



# Tacoma Power 2022 IRP Workshop #1

Monday, December 20, 2021

## PARTICIPANTS

Name	Representing	Name	Representing
Pat Babbit	City of Tacoma	Rachel Clark	TPU – Meeting Lead
Chrissy Cooley	TPU Board Member	Haley Saul	TPU – Facilitator
Annabel Drayton	NW Energy Coalition	Ahlmahz Negash	TPU – Project Team
Kyla Wilson	Pierce County Sustainable Resources	Danielle Szigeti	TPU – Project Team
Graham VanderSchelden	NW Seaport Alliance	Gertie Joiner	TPU
Paul Munz	BPA	Michael Catsi	TPU
Katie Ware	Renewable Northwest	Dave Rosholm	TPU
		Kyle Frankiewich	TPU
		Ray Johnson	TPU
		Keil Drescher	TPU

## NOTES

TIME	ITEM	LEAD
2:00 P.M.	Welcome	Rachel Clark
2:05 P.M.	<b>Objective &amp; Agenda Review</b> <ol style="list-style-type: none"> <li>1. Reintroduce Tacoma Power’s 2022 IRP Framework</li> <li>2. Share how the IRP will be updated in 2022</li> <li>3. Provide feedback on resources we’re considering</li> </ol>	Haley
2:10 P.M.	<b>Ice Breaker</b> Menti Survey   What is the most interesting energy transformation development you’ve heard this year? Responses: <ul style="list-style-type: none"> <li>• Solid state batteries</li> <li>• Gravity energy storage</li> <li>• Hydrogen use for sure</li> <li>• Green hydrogen!</li> <li>• Green hydrogen</li> <li>• Renewable energy to create hydrogen</li> <li>• Hydrogen power for maritime and potentially vehicles</li> <li>• Green hydrogen hubs</li> <li>• Western Resource Adequacy Program (WRAP) + organized markets in the west</li> </ul>	Haley
2:20 P.M.	<b>IRP 2022 Introduction</b> Rachel briefly shared:	Rachel Clark

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- That the 2022 IRP is an update with some updates to inputs and a few additions but not as many changes as we would do in our four-year refresh.
  - Focus areas for the 2022 IRP.

See PowerPoint for more detail.

**Question** | Can you elaborate on what electrofuel load is? (Kyla)

- Ray: Green Hydrogen, Green Ammonia, Formic Acid, not strictly green hydrogen. But we expect green hydrogen to be the most likely customer under our electrofuel pilot rate.
- Keil: Hydrogen or Hydrogen carriers that could be used as a fuel (e.g. fuel cell). There are companies looking to take advantage of that. Long term investors. Lots of people looking at that rate to produce fuel that's not carbon based.
- Michael Catsi: Hydrogen can also be used in the decarbonization of industrial processes

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**2:30 P.M.**

### **Modeling Framework Discussion**

Rachel Clark

Rachel briefly shared several facts of Tacoma Power's IRP planning process

- The IRP is planned out 20 years
- The different conditions that are analyzed to determine how Tacoma Power's portfolios/resources will perform
- Tacoma Power uses different scenarios to consider how our portfolio of resources would perform under different future states of the world
- Tacoma Power uses probabilistic modeling to address yearly variability in things such as weather and water
- Tacoma Power's modeling framework using Aurora (3<sup>rd</sup> party) and SAM (internally built)

See PowerPoint for more detail.

**Question** | Can you explain why we look at gas when TPU doesn't have natural gas generation? (Keil)

- Rachel: we don't have natural gas generation and aren't considering it. However, it's used by a lot of other utilities - the thing that shuts on and off easily. As a result, it's a major determinate of power prices, and power prices affect us because we buy and sell power on the market. We need to do this to balance our supply and demand.
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- Ahlmahz: Gas is what tends to be called the marginal resource (the last one that gets turned on and called as a resource). The cost of the marginal resource tends to be what sets the market price, and natural gas is usually that resource.

**2:50 P.M.**

**BREAK!!**

**2:55 P.M.**

**Key Changes & Model Input Updates | Prices**

Ahlmahz Negash

Ahlmahz presented several items regarding the Aurora model

- Updates to the database made by Energy Exemplar (3<sup>rd</sup> party responsible for Aurora)
- Updates made by Tacoma Power and the effect they had on the outputs

See PowerPoint for more detail.

**Question** | On the scenario slide for carbon policy: Is social cost of carbon just included in the Carbon Policy Accelerates scenario or elsewhere as all? (Annabel)

- Ahlmahz: In Washington state, we included the social cost of carbon in the base case and all other scenarios. For the Carbon Policy Accelerates scenario, it was more stringent than in the base case scenario and included throughout the WECC.

**Question** | I know that early on, Rachel mentioned that you all were planning to model what it would look like if the lower snake river dams were removed. Is that included in AURORA model runs? (Annabel)

- Rachel: this is just something that is covered just in our system model. When we run this analysis, our market prices won't reflect the removal of those dams.
- Ahlmahz: It's not reflected in the price forecast WECC wide, because we don't know how high up prices would increase. Aurora is monthly allocations of energy so, for hydro, removing a resource isn't as straightforward as removing a dam. It's possible to do, but would take a lot of work.

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**3:20 P.M.**

**Resources Considered for 2022**

Rachel Clark

Resources Tacoma Power is planning to consider:

- Tacoma Power hydro
  - BPA contract
  - Solar
  - Wind (various locations)
  - Demand response
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- Storage
  - Small modular nuclear reactors
  - Conservation

A survey was taken asking participants, "Do you have any concerns about the resources considered for the 2022 IRP?"

Responses:

- 1 - I have concerns about the resources being considered by Tacoma Power in 2022
- 1 - I have concerns that there are resources NOT being considered by Tacoma Power in 2022
- 6 - I have NO major concerns

**Question** | On the small modular reactor, I'd be curious to know what assumptions and cost assumptions are being used for that. We still have to learn more on how you've built out demand response into the modelling, and learning about other resources. (Annabel)

- Rachel: We weren't planning on sharing the nitty gritty within our workshops but we are planning on sharing price assumptions electronically and allow people to review and comment outside of meeting time.
- **ACTION** | Rachel to send assumptions related to small modular reactor to Annabel once we have assumptions.

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**3:45 P.M.**

**Next Steps**

Rachel Clark

Workshop 2 | March 2, 2022

Workshop 3 | June 30, 2022

Workshop 4 | July 19, 2022

See PowerPoint for more detail.

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