Northwest Power & Conservation Council
Fuels Advisory Committee
November 22, 2024

Tomás Morrissey, NWPCC, began the meeting at 9:30. Chad Madron, NWPCC, reviewed the best way to interact with the Zoom platform. Morrissey then called roll.

Rebecca Smith, Transformist, noted that Morrissey was trying to come up with the figures on [Slide 13] by downscaling DOE numbers as opposed to upscaling from Pacific Northwest data. She wondered if the DOE estimates included other transportation modes like heavy duty offroad, marine, and aviation.

Morrissey was not sure, moving back to [Slide 11] to illustrate that there was some transportation and other industrial uses as well. He offered to break out the graph on the slide by sector.

Dan Serres, Columbia Riverkeepers, asked if the expectation of 240 billion cubic feet (bcf) of gas per year would be the assessment input. Morrissey answered no, clarifying that the top level of the graph on [Slide 13] represents 1.8 million metric tons of clean hydrogen which is the equivalent of 240 bcf of gas. Morrissey was unsure about how much gas is needed for a ton of hydrogen as staff is focusing on the electric side.

Serres thanked him, asking about the expectations of gas capacity for the region. Morrissey pointed to the downscale values of the DOE numbers on [Slide 11], explaining the green ranges on [Slide 12].

Clay Riding, NW Innovation Works, asked about concerns around how the forecast moves under Trump 2.0 and if future policy will impact hydrogen rollout. Morrissey answered probably, saying much of the analysis was completed before the election. Morrissey said staff is working on keeping the Plan on schedule but realize policy changes may happen in the next quarter and beyond. He asked for guidance from the FAC, adding that there will be no firm information until after the new administration takes over.

Serres asked what kind of clean hydrogen can come from gas, saying he thought clean hydrogen came from electrolysis [Slide 14]. Morrissey said he's thinking about hydrogen and the way it fits under the 45v rule, which gives a production tax credit to the fuel. He said the highest incentive tranche would come from electric-facing production but there could be some lower incentives using gas-facing technology plus carbon capture.

Bill Donahue, PSE, stated that his utility is investigating pyrolysis, noting that at a ratio of four units of gas to one unit of hydrogen the economics don't look great. He added that it has been used in Europe.

Smith agreed that pyrolysis is a pathway that may or may not count as renewable but would count as clean if the carbon intensity is in line. She then pointed to using RNG from a biodigester as another possible pathway.

Scott Johnson, NW Natural, said his utility has a pyrolysis pilot project with a two to one ratio. He agreed the carbon must be sequestered, saying turquois hydrogen follows a similar path.

Dan Kirschner, NWGA, explained that pyrolysis uses natural gas as a feedstock and precipitates out the carbon, turning it into carbon black. He said the process doesn't require much electricity and can be located near a natural gas source. Kirschner pointed to two companies, Modern Hydrogen and Hycamite, who do this process.

Serres assumed that hydrogen coming from Canadian gas fracking would not be considered "clean."

Stephanie Celt, WA Dept of Commerce, asked Morrissey to refresh her on the proposed DOE resource. Morrissey referenced the DOE Clean Hydrogen Strategy Roadmap on [Slide 10] saying the plan was to downscale the national forecast to create regional projections for 2040 and 2050.

Celt asked how hub projections would be incorporated. Morrissey said staff hoped to use that for the 2030 number, but no projects are firmly committed as of yet.

Celt moved to types and definitions, agreeing that there are some non-electrolysis projects along with the potential for imports. She pointed to states having different definitions of what counts as clean. Celt then moved to conversations in WA and perhaps OR around focusing on carbon intensity over feed stocks. She said it is not clear if this would be supported, particularly imported blue hydrogen, as WA has the Climate Commitment Act.

Morrissey admitted that staff are challenged by state-level definitions that are still in the works. Celt answered that WA has set definitions that explicitly exclude fossil fuel feedstocks. She said these definitions point the state towards electrolytic hydrogen at the moment. Celt admitted that these things could adapt in the future.

BREAK

DRAFT 9th Plan Gas Price Forecast

Donahue believed there could be a sizable price impacts from LNG development [Slide 28]. He said less availability at Sumas would put pressure on other sources during cold weather, particularly for 2027/28 and continuing until 2029 when the West Coast pipeline expansion finishes.

Johnson asked for more information on how winter 2027/28 will impact Council work as this is years away. Morrissey explained that this work will be used for the 9th Plan forecast. He said the Plan starts looking at resources in 2027 and resources are valued against market prices, which are influenced by natural gas prices.

Johnson said the issue is if there is enough supply to go around during cold weather. He referenced the pipeline rupture of 2018/19, saying the pipeline was running but at reduced capacity, and that Woodfibre LNG coming online could put the region in a similar situation. Johnson added that there has been more gas used over the last years, especially in the power sector, that could put the region in an even tighter spot.

Johnson recalled the cold February 2019 that caused $200 gas spikes and power prices hitting $1000. Because of this, Johnson supported adding a price adder to the Council's forecast for 2027 to 2028/2029, but thought the volatility remains unknown unless you can predict weather and demand. Morrissey agreed this is weather dependent and a mild winter may allow the region to squeak through with limited price spikes.

Fred Heutte, NW Energy Coalition, said gas prices are as low as they've been since deregulation with the North American market oversupplied. He cautioned that gas prices can turn around quickly, particularly when world prices are higher than domestic. Heutte predicted there will be an impact to the NW market. Because of this he viewed any chosen input as a placeholder.

A stakeholder asked about LNG Canada. Morrissey agreed that LNG Canada is a huge project but has its own pipeline supply that should reduce local marker price impacts. He then said staff are running out of time to lock down these assumptions if the Plan is to stay on track. Heutte understood but insisted that with that chunk of supply out of the market, there will be a big impact. He speculated that there will be a gas price shock in the future and hoped that Council modeling could account for it. Morrissey said volatility will be discussed at the next FAC meeting.

Riding predicted that price spikes will be pipeline related, pointing to LNG exports out of the Gulf of Mexico as example. He noted that LNG prices haven't spiked even as more is being shipped. He thought there could be a few excursions, but supply would eventually catch up.

Johnson asked if basins are directly pointed to in the Plan. He said that PSE has exposure to Station 2 but wasn't sure about others. Morrissey said the model has the ability to be that granular but past work divided the region into east/west prices.

Steven Simmons, NWPCC, confirmed that staff use a mixture of pricing hubs that roughly fall into a west/east mix. Johnson said those allocations could be impactful as there is variance between the hubs. Simmons agreed.

John Ollis, NWPCC, said the model has the ability to be very granular but relies on public information. He said the Systems Analysis Advisory Committee also called for more nuance but stressed that analysis requires data and asked for guidance.

Heutte asked about analysis for AECO, Alberta, and the Rockies as they are important for Portland and Avista. Morrissey said they do hub forecasts for Opal, which is Rockies facing and Kingsgate. Simmons added that staff bring a mix of US Rockies, AECO and Sumas.

Heutte conceded that it may not matter for long-term planning but pointed to price separation between Sumas and other hubs. He wondered if a more permanent differential could emerge. Morrissey admitted that the current methodology is more backward facing, and the gas market is shifting. He moved to [Slide 27] to illustrate, saying differentials are built in from historical patterns. Heutte said this slide answers his question and it is now an issue of magnitude.

Riding thought the west side would see increased pressure but wasn't sure if there was a way to do analysis as Sumas has moved up. Morrissey suggested looking at data from just the last 10 years instead of going back to 2010 [Slide 26].

Heutte did not think that shorting the time frame would deliver much as it doesn't shake out the volatility. He said this shows we have to pay more attention to the spread versus a single number. Morrissey said volatility will be layered in [Slide 25] adding there will be more to discuss in the next meeting.

Johnson asked how upstream methane numbers [Slide 31] impacts the modeling and enters into the Plan. Morrissey said a carbon adder associated with natural gas and coal generation was used for the 2021 Plan. He said this had an impact on carbon damages like the social cost of carbon.

Johnson asked if there a dispatch model that dispatches these resources differently due to the added CO_2. Ollis said there is not a direct impact on dispatch calling it a background emission rate. Ollis said theoretically it changes the objective function but at a broad level the rate doesn't affect the dispatch but the CO_2e would.

Heutte strongly opposed the proposal on [Slide 33[calling it a big step back from the 2021 Plan. He said it is possible and important to quantify this, pointing to good data and lengthy comments he submitted for the 2021 Plan. Heutte said that Canada's regulatory situation is not as strong as the US side and their values of upstream emissions go back to a study from 2001. He said he found credible reports from other perspectives that found the Canadian estimates are low. Because of this, Heutte urged staff go with the estimates from the 2021 Plan at a minimum. He agreed upstream emissions will come down over time but wasn't sure how fast.

Serres wrote, I support what Heutte said, thank you. It seems like a step back not to account for upstream emissions quantitatively in some way, in the comments.

Johnson said that Canada is lower emitting than the US and has standards in place. He addressed upstream methane emissions, saying NW Natural is not regulated on that side but does work to influence producers to lower their emissions. Johnson asked if there are upstream methane emission regulations for the contemplated uses, saying it sounds like the main impact will be on existing resources as opposed to new ones.

Johnson thought that much of the electric generation fleet is base loading as the NW is short on power. He thought that excluding this would also simplify the work without moving the needle much.

Heutte wrote, Just to add that the references I cited in the earlier comments to the Council came from top-tier sources like the Proceedings of the National Academy of Sciences (PNAS) and Environmental Research Letters (ERL). Uniformly they indicated much higher upstream emissions than the amounts claimed by Canadian regulators and the industry, based on multiple lines of evidence, in the chat.

Kirschner voiced support for this proposal as it's asynchronies and hard to get clear data.

Donahue was on the fence but thought the split should be more like 95% Canada if it was included as most Northwest power plants get gas from Canada.

Riding agreed with Donahue's comment saying 1/3 coming out of the Rockies is way too much. Morrissey offered to follow up with others about the 1/3- 2/3 split. Donahue thought it might be right for gas LDC load.

Kirschner thought that was true a couple of years ago, calling it more of a compromise than an actual. He said the fuel is not explicitly for generation.

Morrissey said staff is still very aware of upstream emissions and they will still include discussion on the issue.

Jennifer Light, NWPCC, thanked the FAC for the input, saying staff will bring all comments and feedback to the Council.

Heutte wrote Just to say again, if upstream methane emissions can be quantified, the NW Power Act and the Council's general practices require it to be included in the quantified analysis and modeling, in the chat.

Morrissey discussed upcoming FAC topics and ended the meeting at 11:30.

Attendees via Zoom Webinar

Jennifer Light	NWPCC
Tomás Morrissey	NWPCC
John Ollis	NWPCC
Steven Simmons	NWPCC
Brian Robertson	CNGC
Shawna Nieraeth	MDU
Lori Hermanson	Avista
Landon Snyder	Snohomish PUD
John Purvis	Clallam PUD
Frank Brown	BPA
Rebecca Smith	Transformist
Michael Brutocao	Avista
Heather Nicholson	Orcas Power & Light
Mary Moerlins	NW Natural
Janna Loeppky	Avista
Jay Bower	PSE
Dan Serres	Columbia Riverkeepers
Ted Drennan	OR PUC
Bill Donahue	PSE
Aimee Robinson	BPA
Lauren Hogrewe	WA Dept of Commerce
Scott Johnson	NW Natural
Aaron James	NEEA
Tom Pardee	Avista Corp
Fred Heutte	NW Energy Coalition
Clay Riding	NW IR
Abbie Krebsbach	MDU
Dan Kirschner	NWGA
Stephanie Celt	WA Dept of Commerce