Diane Dick

2020 10 08 Comment #6

Washington State Department of Ecology
Olympia, Washington
Re: Formal Comments on Kalama Manufacturing and Marine Export Facility Draft Second Supplemental Environmental Impact Statement, September 2020

Please deny Kalama Manufacturing and Marine Export Facility (KMMEF) a shoreline substantial development and a conditional use permit. The environmental impacts from the project are significant and cannot be mitigated.
Greenhouse gas emissions are insufficiently explained in the draft second supplemental environmental impact statement (SSEIS) and the data contains errors and omissions.

The data on purchased power is incorrect and based on speculative assumptions.

Purchased power is detailed in Appendix C of the SSEIS and includes the following:

"Purchased power
The proposed project will import 100 MW (864,000 MWh) of electric power from the regional power market through the Cowlitz PUD transmission system during continuous operation. Power demand is reflected in Megawatt Hours (MWh). Total power demand is shown in Table C-17 for the ULE Alternative. Power demand over the 100 MW provided by purchased power is provided for by the on-site natural gas combustion turbines (emissions from the on-site power generation are captured in the ULE Production Scenarios)." P. C-20

"Electrical power demand
Electrical power will be required for KMMEF operations. A portion of the power required will be generated from onsite combustion turbines, and the rest, estimated to be 100 MW by NWIW, will be purchased from the power market. Emissions from electrical generation by the onsite combustion turbines are included in the emission calculations for methanol production for the ULE alternative. Emissions for the 100 MW of purchased power are based on three generation scenarios:
• Low Scenario. All purchased power is generated from renewable sources. The current renewable mix from Cowlitz PUD is 86% hydroelectric, 8% nuclear, and 6% wind.
• Mid Scenario. Purchased power is from a mix of generation sources, which changes over time in line with the expected, future energy mix in accordance with the Washington State Clean Energy Transformation Act (CETA) signed into law on May 7, 2019. In the mid scenario, generation from 2020 to 2030 is from the current marginal power source (defined as the source of electricity that is first or cheapest available to meet an increased power demand), generation from 2030 to 2045 is from a mix of 20% marginal power and 80% renewable power, and generation from 2045 and beyond is all from renewable sources.
• High Scenario. Purchased power is all from the current marginal power source.

A NW Power and Conservation Council study of CO2 emissions in the NW power system published in 2018 concluded that the expected emissions over the time frame of the project from

marginal power sources were in a range that correlates well with the emissions from a combined cycle natural gas-fired powerplant. Therefore, for the purposes of this study, a combined cycle natural gas-fired powerplant was assumed as the current marginal power source.
Emission factors for combined cycle natural gas-fired powerplants, hydroelectric generation stations, nuclear powerplants, and wind turbines were derived from GREET and are shown below in Table C-1." SSEIS p. C-3

Table C-1 shows range of emissions from power purchases from low to high scenarios. [extracted data]
Purchased Power GHG Emission Factors (g/kwh)
CO2e 0.61 216.57 431.43

The 864,000 MWh from 100 MW demand for continuous operation is incorrect. Multiplying 24 hours of 100 MW demand for 365 days yields 876,000 MWh.

As noted in a previous comment, nowhere in the SSEIS are the electrical power requirements and sources for operating the KMMEF marine dock, including shore power provided to over 80 vessels at berth annually, evaluated. The GHGs generated from this power and marine dock vessel operation are not evaluated.

Based on scenario descriptions above, GHG emissions from on-site purchased power range from 526.7 for low estimate, 187,112 mid estimate, to 372,752 MT CO2e/year for high estimate per Table 3.5-2.

So which of the electrical power resource scenarios and resulting GHG emissions are most likely and reasonable?

All the estimates are low given the absence of including KMMEF dock operations and error in calculating the hours of operation in a year.

The low estimate is unlikely given a large new industrial load will not be allowed as a priority customer for Cowlitz PUD's hydropower resources. NWIW will be required to purchase power from the open market.

The mid estimate is speculative based on the ability of current electrical power resources to move towards clean and renewable resources. [It is also speculative dirtier generation from coal will be replaced by arguably cleaner gas generated electricity given the huge amount of gas NWIW will be sucking out of the limited PNW gas infrastructure.] It is speculative and dubious NWIW will even be operating at the farthest time frame that includes the cleanest power.

The high scenario, with estimate of 372,752 MT CO2e/year by using current marginal resources, is the most likely and reasonable number to work with.

To put the high scenario GHG emission number in larger context, the EPA GHG calculator states 876,000,000 kWh of electricity produces 619,367 metric tons of CO2e.

Refining the power resource further, the following is the result from 2018 eGRID data for the same amount of electricity:

"Using the eGRID subregion NWPP (WECC Northwest) emission rates and 4.80% percent line loss, your estimated annual use of 876,000,000 kWh of electricity results in 586,632,672 pounds CO2, 367,219 pounds SO2, and 550,829 pounds NOX emitted in one year from the power plants in your area.
It would take 6,896,152 seedlings grown for 10 years or 313,053 acres of forests in one year to offset those CO2 emissions."
https://www.epa.gov/egrid/power-profiler#/NWPP

Converting the above to metric tons, the CO2 alone represents about 262,000 metric tons of GHG. Nitrous oxide has 298 time the global warming potential of CO2.
https://climatechangeconnection.org/emissions/co2-equivalents/

Even the estimate of GHGs from purchased electrical power for on-site consumption in the high scenario is lowballed. Please redo the purchased power calculations and emissions to reflect reality.

Thank you,

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Longview