**Kevin Tempest** / R&D Scientist and Co-Founder / Low Carbon Prosperity Institute
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Attn: Rich Doenges
NWIW SSEIS
Washington Department of Ecology
PO Box 47600, Olympia, WA 98504-76

Dear Mr. Doenges, authors, principal contributors, and relevant staff,

Thank you for the opportunity to offer both spoken and written comments regarding the *Kalama Manufacturing and Marine Export Facility Draft Second Supplemental Environmental Impact Statement (DSSEIS)*. I would like to commend the agency on a detailed technical analysis considering a wide range of scenarios and assumptions as you weigh a major decision.

I am including two attachments for consideration:

- A **Cover Letter** summarize key findings of my review of the draft document;
- A **Letter of Findings** that goes into greater details on the key findings offered in this cover letter and a written version of my spoken comments;

These key findings include:

1. The DSSEIS sensitivity analysis indicates a high likelihood of between 2 and 9 MtCO2e/year more emissions in the absence of KMMEF, including "extremely limited" potential for emissions to be higher with KMMEF methanol. These results are similar to a December 2018 analysis by LCPI (likely range of 2.3 to 7.2 MtCO2e/year) despite using a distinct and independent methodology. Consistent results across different methodologies lend increased confidence to the forecast and likelihood of net avoided emissions.
2. Inclusion of in-state emissions mitigation would increase the high-end range of net avoided emissions. This likelihood would be more certain if Ecology made it a formal permitting condition. In addition, the most accurate projections of the power grid under the Clean Energy Transformation Act would increase confidence in and the likeliest range of net avoided emissions.
3. Under much faster emissions intensity decline of global methanol substitutes than Ecology's analysis considers, the general findings remain consistent: It is very likely that net cumulative GHG benefits will accrue with KMMEF methanol compared to without it. This finding, based on new analysis available in the associated Letter of Findings, holds even with conservative assumptions that in-state emissions mitigation is ineffective and KMMEF methanol emissions intensity does not improve while competing methanol does rapidly. The additional stress and boundary testing indicate net global benefits through at least 2049, and very likely through end of facility life, even against a benchmark of a deeply decarbonized global industry. Nonetheless, it would likely be inconsistent to assume a major movement across the global industry while KMMEF emissions intensity remained static. This is not a given, and efforts should be made to ensure that KMMEF methanol remains well ahead of the curve.
4. A preliminary analysis finds it highly unlikely that substituting KMMEF methanol for gasoline end-use would be prevalent enough to lead to a net emissions increase. The combination of conditions required for there to be a net emissions increase represent an extreme outlier scenario. Even so, methanol availability as a fuel should not be used as

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a justification to stop pushing forward on primary solutions to meeting the global climate challenge, such as electrification of transport and building end-uses. If fuel-use impacts are a concern, mitigation strategies that include accelerating electrification of transport and buildings should be considered under the proposed voluntary mitigation plan.

Thank you for your consideration of these key findings as they pertain to Ecology's decision-making process. I would be happy to follow-up regarding any questions that arise from the documents I am submitting or serve as a resource otherwise as you consider the range of GHG impacts associated with the KMMEF.

Sincerely,

Kevin Tempest

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