Fuels Advisory Committee
Northwest Power & Conservation Council
January 27, 2025

Tomás Morrissey, NWPCC, greeted the room at 1:00. Chad Madron, NWPCC, explained how to best interact with the Zoom platform. Morrissey then called for attendance.

Shannon Souza, OCEAN, wrote Not a question, but comment to track on the call out for bio-based fuels in the Unleashing American Energy EO. A lot of our H2 thinking has been around electrolytic - this call out in the EO might impact our planning around biogenic based clean fuels, in the question pane [Slide 6].

Stephanie Celt, WA Dept of Commerce, asked what staff means by producing hydrogen with electricity. She wondered if that meant electrolysis specifically or something broader [Slide 11]. Morrissey answered that they are specifically talking about electrolysis but agreed that many production methods use electricity.

Rebecca Smith, Transformist, asked if staff is considering operational characteristics that might affect electrolyzer efficiency [Slide 14]. She pointed to examples like performing as a DR asset or at a lower capacity factor. Morrissey said that will be discussed at a future meeting but previewed that staff are leaning towards making hydrogen a fairly flexible, curtailable load. He said lowered capacity factors drive costs up and he did not know how that would affect electrolyzer efficiency. Morrissey asked for ideas on how to address this.

Feedback on High level pathways, Energy need [Slide 17].

Dan Kirschner, NWGA, called staff assumptions reasonable, and the work diligent. He stated that he is not an expert in this space but thought it was a "not a terrible" first pass. Morrissey appreciated the feedback, agreeing that he is presenting a rough range.

Steve Schueneman, PSE, thought the long-range forecast seemed to agree with the state commerce report for total energy demand. He asked if Morrissey agreed. Schueneman then asked how much hydrogen is expected to be made in state verses arriving by pipeline, wondering how transmission constraints were modeled.

Morrissey was not 100% sure if this forecast agreed with the state commerce report, but thought high case hydrogen usage was in the same ballpark, if not a bit lower. He added that electric energy usage might be a bigger step down.

Morrissey then addressed transmission, saying it would require more thought. He pointed to staff's approach of modeling 17 different zones as a way to get a feel for possible transmission constraints.

Schueneman said he is also wrestling with these issues as the Pacific Northwest is already power constrained, and these are potentially large loads. He thought the amount of hydrogen coming through via pipeline, outlined in the commerce report, is closer to reality. Schueneman added that a pipeline also acts as a storage vehicle. Because of these factors, he thought pipelines would be doing the bulk of the work in the 2045-50 range.

Celt agreed that the presented numbers are relatively in line with the Commerce report, which she called somewhat aggressive in assuming full, net-zero conversion of the economy by 2050. She also didn't anticipate as much out-of-region imports out of Washington but said that could be different for Montana.

Celt also agreed with earlier comments about power supply and transmission capacity, saying there is not enough power to produce that much hydrogen.

Dan Serres, Columbia Riverkeepers wrote, This is a really basic question: how does this compare to a large dam, like McNary? John Ollis, NWPCC, reported that McNary is 1100MW. He said the Northwest serves between 40-90% of its load by hydro and the entire fleet delivers between eight to 18,000aMW a year.

Morrissey said 22,000aMW is the total Northwest load, as defined by the Power Act, with peaking in the mid 30s. He pointed to large potential loads on the horizon like data centers, EVs, and a bigger push toward electrification.

Ollis wrote, We have a webpage on the Council site that gives a ballpark of the aMW our current NW system generation [Slide 18].

DRAFT 9th Plan Gas Price Forecast

Kirschner asked why [Slide 23] is represented in nominal dollars as opposed to real dollars. Morrissey explained that he tends to go back and forth, saying this chart starts with 2024 real dollars which takes the inflation out. He added that the Plan tends to use real dollars.

Kirschner asked about the inflation accelerator in nominal dollars. Steven Simmons, NWPCC, answered that the forecast is between 2% to 2.5% adding that the data comes from S&P.

Kirschner said his organization uses the Council forecast and wants to make sure it's correct. Simmons said there are different inflation forecasts out there.

Kirschner asked if there are any other methodologies to forecast seasonal volatility [Slide 27]. Morrissey said not so much on the gas side, but said this work is closer to how staff did hydro forecasting. He added that staff now use a climate change data set for hydro. Kirschner said this seems reasonable, asking if staff talked to other experts to validate this

approach. Morrissey said that is the goal of this meeting and offered to reach out to utilities for one-on-one calls.

David Clement, NEEA, wrote, What is the time interval of the gas price forecast? Daily, monthly? In the question pane. Simmons answered monthly.

Aliza Seelig, PNUCC, asked if the volatility presented will be correlated to or independent of weather. Morrissey moved back to [Slide 26] to show historical prices specific to Sumas, saying some spikes are weather related, while some are a combination of factors like weather, pipeline issues, and low inventory.

Ollis added that these events have some seasonality to them and monthly shapes are applied. He said this is not random volatility.

Kirschner said [Slide 28] shows that, based on historical data, this is trying to demonstrate periodical excursions but not necessarily on the year shown. Morrissey agreed with this assessment adding that the graph on the slide represents just one of 10 forecasts.

Kirschner moved to [Slide 27], asking if this is a combination of forecasts that shows that there will be a price excursion every year. Morrissey agreed, saying there is a possibility of volatility every year.

Clay Riding, NW IW, cautioned against including an unusual event like the West Coast pipeline upset and suggested muting it. He asked if staff plan to include the event or not. Morrissey said staff have concluded that it represents a big system issue like the addition of a large LNG facility or some other event that could cause a sever price bump during the cold months.

Scott Johnson, NW Natural, called the forecast reasonable [Slide 31] adding that it is different than the way his organization does price modeling. He offered to connect Morrissey with his modeling team for further discussion.

BREAK

Johnson called the transportation costs illustrated on [Slide 34] good. He noted that the 37.25 is the rate in place but will escalate over the next few years due to an emissions reduction program. Johnson said he expects it to reach closer to 40 cents, calling it a demand charge for the ability to use whenever you want while volumetric is paid only when used. Because of this Johnson said you pay more for volumetric when the two are rolled up together so staff might want to break them apart.

Morrissey said they could do either, asking if it matters if the customer is buying 100% firm. Johnson said that depends on the contract structure, giving examples of different

configurations. He thought that most all the power plants in the region have firm, making it okay to go with the outlined assumption.

Morrissey proposed breaking the two apart and sticking with the 40 cents for simplicity.

Riding thought the 40 cents made sense for added resources. He said the dispatch model poses a different questions as utilities would use the volumetric at that point. Riding approved of using the 40 cents as a marker.

Johnson stated that Port Westford came off of NW pipeline and on to KB pipeline. He said KB has its own costs but would be difficult to model.

Riding said it's "either/or" for rolling up or breaking apart rates for western Washington and the Evergreen expansion. He said the 25-year rates should begin to peter out and suggested assuming the 40 cents as they are not additive.

Serres wrote Can you clarify what you anticipate happening at Port Westward? In the question pane. Simmons clarified that Serres was asking about transportation costs. Serres answered yes. Morrissey said they would probably use the 40-cent charge. Serres said his question was answered.

Ollis added that staff do things symmetrically which requires more information about the laterals. He said if members gave him information he could see if it was worth trying.

Riding said he didn't think it was worth the effort as the laterals do not play a big role in western Washington.

Johnson said there are a few in northern Washington that route NW pipeline and go across the Cascade system. He was not sure about the cost. Riding added that these are not big and are largely peaking systems.

Johnson noted that [Slide 25] is missing one segment. He said the two that are represented on the slide are very close. He said staff must include the Nova system charge for AECO, reporting that NW Natural has it at 16.4 cents in January.

Johnson added that this is mileage based resulting in pennies going in different directions.

Ken Ross, Fortis BC, wrote, Need to leave the call for another meeting. Thanks for the discussion. I will discuss info with folks here and consider any additional feedback we might have.

Johnson pointed to a fuel rate for gas transported which changes every six months. He said this means you lose between 1% to 2.5% of your fuel. Johnson said these numbers bounce around a lot, calling them similar to the variable charge.

Riding thought you could apply the 1% at Williams and the 2-2.5% for the others and apply it to the gas charge. Morrissey asked if this was for compressor usage. Riding said most is for compressing fuel, adding that there is a lot of volatility. Morrissey thanked him and said he try to build it in.

Riding thought that California will have higher prices [Slide 36] and suggested using basis as opposed to pipeline to find the differentiation in dispatch prices. He added that California prices are "nuts" quoting numbers like $4.50 to transport SoCal. Morrissey said they already use basis pricing. Riding offered to talk more offline.

Morrissey offered to talk to people at CAISO and other CA prices. He ended the meeting at 3:00.

Attendees via Zoom

Jennifer Light	NWPCC
Chad Madron	NWPCC
Tomás Morrissey	NWPCC
Steven Simmons	NWPCC
Dan Kirschner	NWGA
David Clement	NEEA
Mark Sellers-Vaughn	CNGC
Anna Kim	ORPUC
Michael Brutocao	Avista
Rebecca Smith	Transformist
Steve Schueneman	PSE
Haixiao Huang	NW Natural
Frank Brown	BPA
Hannah Wahl	PSE
Landon Snyder	Snohomish PUD
Brian Dombeck	BPA
Heather Nicholson	Orcas Power & Light
Mary Kulas	PPC Consultant
Aliza Seelig	PNUCC
John Fernandes	Ulteig
Abbey O'Brien	Ulteig
Haley Ellett	Hood River
Kirsten Olson	Ulteig
Ryan Bottem	Public Generating Pool
Aaron James	NEEA
Scott Johnson	NW Natural
Aimee Robinson	BPA
Lauren Hogrewe	WA Dept of Com
Elizabeth Osborne	NWPCC
Ken Ross	Fortis BC
Tom Pardee	Avista
Stephanie Celt	WA Dept of Com
Shannon Souza	OCEAN
Clay Riding	NW IW
Robert Diffely	BPA
Ted Drennan	OR PUC
Dan Serres	Columbia Riverkeepers
John Ollis	NWPCC
Michael Freels	ODOE
Erin Childs	Renewable H2