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To Washington Department of Ecology regarding Northwest Innovation Works, Kalama

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Last August I enumerated the deceptions practiced by NWIW to further their venture capitalist scheme to build the world's largest methanol refinery in Kalama, Washington. My assertions still hold and are attached.

Greenhouse gases from purchased electrical power is a significant amount and should not be underestimated as NWIW would like to do.

When first unveiled in 2014 the estimated 1.5 million metric tons of on-site GHG emissions from the project should have been a show-stopper. The FERC environmental statement for the Kalama Lateral Pipeline noting methanol project air emissions would require a potential for significant deterioration of air permit should have been a show-stopper. In addition were all the other damaging environmental impacts.

At 10,000 MT per day the Kalama methanol refinery would produce 3.65 million MT per year. Even methanol supporters acknowledge this much methanol could emit anywhere from 3.65 million MT of GHGs to as little as about 2 million MT CO2 in the production process alone.[1] NWIW's GHG numbers should have been challenged from the beginning.

Over a year after initial promotion NWIW realized the conventional methanol production process would produce more air pollution than would be financially viable to mitigate. This is why NWIW decided in 2015 to switch to the ULE process. This process, untested on a large industrial scale, would produce less emissions because a good portion of the power inputs could be purchased from the public electric grid and the emissions offloaded on to some other entity. In essence, buying local power would be cheaper than meeting air pollution regulations.

The necessary electrical power for the ULE process would require purchasing about 200 MW from Cowlitz PUD. However local distribution lines could only supply about 100 MW, requiring NWIW to use on-site gas generators for the other 100 plus MWs.

Two hundred megawatts is a significant electrical load, even in Cowlitz County with several large industrial power users. It's about as much as the entire residential load in the county. Puget Sound Energy's Longview Mint Farm gas-fired generating station has a capacity of 310 MW.

Two hundred megawatts is a significant amount of energy and generation can produce a significant amount of greenhouse gases. According to the NWIW SEPA FEIS p. 4-19 Table 4-4, the on-site generation of about 100 MW will produce 421,000 metric tons annually of CO2e. Yet curiously it's stated the 100 MW of purchased power would result in only 266,000 MT CO2e annually. This is attributed to using EPA 2012 emission rates for the northwest U.S. NWIW is assuming the purchased electricity will be cleaner than what they can produce themselves. According to the supplemental EIS, NWIW would like eventually like to buy all 200 MW from the public electric grid.

So how much GHG will NWIW Kalama be responsible for from their electric power purchases? There is the amount given above in the FEIS. Then there's the amount they will argue for on pg 3-25 of the supplemental EIS of 190,000 metric tons.

If 100 MW is required 24 hours a day for a year then 876,000 megawatt hours will be needed. According to the EPA GHG equivalents calculator, generating that much electricity will produce 619,332 metric tons of CO2e.

NWIW, in its Voluntary Greenhouse Gas Mitigation Framework, Aug 16, 2019 p. 7, suggests where actual data not available to use the Washington average mix and including implementation of SB 5116, WA 100% clean energy. In SB 5116 section 7 (2) …."If the department of ecology has not adopted an emission rate for unspecified electricity, the emissions rate that applies for the purposes of this chapter is 0.437 metric tons of carbon dioxide per megawatt-hour of electricity."

Using the 0.437 rate in SB 5116 would produce 382,812 metric tons of CO2e from 100 MW of electricity consumed round the clock for a year.

The upstream emissions from 100 MW of purchased electricity could be anywhere from the 190,000 MT CO2e that NWIW would like you to believe, to more than three times that amount depending on generation source and how it's calculated. Even the lowest estimate of upstream emissions from the 100 MW of purchased power is significant and demands good justification to add to Washington's GHG load.

Besides the issue of how much GHG will be produced by refining a fossil fuel with Washington electricity, there is the serious concern if this mega load of electricity should even be permitted a share of the currently limited clean power resources in Washington. Industry and residents are not conserving electricity just to power up a dirty fossil fuel project to send resources to China. While Washington may have some surplus power some of the year, this will not always be the case. It will certainly not be the case if some hydropower dams are shut down due to increasing maintenance costs, or necessities of fish habitat preservation (Snake River dams or increased spill).

From the beginning NWIW has been offloading their environmental impacts on to other entities to polish up their dirty fossil fuel project in Kalama. The desired total electrical inputs could represent almost half of the methanol refining GHG emissions, which they will label upstream emissions for another entity's GHG balance sheet. NWIW is also eyeing Washington public power to assume the burden of greening their power inputs with SB 5116. Our experience with NWIW is they will fudge the numbers and responsibility wherever is convenient for them. Don't let them.

Thank you,

Diane L. Dick

1. https://methanolfuels.org/about-methanol/environment/

"Ten or more years ago, a typical methanol manufacturing plant would emit about 0.9—1.0 metric tonnes of carbon dioxide for every ton of methanol produced. In addition to the environmental concerns, large CO2 emissions represent operational inefficiencies in a methanol plant, since the carbon emitted as CO2 is not available for making methanol molecules. In fact, excess CO2 from other industrial facilities can also be captured and consumed to increase methanol production. Through the implementation of efficiency improvements and through replacing of older facilities with newer plants that use more efficient technologies, over the last decade methanol plants have been able to significantly reduce CO2 emissions by up to 40%. Some facilities report emissions as low as 0.54 tonnes of CO2 / tonne of methanol produced. This is equivalent to emitting 3.8 lbs of CO2 per gallon of methanol."