



Tacoma Power IRP Public Workshop #4

Monday, June 29, 2020

Date: June 29, 2020

Time: 1:00-3:30 P.M.

Location: Zoom

Attendees

Frank Boykin Jr., The Black Collective
Elly Claus-McGahan, Citizens Climate Lobby
Annabel Drayton, NWECC
Tony Garcia, MultiCare
Todd Hay, Sustainable Tacoma Coalition
Bruce Martin, WestRock
Elizabeth Osborne, NW Power and Conservation Council
Ruth Ann Schonbachler, ratepayer
Connor Tompkins, Praxair
Graham Vanderschelden, Northwest Seaport Alliance
Lauren Walker Lee, Tacoma Community House
Kirsten Watts, Bonneville Power Administration
Julia Zuckerman, Clearway Energy

Staff

Michael Catsi, Tacoma Power
Rachel Clark, Tacoma Power
Keil Drescher, Tacoma Power
Ryan Fulleman, Tacoma Power
Ray Johnson, Tacoma Power
Ahlmahz Negash, Tacoma Power
Lisa Rennie, Tacoma Power
Jeremy Stewart, Tacoma Power
Jeff Stafford, Tacoma Power
Danielle Szigeti, Tacoma Power
Scott Burns, PRR
Mila Lassuy, PRR
Jenny Thacker, PRR

1 Welcome

Jenny Thacker welcomed the group and reviewed the agenda. Scott Burns discussed Zoom basics and encouraged attendees to ask questions via the chat or by using the “raise hand” function.

2 Portfolio Performance

Rachel Clark from Tacoma Power’s Integrated Resource Planning group briefly reviewed the portfolios that were considered as part of this process. She made clear that some of the results may be changed slightly following this meeting and committed to sharing any changes with IRP Workshop members.

CETA Compliance:

Ahlmahz Negash reviewed how the portfolios performed against the CETA compliance metric. All portfolios, with the exception of one in which the BPA contract is not renewed and not replaced with any other resources, meet and exceed CETA compliance. This is not a portfolio that Tacoma Power would consider anyway because it is not resource adequate.

With the exception of one portfolio with a small amount of natural gas, the only way that carbon enters the portfolios considered is through market purchases, which are not considered clean because agencies do not know where the energy comes from.

Question:

Is it possible to buy clean energy?

Yes. It is possible to buy specified clean products. However, these are typically purchases made ahead of time and not in the real-time market. Our models are only able to model real-time purchases. For the purpose of this evaluation we assumed we would be purchasing from the Mid-C market. Clean energy purchases ahead of time would not typically be the same price as our market price assumptions.

Resource Adequacy:

Rachel reviewed the portfolios performed against resource adequacy standards before the 2028 BPA renewal decision.

For the current portfolio without Columbia Basin Hydro contract renewal:

- Normalized Expected Underserved Energy (NEUE) standard was not met in 20% of years
- Loss of Load Expectation (LOLE) standard was not met in 5% of years
- Loss of Load Hours (LOLH) was always met

In most cases, any portfolios that did not meet adequacy standards fell short because of one particularly bad year, with low inflows and cold weather. Renewing the Columbia Basin Hydro contract does not significantly improve the adequacy, as it primarily provides power in the summer and the largest capacity shortfalls are in the winter. Columbia Basin Hydro ends up acting as a surplus resource that is likely to cost more than could be earned by selling it back into the market and, as such, is not likely to be renewed.

Rachel then reviewed the portfolios following the 2028 BPA renewal decision. She highlighted four key outcomes:

- Power supplies are *always adequate* when Tacoma Power renews the BPA contract with Shapeable Block and doesn't reduce the amount Tacoma Power receives from BPA.
- Power supplies are *mostly adequate* in portfolios in which Tacoma Power renews the BPA contract with Slice and doesn't reduce the net requirement.
- Power supplies are *mostly adequate* in most portfolios when Tacoma Power renews BPA with Shapeable Block and "diversifies" by reducing the amount taken from BPA slightly, but *mostly inadequate* when Tacoma Power diversifies with Slice.
- It is *very difficult* to replace BPA primarily with renewables.

Questions:

Are the times when these portfolios are resource inadequate in winter?

Yes, winter is where we have the largest shortfalls that push us below the adequacy standard.

Why does slice with solar work and slice with wind not work?

Resource adequacy issues are primarily wintertime issues. The tradeoff affects Tacoma Power differently when our BPA resources are reduced. Wind produces much more in the wintertime than solar, but it is variable and when we take away the stability of BPA, that variability in the winter is problematic. Solar takes very little of our BPA resource away in the wintertime and thus doesn't affect our resource adequacy as much.

What is the difference between Eastern Washington Wind and Gorge Wind for LOLE?

Currently, both are modeled with slightly different profiles. We seem to be getting more Eastern Washington wind than Gorge wind at the right time in our current model, but this does not mean that we would definitely rule out Gorge wind if we were to find that a wind resource was a good fit.

Cost vs. Financial Risk:

Rachel discussed the portfolios in terms of their cost vs. financial risk assessments. She highlighted four key takeaways:

- Replacing BPA primarily with renewables is not only infeasible but also costs more and is riskier financially than BPA portfolios.
- Adding pumped storage or a generator at Cowlitz presents higher financial risk and also presents significant licensing risk that is not accounted for in the current financial risk analysis.
- Small adjustments to Slice/Block portfolio (like adding Demand Response) could eliminate adequacy concerns for less cost than switching to the Shapeable Block product.
- Slice/Block is the lowest cost and has the lowest financial risk but presents some potential adequacy concerns.

Jenny and Rachel led the group in a poll to determine how stakeholders prioritized cost, financial risk, and adequacy concerns. 15 of the 20 participants in the call participated in the poll. Of those 15, a slight majority (8) prefer to prioritize portfolios with no resource adequacy risks first. Four respondents prefer portfolios with the lowest financial risk first, one prefers the lowest expected cost, and two participants expressed that they felt differently than the options presented. One respondent who answered in this “other” category explained that she felt uncomfortable placing one factor above any other, and that they needed to be considered holistically. The other respondent who chose “other” explained that she would like to see a priority placed on non-hydro renewables like wind and solar above all other options.

Questions:

What is demand response?

Demand response is when customers modify their energy consumption in response to an economic or reliability signal. Examples range from demand response enabled thermostats to flexible industrial loads.

Carbon Emissions:

Rachel discussed the portfolios in terms of their carbon emission rates. She stressed that all of Tacoma Power’s portfolios are very “clean” compared to the US average because the only source of emissions in the portfolios considered is unspecified market purchases, and she highlighted three key takeaways:

- Portfolios with pumped storage result in more buying and selling, which increases carbon emissions.
- High renewables portfolios result in more buying and selling, which increases carbon emissions.
- Most Slice/Block portfolios result in slightly lower emissions.

3 Preferred Portfolio:

There are some portfolios, such as those that do not include BPA contract renewal, that are easy to cut, but there are others more difficult to choose between. While there is no specified preferred portfolio at this time, Rachel reviewed key takeaways related to portfolio decisions that will inform the eventual preferred portfolio choice.

- Before 2028 BPA Renewal decision:
 - **Adequacy concerns:** Tacoma Power needs to identify a strategy to eliminate minor adequacy concerns (e.g. small Demand Response investment, participation in interim Resource Adequacy program, or other)
 - **CBH Renewal:** Tacoma Power is unlikely to recommend CBH renewal, as it does not improve adequacy, and is unlikely to be offered at a sufficiently low price to make it cost-effective.
- Following 2028 BPA Renewal decision:
 - **BPA Renewal:** BPA renewal is more feasible, less costly and has a lower risk financially while also resulting in lower portfolio emissions than a renewables-heavy portfolio.
 - **BPA Product Choice:** Slice/Block product is promising from a cost, financial risk and emissions standpoint but Tacoma Power will need to make some adjustment to the portfolio to avoid occasional resource adequacy issues.
 - **BPA Diversification:** If Tacoma Power does diversify BPA, a small amount of solar diversification looks most promising but will not solve adequacy concerns.

Questions:

Was there a right answer, a wrong answer, or anything unexpected from your perspective, when people added their opinion in the poll?

There wasn't a right or wrong answer. Priorities concerning cost, resource adequacy and risk are a judgement call. Rachel did think it was interesting that resource adequacy was generally prioritized above other options. **Is there an adequacy standard that Tacoma Power is charged to meet? Or is the goal 100%?**

Our goal is to meet 100% of the standards we set for ourselves, but there isn't a prescribed adequacy standard. In this IRP, we are using three different standards: magnitude, duration, and frequency of potential shortfalls.

If all three priorities are used, how are they weighted?

We've talked about developing a weighting system, but right now there is no definitive answer for this. At this time, it comes down to the values of the stakeholders, the utility board, and the customers.

A participant expressed that there were likely as many different reasons as there were people on the call for choosing adequacy as a priority. She chose to prioritize resource adequacy because when there is not enough power, the people who endure the worst consequences are those with the fewest resources. She encouraged Tacoma Power to be transparent about any hidden costs to ensure resource adequacy that hadn't been made clear.

This is a really valid point – if Tacoma Power were to have an adequacy event that required resources, the costs could be very large and aren't fully taken into account with our financial risk metric.

4 Impacts of Climate Change

Danielle Szigeti presented on how this IRP process modeled the impacts of climate change. This is the first time that Tacoma Power has tried to quantitatively address these impacts in an IRP process. This process looked at four aspects of the plan related to climate change: temperature, load, inflows, and system generation. Danielle shared the following takeaways for each:

- Temperature
 - Daily maximum and minimum temperatures were, on average, higher in the three climate change scenarios as compared to historical actual temperature but that one climate model still projected very cold temperature extremes.
 - This information served as an input for the load simulations.
- Load
 - Generally, Tacoma Power gets more load with colder temperatures. Since temperatures in these scenarios were higher on average, the average loads were lower under climate change models. Two of the climate model projections results in peaks that were also lower, while one resulted in peaks that were similar to projections using historic temperature data.
- Inflows
 - Climate change greatly affects the timing and amount of inflows. Inflows are generally higher in the climate change data. Inflows into the Snake River in the BPA system in the climate change models in particular are much higher than have been seen historically.
- System Generation
 - Total system generation is higher under climate change scenarios, likely because there is more water available overall.

Questions and discussion:

Rachel and Jenny led the group in a discussion of implementing climate change as an element of this analysis. Of those that answered the poll, more participants would like to see climate change modeled in the core data analysis in future IRPs. One participant expressed that she preferred it analyzed separately, as this highlights its importance.

Are you thinking of also developing storage with wind power?

This is something we could consider for the next IRP. While Tacoma Power wants to examine as many technologies as possible, there are resource and time constraints on fully researching all new technologies. With that said, Tacoma Power does keep track of emerging technologies and will work to model as many of the promising ones as is possible.

Is there more generation or more generation *capacity* under climate change?

We don't have this answer exactly right now, but likely both.

Are the outcomes of the sensitivity analysis consistent with the Power Council’s climate change analysis?

We won’t know for sure until the power plan comes out in 2021. However, preliminary results from Power Council analyses suggest that the adequacy impacts will likely be different for Tacoma Power vs. the region as a whole. Because our peaks are in the winter and our adequacy issues in the winter, the warmer winter temperatures generally result in fewer adequacy concerns. The Power Council analysis conducted so far shows more regional adequacy problems in the summer.

5 IRP Action Items:

Ahlmahz reviewed the immediate next steps for the 2020 IRP process, as well as the list of action items following this IRP, in the next two years and the next 10 years. Graphics with this information are below.

Next steps for 2020 IRP



Draft List of Action Items Following 2020 IRP

	Next 2 years	Next 10 years
Resource Acquisition/Retirement	Acquire 2-year CPA potential Notify parties of CBH renewal decision	Acquire 10-year CPA target
Further Investigation into Resources	Actively participate in discussions with BPA on future product options Conduct DR “potential assessment” Further investigate value of solar diversification	Continue to follow development of new technologies Pilot cost-effective DR options
Continue Improving Modeling & Analysis	Refine approach to modeling DR Model EE as a resource in system model (SAM) Refine climate change modeling Incorporate impacts of electrification Update models to include most recent weather years Improve WECC modeling of storage	Continue improving functionality of SAM
Equity	Develop metric(s) to account for equity in resource acquisition decisions	Fully incorporate equity into resource acquisition decisions
Public Input	TBD	TBD

6 Feedback for Next IRP Process

Jenny and Rachel thanked the group again for their participation throughout the IRP process, and encouraged participants to share their feedback for future processes.

One participant emphasized a need for equity and ensuring all the right people are at the table. He acknowledged that the intention of getting everyone to the table was there, but in practice it didn’t work as well. While this may have in part been due to COVID-19, he encouraged the team to consider including a broader, public element, such as an open house or other community meetings, to bring the process to more people.

A few participants agreed that in-person meetings are preferable to digital meetings but understood that COVID-19 took that option away for this round. One participant suggested using an alternative to Zoom, as security concerns have led some employers to not allow employees to access Zoom on employer computers.

Several participants would like more opportunities to engage between IRPs, and many participants suggested that they would like to have more opportunities for input during the IRP process. They liked the polls and the discussions and encourage Tacoma Power to incorporate more of those.

Several participants expressed their gratitude for the opportunity to participate in this process. They found it informative, helpful, and engaging.