Kalama Methanol Refinery Comment on the Draft Second Supplemental Environmental Impact Statement

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I am Mike Ellison of Vancouver, WA. I moved to Vancouver when I was 6 weeks old and have lived here almost all of my life. I have a PhD in Environmental Sciences and Resources.

Every day I enjoy the beautiful environment and the community that supports me here in Washington. I want those who follow me, including my children, to live as enjoyable a life as I have. Global warming threatens this, so I have a responsibility and a desire to respond. I've been privileged to benefit greatly from the long history of GHG emissions that have brought so much prosperity to the developed world. I also recognize that there are many in the developing world that are missing out on these benefits and are already experiencing the brunt of climate chaos. Their plight also motivates me to speak out.

I'm going to focus on a few of the flaws is see in my reading of the Draft Second Supplemental EIS's analysis.

The urgency to reduce GHS emissions: The IPCC Special Report about the difference between 1.5 and 2C warming

It is very important that the lifecycle global warming potential (GWP) of the project must be addressed by the DSSEIS because *all* the GHG emissions resulting from this project impact climate on a global scale and because science and our own experiences tell us we are nearing a dangerous level of climate chaos. And, of course, warming on a global scale impacts Washington state. The IPCC Special Report about the difference between 1.5 and 2C warming released in October[i] reinforces the need to limit global warming to 1.5C—at least. This science-based IPCC report tells us that we must achieve GHG emissions reductions of 45% from 2010 levels by 2030 to limit warming to 1.5C[ii]. The Draft Second Supplemental EIS must recognize the need for this dramatic reduction in only 10 years. In fact, it does note that we are significantly behind our 2020 goals set by the Department of Ecology. This is not the time to add fossil fuel infrastructure that will lock in at least 4.6 MT CO_2e/year emissions for 40+ years.

Furthermore, we need to remember the IPCC has a history of successive reports that have had to admit their earlier predictions underestimated the pace at which climate chaos is coming upon us. In fact, the Guardian reported[iii], "Bob Ward, of the Grantham Research Institute on Climate Change, said the [Special Report on 1.5 C warming] was 'incredibly conservative' because it did not mention the likely rise in climate-driven refugees or the danger of tipping points that could push the world on to an irreversible path of extreme warming." Modeling in the DSSEIS needs to consider much more dramatic cuts than 45% by 2035. The modeling in the DSSEIS isn't adequate to protect the well-being of Washingtonians and our neighbors around the world. We must not take chances with our general welfare, our economy, and our life support system.

Speculative Displacement Assumptions in the DSEIS

Probably the most egregious flaw of the DSSEIS is its highly speculative, but very limited assumptions regarding the range of alternate cases for methanol sources to make olefins absent the KMMEF. These assumptions are central to the justification of the project. These are unreasonably speculative because (a) world is awakening to the downsides of plastics, and may decide to stop using so many, a possibility

not considered; and (b) the timeline of 40 years can't be predicted with the certainty needed when making such a grave decision.

We must consider that the possibility that some of the methanol will be diverted to transportation fuels. However, transportation must electrify to meet the Paris agreement goals resulting in reduced demands for methanol as a fuel. Again, the competitiveness of the methanol market can't be predicted 40 years into the future.

The urgency of reducing GHG emissions means that we can't risk our future on such an uncertain market analysis. You could say that depending on this part of the DSSEIS analysis is risking our future on an American-made Chinese fortune cookie message. But, in addition, building fossil fuel infrastructure with a 40+ year lifetime, locks in a market momentum that is very likely to drive us past GHG emission levels that will be disastrous.

Treatment of methane emissions in determining the GWP of the project

A 2018 case study report on this project by the Stockholm Environmental Institute[iv] points to research that the assumption of 1.46% as an unrealistic upper bound for the upstream methane leak rate. It is more likely this is 2 to 4.5 times greater. New reports indicate that leakage rates in British Columbia are underreported by a significant amount.[v]

The assumptions used for the GWP of the upstream methane emissions in the DSSEIS are very important, especially when the near-term GHG emissions reduction required by the IPCC Special Report is considered. As you know, methane emissions exert a much greater radiative forcing than carbon dioxide, but methane breaks down more quickly in the atmosphere. Generally, the GWP of GHG emissions are considered on a 20-year or 100-year basis depending on the question being asked. Because we understand the level of GHG emissions reduction required over the next 10 years[vi], the 20-year GWP is the realistic assumption. The 20-year GWP (AR5) of methane is 84 times that of CO2. The DSSEIS's use of a 100-yr GWP of only 28 is wildly unrealistic.

In 2014 Jessika Trancik and Morgan Edwards[vii] of MIT directly addressed this issue and argued that the 100-year GWP value is not only unrealistic, but dangerous. "The problem is that now we're actually closer to reaching and potentially exceeding the commonly cited climate targets," Dr. Trancik says. "If our time frame for stabilizing radiative forcing is 20 or 30 years, we shouldn't use the 100-year GWP for our analysis."[viii]

When you add to this the unrealistic leak rate for upstream methane, it is clear the DSSEIS doesn't fully account for the critical near-term GWP of the methane emissions.

Role of the administration's deregulation of methane

Because the current federal administration is seeking to reduce regulation of fugitive methane emissions from gas wells that are likely to become feedstocks of the refinery, it is necessary to redo the modeling of upstream methane emissions to include regulatory reform in the direction of looser emissions controls in the analysis. This is another way the DSSEIS is incomplete and unrealistic.

Conclusion

Because of the unrealistic assumptions in the DSSEIS that I've noted plus the urgent need for near-term dramatic GHG emission reductions, I believe that there are Unavoidable Significant Adverse Impacts of

the project. The Department of Ecology should reject this methanol refinery, and deny the Shorelines Permit for the project.

Sincerely,

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[i] Intergovernmental Panel on Climate Change, "Global Warming of 1.5 °C," 2018, https://www.ipcc.ch/sr15/.
[ii] Jonathan Watts, "We Have 12 Years to Limit Climate Change Catastrophe, Warns UN," *The Guardian*, October 8, 2018, sec. Environment, https://www.theguardian.com/environment/2018/oct/08/global-warming-must-not-exceed-15c-warns-landmark-un-report.
[iii] Watts.
[iv] Peter Erickson and Michael Lazarus, "Towards a Climate Test for Industry: Assessing a Gas-Based Methanol Plant," Discussion Brief (Stockholm Environment Institute, February 6, 2018), https://www.sei.org/publications/assessing-gas-methanol-plant/.
[v] Emmaline Atherton et al., "Mobile Measurement of Methane Emissions from Natural Gas Developments in Northeastern British Columbia, Canada," *Atmospheric Chemistry and Physics* 17, no. 20 (October 19, 2017): 12405–20, https://doi.org/10.5194/acp-17-12405-2017.
[vi] Intergovernmental Panel on Climate Change, "Global Warming of 1.5 °C."
[vii] Morgan R. Edwards and Jessika E. Trancik, "Climate Impacts of Energy Technologies Depend on Emissions Timing," *Nature Climate Change* 4, no. 5 (2014): 347–352, https://doi.org/10.1038/NCLIMATE2204.
[viii] Nancy W. Stauffer, "Assessing Climate Impacts of Energy Technologies," Main, December 15, 2014, https://energy.mit.edu/news/assessing-climate-impacts-of-energy-technologies/.