jones on behalf of Doug Howell on November 5. As requested, the email was uploaded at www.pse.com/irp. Mr. Jones and Mr. Howell are 2019 IRP TAG Members.

Will PSE commit to replacing their current fossil fuel electricity generation inventory only with electricity generation solutions with a zero or negative carbon emission footprint?

PSE is committed to complying with CETA. PSE does not make resource decisions as part of the IRP planning process.

If not, what situations do you believe would justify continued development of fossil fuel-based electricity generation systems?

PSE is a regulated utility and cannot make any assertion related to future resources. Resource acquisitions are managed through a separate process and PSE must comply with all applicable laws and regulations, including CETA and NERC/WECC for system reliability.

Comment #17: 2019 IRP Technical Input – IRP analyses should meet state CO2 reduction goals

Date received: 11/4/2019

Name: Doug Howell

Organization: Sierra Club

Comment

Please note: the text below is an excerpt from the full comment. The comment can be read in full on the IRP website.

As TAG members, we formally request that PSE post this letter on their 2019 IRP website and provide a written response to these questions:

- Has PSE identified their carbon emission reduction requirements needed to comply with Washington State carbon emission reduction goals and timelines?
- What carbon emission reduction derived requirements apply to the PSE electricity business?
- What carbon emission reduction derived requirements apply to the PSE gas business?
- Will PSE strive to accelerate their compliance with the Clean Energy Transformation Plan?
- Is PSE willing to commit to a stretch goal date to achieve 100% carbon free electricity?
- If yes, when will PSE publish this stretch goal date?
- If yes, will PSE constrain its electric IRP to achieve this stretch goal date?
- Will PSE constrain its gas IRP to stay within Washington State carbon emission reduction goals?
- Will PSE publish a gas IRP carbon emission reduction curve, showing its gas business contribution to Washington state carbon emission reduction goals and timelines?
- Will PSE publish a gas IRP carbon emission reduction curve, showing the date and carbon reduction path to transition its gas business to 100% carbon free?

Respectfully submitted:

Doug Howell – Sierra Club Beyond Coal Senior Campaign Representative

PSE Response

PSE acknowledges the email sent by Kevin Jones on behalf of Doug Howell on November 5. As requested, the email was uploaded at www.pse.com/irp. Mr. Jones and Mr. Howell are 2019 IRP TAG Members.

PSE thanks Mr. Howell for the questions. Unfortunately, at this time, we don't have detailed answers. These questions will help inform PSE's 2021 IRP.

Our customers want clean energy. We share their values and have been an early leader when it comes to transforming our energy supply, investing billions in renewable energy development and energy efficiency programs.

Our mission today is deep decarbonization and the reduction and mitigation of greenhouse gases. We will be coal free by 2025 and our electric system will be carbon neutral by 2030. We have industry leading programs like Green Direct and Community Solar that are driving more localized, customer-specific renewable resources. We are helping the state address transportation, its single largest source of emissions, by investing in electric vehicles as well as the development of LNG for maritime and commercial transportation.

As the nation's third largest utility owner of wind generation, we know the important role that natural gas plays in ensuring reliable, affordable energy to our customers when the wind isn't blowing or the sun isn't shining. We are also deeply concerned about the impact of methane emissions on our communities and

our planet, and are investing in renewable natural gas (RNG), leak reduction and damage prevention. We have also championed the adoption of transparent reporting metrics from wellhead to burner tip through our leadership roles on the American Gas Association and the Edison Electric Institute.

PSE is committed to participating in the WUTC's rulemaking process concerning CETA and the gas business. There are many unknowns associated with CETA compliance and PSE is not in a position to make any statements at this time about the acceleration of CETA compliance.

Comment #18: 2019 IRP Technical Input – Requesting that Puget Sound Energy treat energy efficiency spending as capital spending. This letter is in reference to UTC Docket No U-180907

Date received: 11/5/2019

Name: Michael Laurie

Organization: Vashon Climate Action Group

Comment

Note: The TAG acknowledges the WUTC Staff petition for an IRP schedule exemption. This technical input is submitted in response to PSE's commitment to "continue to ... maintain and respond to public input". This technical input should be considered an integral part of the collection of 2019 PSE IRP documents. We appreciate PSE's commitment to also include these technical inputs in the 2021 PSE IRP.

Many people have recognized for years that funding and support for energy efficiency is at a competitive disadvantage in trying to be treated equally as a supply resource to meet Puget Sound Energy's future resource needs.

One of the big disadvantages making it hard for energy efficiency to compete is that the WUTC sets PSE's allowed rates based on their spending on capital resources. Traditionally capital resources are things like coal plants, natural gas plants, wind projects, solar, and other projects that PSE either owns or purchases power from. Energy efficiency is different in that once the energy efficiency equipment is installed in a home or business, even if PSE paid a rebate for it, the business or homeowner is the owner of that resource.

But each of those energy efficiency items is acting like a mini-power plant in that it reduces the need for other energy sources. And even though it has not traditionally been thought of as capital equipment of PSE's, it certainly is in most cases thought of as capital equipment by the business or homeowner who had it installed, owns, and operates it.

This equipment is thought of as capital equipment by the businesses and homeowners and it acts like capital equipment in that it helps PSE address its resource needs. So, why not try out the idea of more fully treating it as capital equipment and ask that the WUTC treat it as such in terms of allowing PSE a rate of return on it just like is allowed for power plants.

Shifting to treating energy efficiency as capital equipment would remove one of the main disadvantages of investing in it, and this would allow PSE to invest more fully in this still very large energy efficiency resource that is one of the lowest cost resources, well proven, climate friendly, and reliable. Continuing to stick with not counting energy efficiency as a capital resource, will continue to lead to PSE buying resources that are often more costly than energy efficiency.

I request that PSE post this letter on your 2019 IRP website and provide a written response to these questions:

- Will PSE develop an alternate ratemaking proposal to the UTC, including treatment of efficiency investments as a capital resource suitable for return on investment?

Respectfully submitted:

Michael Laurie
Vashon Climate Action Group
Sustainability Consultant
Watershed LLC

PSE Response

PSE acknowledges the email sent by Michael Laurie on November 5. As requested, the email was uploaded at www.pse.com/irp.

Will PSE develop an alternate ratemaking proposal to the UTC, including treatment of efficiency investments as a capital resource suitable for return on investment?

Thank you for this suggestion. PSE carefully analyzes and considers various ratemaking approaches for every general rate case and then proceeds accordingly. Your suggestion has been shared with PSE's department of State Regulatory affairs.

Comment #19: 2019 IRP Technical Input

Date received: 11/7/2019

Name: Court Olson

Organization: IRP TAG member and consultant to commercial building owners

Comment

Hello Irena.

I'm writing to once again express my concern that the IRP process has inadequately addressed the energy conservation and efficiency potential for buildings. I'm speaking just briefly here because I've been out of town recently due to family health issues, and because I've previously brought this matter up to you, along with others at PSE in some detail.

Before I summarize my talking points, I want to express my substantial disappointment in the fact that in January of this year I was promised and invited to do a presentation on this subject to the IRP TAG. PSE later scheduled my presentation for the August IRP TAG meeting. In early July, as requested, I met with your PSE energy efficiency team to discuss this subject, and, as requested, I followed up a few weeks later by sending you my planned Power Point presentation with 28 slides. Not long after that, the August TAG meeting that I was schedule to present at was cancelled. As of today, I wonder why it hasn't been rescheduled.

Though I take the cancellation of my IRP TAG presentation to be personally disrespectful, more importantly, I see this as another indication that PSE continues to undervalue the potential for deep energy efficiency savings in buildings.

Now for my brief summary on this subject. Among the 28 slides that I was scheduled to present the August IRP TAG meeting, I included the following four key takeaways:

1. Buildings are major energy consumers. Roughly 80% of the power on our national grid goes to buildings.
2. New buildings are increasingly more energy efficient. This is surely a significant reason why PSE electrical demand has stayed essentially flat in recent years even though population and customers have increased.
3. PSE demand forecasts for both electricity and gas overlook current and future demand trends. The State Energy code will continue to tighten and interest in energy efficiency in existing buildings continues to grow.
4. Society as a whole must realize the economic, social and environmental value of deep energy efficiency in buildings. Utility companies have a role to play in this.

My last PowerPoint slide listed ten actions that Utility companies like PSE could take to accelerate conservation and energy efficiency efforts.

1. Stop forecasting perpetual demand growth in gas and electricity usage.
2. Support and promote Washington PACE legislation passage in 2020.
3. Provide new long-term loan programs for deep efficiency improvements.
4. Establish a MEETS program to "buy" saved energy.
5. Incentivize demand controllable appliances & hot water heaters. Ramp up DR.
6. Incentivize space heating fuel switching from gas and oil furnaces to efficient electric heat pump systems. (A State law amendment may be needed here).
7. Promote holistic building envelope enhancements aligned with established Passive House design standards.
8. Raise the efficiency incentive bar or provide a graduated incentive structure based solely upon performance outcomes tied to an achieved energy use intensity. Generally, "pay for performance" incentives should be offered for demand reductions over 30%.

9. Target extra efficiency promotions and incentives specific to local areas where transmission and/or generation capacity infrastructure is expected to be stretched.
10. Reduce the long list of incentives for individual efficiency measures. Focus on whole building incentives. Consider limiting individual isolated single measure incentives to just the following: efficient plug-in appliances, appliance demand response control devices, switching to LED lighting, and daylight and occupancy sensing controls.

This concludes a brief summary of my thoughts on conservation and energy efficiency.

As a 2019 Puget Sound Energy Technical Advisory Group member, I formally request you post this letter on your 2019 IRP website and provide a written response.

Sincerely,

Court Olson
BSCE, BSCM, MSCE, LEEDap, CCM, DBIA
IRP TAG member and consultant to commercial building owners.

PSE Response

PSE acknowledges the email sent by Court Olson on November 7. As requested, the email was uploaded at www.pse.com/irp. Mr. Olson is a 2019 IRP TAG Member.

Thank you for your thoughts.

PSE filed its Biennial Conservation Plan (BCP) with the WUTC on November 1, 2019. The BCP contains the full range of PSE's energy efficiency programs and activities.

Details concerning PSE's Biennium Conservation Program (BCP) can be found on the UTC website at - [PSE 2020 to 2021 Biennium Conservation Program](#) (please click on the icon next to the docket # and for access to all the documents)

Comment #20: 2019 IRP Technical Input

Date received: 11/7/2019

Name: Court Olson

Organization: IRP TAG member and consultant to commercial building owners

Comment

Hello again Irena.

In alignment with my separate letter on the subject of conservation and energy efficiency in buildings, I wish to make the following request.

I understand that PSE has an annual conservation budget of about \$100 million. I ask that PSE assign a significant portion of this budget to offer low interest loans for deep energy efficiency retrofits. My “deep energy efficiency” I mean retrofits that result in energy savings of over 40%.

Please give this request serious consideration.

As a 2019 Puget Sound Energy Technical Advisory Group member, I formally request you post this letter on your 2019 IRP website and provide a written response.

Thank you.

Court Olson

BSCE, BSCM, MSCE, LEEDap, CCM, DBIA
IRP TAG member and consultant to commercial building owners.

PSE Response

PSE acknowledges the email sent by Court Olson on November 7. As requested, the email was uploaded at www.pse.com/irp. Mr. Olson is a 2019 IRP TAG Member.

This suggestion is not in the best interest of all PSE’s customers.

As stated previously, PSE filed its Biennial Conservation Plan (BCP) with the WUTC on November 1, 2019. The BCP contains the full range of PSE’s energy efficiency programs and activities.

Details concerning PSE’s Biennium Conservation Program (BCP) can be found on the UTC website at - [PSE 2020 to 2021 Biennium Conservation Program](#) (please click on the icon next to the docket # and for access to all the documents)