





December 27, 2018

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**Re: Comments on the Draft Supplemental Environmental Impact Statement for Northwest Innovation Works’ Methanol Refinery and Export Terminal.**

Mrs. Farr:

The undersigned organizations (collectively “Commenters”) have reviewed the Port of Kalama’s (“Port”) and Cowlitz County’s (“County”) Draft Supplemental Environmental Impact Statement and the accompanying lifecycle greenhouse gas study (collectively “DSEIS”) for the

proposed Kalama methanol refinery and export terminal (the “proposal”) and submit the following comments.

Commenters represent tens of thousands of members and supporters working to protect and restore Washington’s environment and the Columbia River. Commenters’ members and supporters work, live, and recreate in and along the Columbia River and the surrounding landscape near Kalama, the location of Northwest Innovation Works’ (“NWIW”) proposed methanol refinery and export terminal. Commenters and their members are deeply concerned by plans to construct a 100-acre methanol refinery, export terminal, pipeline, and associated facilities in and along the lower Columbia River. The project would undermine local and regional efforts to protect water quality, recover endangered and threatened species, support vibrant fishing communities, protect human health and safety, transition to a low-carbon economy, and combat climate change. NWIW’s proposed methanol refinery is the latest in a disturbing trend of fossil fuel and petrochemical export terminals that would industrialize and pollute the lower Columbia River and increase Washington’s contribution to climate change.

Commenters oppose NWIW’s petrochemical refinery and export proposal because of its impacts on the Columbia River and our climate. Commenters call on Cowlitz County and the Washington Department of Ecology to deny NWIW’s requested permits based on these agencies’ authorities under the Washington Shorelines Management Act,<sup>1</sup> the substantive authority granted by the State Environmental Policy Act,<sup>2</sup> and the public trust doctrine.<sup>3</sup> Issuing permits for new fossil fuel infrastructure like NWIW’s methanol refinery is the antithesis of addressing climate change—and the time to address climate change is now. Recent reports by the Intergovernmental Panel on Climate Change (IPCC)<sup>4</sup> and the U.S. Government<sup>5</sup> illustrate that severe climate change impacts could be felt by 2040, including “inundating coastlines and intensifying droughts and poverty.”<sup>6</sup> A recent hot year, 2015, provided an unwelcome window into the near future of the Pacific Northwest if climate change continues unabated: “low stream levels and warm water resulted in fish die-offs; agricultural losses were between \$633 million and \$773 million in Washington alone; a combination of low snowpack and extreme precipitation deficit in spring and summer led to the most severe wildfire season in Northwest

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<sup>1</sup> See WAC 173-27-140(1) (“Review criteria for all development.”) referencing RCW 90.58.020(1).

<sup>2</sup> RCW 43.21C.060.

<sup>3</sup> See *Illinois Cent. R.R. Co. v. Illinois*, 146 U.S. 387, 459–60 (1892).

<sup>4</sup> IPCC, [Special Report: Global Warming of 1.5 °C](#) (October 1, 2018).

<sup>5</sup> U.S. Global Change Research Program, [Fourth National Climate Assessment, Volume II: Impacts, Risks, and Adaptation in the United States](#) (November 23, 2018).

<sup>6</sup> New York Times, [Major Climate Report Describes a Strong Risk of Crisis as Early as 2040](#), (October 7, 2018).

history.”<sup>7</sup> And Washington’s critically important coastal areas are projected to experience sea level rise measured in feet, not inches.<sup>8</sup> Washington simply cannot respond to these immediate threats by permitting NWIW to build a massive new petrochemical refinery that would cause millions of tons of new climate pollution each year. As Fatih Birol, the executive director of the International Energy Agency recently said: “We have no room to build anything that emits CO<sub>2</sub> emissions.”<sup>9</sup>

Incorporated by reference are all previous State Environmental Policy Act (SEPA) comments submitted by Columbia Riverkeeper and others on this proposal and exhibits thereto, including but not limited to comments on the scope of the SEIS. Because those documents are already in the Port and County’s possession, Commenters do not attach them as exhibits to this letter but do request their inclusion in the record for the Supplemental EIS.

## **I. Washington State Environmental Policy Act.**

In adopting SEPA, the Washington Legislature declared the protection of the environment to be a core state priority.<sup>10</sup> In SEPA, “[t]he legislature recognizes that each person has a fundamental and inalienable right to a healthful environment and that each person has a responsibility to contribute to the preservation and enhancement of the environment.”<sup>11</sup> This policy statement, which is stronger than a similar statement in the federal counterpart of NEPA, “indicates in the strongest possible terms the basic importance of environmental concerns to the people of the state.”<sup>12</sup>

The point of SEPA is to fully analyze the environmental impact of projects that have a significant impact on the environment.<sup>13</sup> The primary purpose of an environmental impact statement “is to ensure that SEPA’s policies are an integral part of the ongoing programs and actions of state and local government.”<sup>14</sup> SEPA “sets forth a state policy of protection, restoration and enhancement of the environment.”<sup>15</sup> This is often characterized as the “look

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<sup>7</sup> Columbia Basin Bulletin, [Federal Climate Report Suggests More Warm Years Such As 2015 Will Be A Reality For Columbia Basin](#) (November 30, 2018).

<sup>8</sup> See Washington Coastal Resilience Project, [Projected Sea Level Rise for Washington State](#), p. 6 (2018).

<sup>9</sup> The Guardian, [World has no capacity to absorb new fossil fuel plants, warns IEA](#) (November 12, 2018).

<sup>10</sup> RCW 43.21C.010.

<sup>11</sup> RCW 43.21C.020(3).

<sup>12</sup> *Leschi v. Highway Comm’n*, 84 Wn.2d 271, 279–80 (1974).

<sup>13</sup> RCW 43.21C.031(1).

<sup>14</sup> WAC 197-11-400.

<sup>15</sup> *Polygon Corp. v. City of Seattle*, 90 Wn.2d 59, 63 (1978); RCW 43.21C.010.

before you leap” concept, meaning that an agency must ensure that environmental effects are known and carefully considered before it is too late.<sup>16</sup>

The scope of impacts that must be examined in a SEPA document, similar to NEPA, includes direct, indirect, and cumulative impacts.<sup>17</sup> SEPA regulations define impact as “the effects or consequences of actions.”<sup>18</sup> Agencies must “carefully consider the range of probable impacts, including short-term and long-term effects and shall include those that are likely to arise or exist over the lifetime of a proposal or, depending on the particular proposal, longer.”<sup>19</sup> It is implicit in SEPA that an “agency cannot close its eyes to the ultimate probable environmental consequences of its current action.”<sup>20</sup>

Under SEPA, an EIS must provide a reasonable set of alternatives: the preferred action and one or more alternatives (distinct and separate from mitigation measures).<sup>21</sup> The range of alternatives considered must be sufficient to permit a reasoned choice as opposed to the kind of constrained choices that lead to only one project or conclusion.<sup>22</sup>

## **II. The world’s largest fracked gas-to-methanol refinery would have unavoidable significant adverse impacts under SEPA.**

NWIW’s methanol refinery would likely become the first or second single largest source and cause of GHG pollution in Washington,<sup>23</sup> increasing the state’s total carbon footprint by 1 to 2 percent. The DSEIS’ conclusion that NWIW’s climate pollution is not “significant” at the state level defies logic. As set forth in our prior comments, this project would result in significant environmental impacts, including impacts from increased greenhouse gas (GHG) emissions—such as sea level rise and altered hydrologic cycles resulting in increased droughts, floods and storm events—as well as direct impacts from construction on local resources, including harm to marine life, including protected species, and marine ecosystems through increased vessel traffic and sediment deposition.

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<sup>16</sup> See *Marsh v. Oregon Natural Res. Council*, 490 U.S. 360, 371 (1989).

<sup>17</sup> WAC 197-11-792.

<sup>18</sup> WAC 197-11-752.

<sup>19</sup> WAC 197-11-060(4)(c).

<sup>20</sup> *Cheney v. City of Mountlake Terrace*, 87 Wn.2d 338, 344 (1976).

<sup>21</sup> WAC 197-11-440(5) and (6); see also *Organization to Preserve Agr. Lands v. Adams Cty.*, 128 Wn.2d 869, 913 (1996).

<sup>22</sup> *Solid Waste Alternative Proponents v. Okanogan Cty.*, 66 Wn.App. 439, 444–45 (1996) (citing *Methow Valley Citizens Council v. Regional Forester*, 833 F.2d 810, 815 (9th Cir. 1987), *rev’d on other grounds*, *Robertson v. Methow Valley Citizens Council*, 490 U.S. 332 (1989)).

<sup>23</sup> See DSEIS, Table 3-1. Top 15 Individual GHG Emission Sources in Washington (2016).

The DSEIS—relying on a suspect coal displacement theory and a vague, unsupported promise of “voluntary” mitigation—concludes that NWIW’s GHG pollution will have “no unavoidable significant adverse impacts” at the state or global levels.<sup>24</sup> As explained throughout this Comment, however, the DSEIS systematically minimizes and understates the true climate costs of NWIW’s proposal. The many deficiencies in the DSEIS identified in this comment letter render the analysis incomplete and in violation of the Washington SEPA. The responsible SEPA officials must therefore revisit the “no unavoidable significant adverse impacts” determination and provide a full analysis of the adverse impacts this project would have on the environment, as SEPA requires.

### **III. The DSEIS violates SEPA by underestimating lifecycle GHG emissions.**

There are several shortcomings of the life cycle analysis of the GHG emissions attributable to the proposal. As set forth below, the DSEIS’ reliance on insufficient and misrepresented information renders the analysis entirely incomplete and suggests that the project would have much greater impacts than what is presented. Moreover, this insufficient analysis violates SEPA’s mandate that an EIS contain a “reasonably thorough discussion of the significant aspects of a [proposal’s] environmental impacts . . . .”<sup>25</sup> This standard boils down to the requirement that an EIS take a “hard look” at the proposal and its impacts on the environment and human health.<sup>26</sup> The self-serving life cycle analysis commissioned by NWIW does not meet this standard, for the following reasons.

#### **a. The DSEIS’ upstream methane leakage rate estimate is too low.**

1 The DSEIS uses an implausibly low estimate of the amount of greenhouse gases that will be emitted by “upstream” activity, *i.e.*, producing, processing, and transporting gas to the Kalama facility. The DSEIS calculates these emissions using an estimate of the “leak rate,” which is the percentage of the methane extracted from the ground that escapes to the atmosphere (whether through inadvertent leaks or through equipment that vents gas by design) before reaching its end use destination.<sup>27</sup> The DSEIS surveys a fraction of the available literature on methane emissions and selects a leak rate that is the absolute lowest, by far, of the provided

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<sup>24</sup> DSEIS, p. 3-31.

<sup>25</sup> *Toward Responsible Dev. v. City of Black Diamond*, No. 69418-9-I, 2014 Wash. App. LEXIS 197, at \*1 (Ct. App. Jan. 27, 2014).

<sup>26</sup> *See Pub. Util. Dist. No. 1 of Clark Cnty. v. Pollution Control Hearings Bd.*, 137 Wash. App. 150, 158 (2007).

<sup>27</sup> DSEIS Appx. A, p. 117.

estimates: 0.32 percent.<sup>28</sup> Other estimates listed in the DSEIS are 3 to 7 times higher.<sup>29</sup> The 0.32 estimate cannot be reconciled with the wide body of peer reviewed literature regarding emissions from gas production<sup>30</sup> and reliance on that figure does not constitute the hard look that SEPA requires.

Most of the estimates cited in the DSEIS are either peer reviewed publications or readily available government reports, such as the EPA's annual greenhouse gas inventory.<sup>31</sup> The 0.32 figure, however, is simply cited as "GHGenius 2016." There reference list cites the general GHGenius website, which introduces the modeling tool, but nothing in the DSEIS identifies an actual report or publication. Not only is the .32 percent figure lower than the others provided in the DSEIS, but we are not aware of *any* peer reviewed or published government study of the gas lifecycle that adopts an estimate anywhere near this low.

The DSEIS fails to justify the disparity between the estimate it uses and other available estimates. The DSEIS asserts that the other cited literature concerns North America as a whole, but that gas production in British Columbia is lower-emitting.<sup>32</sup> This explanation is incomplete at best. The DSEIS does not provide any citation to actual data for portions of the upstream process beyond the wellhead.<sup>33</sup> Although the DSEIS generally cites aspirations for effective regulation of gas production in British Columbia, production throughout North America is subject to similar rules, and the DSEIS offers no support for the contention that these rules are more stringent or better enforced in British Columbia. And the body of the DSEIS tempers the claim that B.C. emissions are lower: when comparing scenarios in which the Project receives all gas from British Columbia vs. from North America generally, the DSEIS asserts this change would increase upstream methane emissions by 44 percent.<sup>34</sup> However, the peer reviewed or EPA estimates of North American gas production provide a leak rate that is 300–700 percent, not 44 percent, higher than the figure used in the DSEIS. Of these, the most credible is the highest estimate, which is the most recent, peer reviewed, and builds on prior data.<sup>35</sup>

<sup>28</sup> DSEIS, p. 3-14; DSEIS Appx. A, pp. 117–18.

<sup>29</sup> DSEIS Appx. A, pp. 117–18.

<sup>30</sup> Exhibit 1, Alvarez, *et al.*, *Assessment of methane emissions from the U.S. oil and gas supply chain*, Science (2018); *see also* Tong *et al.*, [Comparison of Life Cycle Greenhouse Gases from Natural Gas Pathways for Medium and Heavy-Duty Vehicles](#), 49 *Environ. Sci. Technol.* 12, p. 7126 (2015) (estimating methane leakage rates of 1.5–3.3 percent); *see also* Exhibit 2, Sierra Club, *Fracked Gas: Nothing "Natural" About It* (2018) (reviewing literature and estimating leakage rate of 3 percent).

<sup>31</sup> DSEIS Appx. A, pp. 117–18.

<sup>32</sup> DSEIS Appx. A, p. 118.

<sup>33</sup> DSEIS Appx. A, p. 118

<sup>34</sup> DSEIS Appx. A, pp. 48, 97.

<sup>35</sup> Exhibit 1; *see also* Tong *et al.* (2015) (estimating methane leakage rates of 1.5–3.3 percent).

**b. The DSEIS methodology for calculating methane leakage is flawed and has been discredited.**

Even the higher estimates cited in the DSEIS are almost certainly underestimates because they primarily rely on a “bottom-up inventory” methodology that multiple peer-reviewed publications have found to “systematically underestimate total emissions.”<sup>36</sup>

“Bottom-up” studies use an estimate of the average emissions from an individual piece of equipment or an individual event, such as a high-bleed pneumatic device or a well completion, and multiply that per-component value by an estimate of the total number of components or events of that type (*i.e.* assuming that each well has X pneumatic controllers that emit Y tons of methane). A different method of estimating oil and gas sector methane emissions is a “top down” approach, where researchers measure the methane accumulation in the atmosphere in areas where oil and gas activity is occurring and then estimate the fraction of this methane attributable to emissions from oil and gas activity. For example, a researcher might measure methane concentrations upwind and downwind of gas activity and then subtract out the methane estimated to have been emitted from other sources. Certainty in source attribution has increased in recent years as scientists are better able to distinguish methane sources based on detected levels of co-occurring compounds such as ethane or isotopic composition of atmospheric methane.

Recently, peer-reviewed publications utilizing top-down techniques to estimate methane emissions from oil and gas have proliferated, and these studies provide compelling evidence that the aggregate methane emission estimates based on “bottom up” studies (such as those cited in the DSEIS) underestimate gas production methane emissions by a significant margin. For example, two studies in Colorado’s Denver-Julesberg Basin concluded that, during gas production alone (not including emissions from downstream segments of the industry, like transmission and distribution), the gas leak rate was about 4%.<sup>37</sup> The same team of researchers found even higher methane leak rates in Utah’s Uinta Basin, estimating escaped methane at 9 ±

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<sup>36</sup> Exhibit 1, p. 2; *see also* Brandt, *et al.*, [Methane leaks from North American natural gas systems](#) *Energy and environment*, 343 *Science* 6172 (February 14, 2014).

<sup>37</sup> Petron, *et al.*, [A new look at methane and non-methane hydrocarbon emissions from oil and natural gas operations in the Colorado Denver-Julesburg Basin](#), 119:9 *J. Geophys. Res. Atmospheres* (June 3, 2014). This is consistent with an earlier study, by the same lead author, which estimated using top-down techniques that 2.3 to 7.7 percent of production was vented in the studied and concluded more generally that “the methane source from natural gas systems in Colorado is most likely underestimated by at least a factor of two.” Petron, *et al.*, [Hydrocarbon emissions characterization in the Colorado Front Range: A pilot study](#), 117:D4 *J. Geophys. Res. Atmospheres* 4304 (February 21, 2012).

3% of total production.<sup>38</sup> Other research has confirmed that this problem is not unique to the mountain west, and that North American emissions as a whole are understated.<sup>39</sup>

The peer reviewed literature offers compelling explanations for why bottom-up estimates are systemically too low. The bottom-up methodology relies on sampling methane leaks from various pieces of equipment under “ideal operating conditions.”<sup>40</sup> However, evidence indicates that there are “a small number of ‘superemitters’” with emissions that are much higher than anticipated by the emission factors used in the bottom-up estimates.<sup>41</sup> For example, one analysis of 75,000 components at five different facilities found that just 50 leaks and compressor seals were responsible for 58% of overall emissions.<sup>42</sup> These rare but severe leaks are unlikely to be represented in the data used to inform bottom-up calculations, which may be based on surveys of a few dozen, or even a hundred, components. This is especially so because site and equipment operators can be expected to operate especially diligently when they know they are being surveyed, such that “there are reasons to suspect sampling bias” in the surveys used to develop the emission factors used in bottom up analysis.<sup>43</sup> On the other hand, these superemitters are likely to be captured by top-down estimates.

In summary, the DSEIS’s estimates of upstream emissions rely on a leakage rate that is doubly suspect: it is irrationally and drastically lower than the rates provided in the published literature cited by the DSEIS, but even those other estimates largely rely on a methodology that is known to systemically underestimate emissions. The SEPA “hard look” requires accounting for top-down studies of methane emissions and the flaws of bottom-up estimates.<sup>44</sup>

**c. Assuming that NWIW’s gas will come from the Montney shale formation in British Columbia does not pass SEPA’s “hard look” test.**

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<sup>38</sup> Karion, *et al.*, [Methane emissions estimate from airborne measurements over a western United States natural gas field](#), 40:16 Geophysical Research Letters 4393 (August 27, 2013); *see also* J. Tollefson, [Methane leaks erode green credentials of natural gas](#), Nature (January 2, 2013).

<sup>39</sup> Brandt *et al.* (2014) at pp. 733–35.

<sup>40</sup> Exhibit 1, p. 2.

<sup>41</sup> Brandt *et al.* (2014) at p. 733.

<sup>42</sup> EPA, [Cost-Effective Directed Inspection and Maintenance Control Opportunities at Five Gas Processing Plants and Upstream Gathering Compressor Stations and Well Sites](#), Table 2 (March 2006).

<sup>43</sup> Brandt *et al.* (2014) at p. 734.

<sup>44</sup> *Toward Responsible Dev. v. City of Black Diamond*, 179 Wash. App. 1012 review denied, 180 Wash. 2d 1017, 327 P.3d 54 (2014) (unpublished opinion) (“Courts review an EIS as a whole and examine all of the various components of [the] agency’s environmental analysis ... to determine, on the whole, whether the agency has conducted the required ‘hard look.’”).

2 Without a guarantee, or even any supporting documentation such as a completed contract, the DSEIS asserts that “NWIW will be contracting and receiving Canadian natural gas, primarily from the Montney formation in British Columbia.”<sup>45</sup> Because the DSEIS provides no real evidence to support that the Montney formation will be the sole (or even primary) source of NWIW’s gas for the next 40 years, a cynical reader might conclude that the project proponents selected the Montney field because it had a low reported methane leakage rate and because the British Columbian Ministry of Natural Gas Development government styles its self as “home to Best Practices”<sup>46</sup> for the fracking industry.

3 In reality, however, “is not clear why [NWIW’s] assumption should “be expected to hold true for the 40-year lifespan of the Project, especially as United States natural gas production has increased substantially in recent years.”<sup>47</sup> NWIW’s massive new demand for fracked gas could “cause fuel shuffling that results in an increased use of non-Canadian natural gas for other projects.”<sup>48</sup> Other sources of natural gas that the project could utilize would have a higher methane leakage rate, and therefore the DSEIS is using an unsupported assertion to minimize the potential emissions associated with the project, in violation of SEPA.

4 Even if the Montney region would ultimately supply a significant amount of NWIW’s gas, the DSEIS’ predictions about upstream methane leakage from this gas field are unlikely to hold true. First, as explained in Section III(b), above, the ultra-conservative “bottom-up” leakage rate estimates for the Montney field relied on in the DSEIS are unreliable and underestimate the actual leakage likely to occur. Second, most of the Montney field is actually in Alberta, and therefore not regulated by the British Columbian provincial government, undermining the DSEIS’s reliance on the “Best Practices” that may be employed.<sup>49</sup>

**d. The DSEIS obscures the climate pollution caused by making methanol into olefins.**

NWIW’s self-serving DSEIS attempts to have it both ways: on one hand insisting that this proposal is exclusively focused on producing olefins while on the other hand obscuring the

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<sup>45</sup> DSEIS Appx. A, p. 27.

<sup>46</sup> DSEIS Appx. A, p. 118.

<sup>47</sup> Exhibit 3, Washington Attorney General, *Comment to PSCAA on DSEIS for PSE LNG Project*, p. 1 (November 21, 2018).

<sup>48</sup> Exhibit 4, Washington Department of Ecology, *Comment to PSCAA on DSEIS for PSE LNG Project*, p. 1. (November 21, 2018).

<sup>49</sup> See Canadian National Energy Board, [\*Frequently Asked Questions - An assessment of the unconventional petroleum resources in the Montney Formation, West-Central Alberta and East-Central British Columbia\*](#) (Updated September 13, 2018).

5 climate pollution that would result from actually making NWIW's methanol into olefins.<sup>50</sup> The DSEIS states that the downstream GHG pollution caused by turning methanol into olefins would total 0.42 million tonnes of CO<sub>2</sub>e, but that figure is “not reflected in the overall LCA conclusion.”<sup>51</sup> The result of this omission is that the DSEIS repeatedly misrepresents the proposal's total direct and indirect emissions as 2.17 million tonnes CO<sub>2</sub>e per year,<sup>52</sup> instead of 2.59 million tonnes. Thus, the DSEIS purposefully obscures a very significant source of downstream emissions and the overall impacts of the project, even though the GHG emissions related to olefin production are reasonably foreseeable if—taking NWIW at its word—the proposal would only produce methanol destined to become olefins.

SEPA does not allow NWIW to obscure the actual emissions attributable to the project by claiming that carbon emissions resulting from olefin production from methanol would be the same as olefins produced from coal. The excuse that the emissions “would occur either way” does not comport with SEPA's requirement to disclose a foreseeable indirect impact of making methanol to be turned into olefins.<sup>53</sup> And, as discussed below, this reasoning conflates the lifecycle analysis with NWIW's dubious “displacement” theory and makes it more difficult than necessary for the public and decisionmakers to understand the actual downstream climate pollution resulting from NWIW's proposal. Ignoring the foreseeable GHG emissions caused by turning methanol into olefins violates SEPA's requirement to take a hard look at a proposal's impacts.

#### IV. NWIW's market displacement theory does not pass SEPA's “hard look” test.

For the reasons below, NWIW's reliance on the theory that its methanol will displace the use of Chinese coal-derived methanol for the next 40 years does not constitute the “hard look” that SEPA requires. To comply with SEPA, an EIS must contain a “reasonably thorough discussion” of a proposal's environmental impacts, sometimes referred to as a “hard look.”<sup>54</sup> The coal displacement theory is merely a loose association of unfounded assumptions selectively grouped together to prop up NWIW's proposal. As explained in the subsections below, these

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<sup>50</sup> See DSEIS, p. 3-19; see also DSEIS Appx A, p. 92 (lifecycle emissions would be “2.59 million tonnes of GHG emissions if the MTO facility is counted”).

<sup>51</sup> *Id.*; see also DSEIS Appx. A, p. 92 (NWIW lifecycle emissions would be “2.59 million tonnes of GHG emissions if the MTO facility is counted”).

<sup>52</sup> See, e.g., DSEIS, pp. 1-6, 3-23; Fig. 3-12.

<sup>53</sup> See WAC 197-11-792 (explaining that the scope of an EIS includes direct, indirect, and cumulative impacts).

<sup>54</sup> *Toward Responsible Dev. v. City of Black Diamond*, 179 Wash. App. 1012 (2014); see also *Coalition for a Sustainable 520 v. U.S. Department of Transportation*, 881 F. Supp. 2d 1243, 1259 (W.D. Wash. 2012) (holding implicitly that “hard look” under NEPA sufficient for SEPA review).

assumptions, and the “displacement” theory they support, crumble when subjected to the “hard look” scrutiny that SEPA requires. Accordingly, **the displacement theory must be eliminated from any future SEPA analysis of this proposal.** Given the proposals’ massive direct GHG emissions and the need for immediate GHG reductions to avoid the worst impacts of climate change, this unsupported theory is yet another attempt to paper over the proposal’s actual impacts on our climate.

**a. NWIW cannot predict or control the fluctuating fossil fuels prices that underpin its displacement theory.**

NWIW’s putative ability to “displace” coal-based methanol—without displacing other, lower GHG-intense sources of olefins like naphtha—is premised on NWIW’s undisclosed assumptions about world fossil fuel prices. Even assuming, for the sake of argument, that NWIW would displace coal-based olefins under *current* fossil fuel prices, those prices are almost certain to change during the next 40 years in ways that NWIW can neither predict nor control. As the United States Court of Appeals for the D.C. Circuit recently noted, “projections of energy markets over a 25-year period are highly uncertain and subject to many events that cannot be foreseen, such as supply disruptions, policy changes, and technological breakthroughs.”<sup>55</sup> Considering the radical and often unforeseen fluctuations in the prices of coal, crude oil, natural gas, and methanol that have occurred in the past decade, any projection that relies on those prices remaining static over the next 40 years is arbitrary and unhelpful.

**b. NWIW’s market analysis cannot accurately predict olefin production or consumption in China’s planned economy.**

The coal displacement theory is also unreliable because it ignores existing non-market forces—and cannot predict potential future non-market forces—that may significantly impact how olefins are produced and consumed in China. The Chinese economy is a planned economy, subject to government control over how, where, and when to produce and consume certain commodities.<sup>56</sup> The Chinese government has set aggressive air pollution and GHG reduction goals that are having, and will continue to have, a significant impact on the amount of coal mining, coal burning, and coal-to-olefins production in China. Additionally, the U.S. and China are engaged in an ongoing trade dispute which, via import tariffs, would directly affect the price of NWIW’s methanol and its ability to displace other sources of methanol or olefins in Chinese markets. The DSEIS acknowledges some of these realities but does not explain how or why a classic supply curve—which does not account for some existing, and all future, non-market

<sup>55</sup> *Sierra Club v. United States DOE*, 867 F.3d 189, 194 (D.C. Cir. 2017).

<sup>56</sup> *See, e.g.*, DSEIS Appx. A, p. 59 (describing China’s strict regulation of natural gas consumption by economic sector).

7 | forces—provides a reasonable or helpful prediction of how China’s planned economy would respond to increased methanol supply from NWIW.

Instead, the DSEIS states that the displacement “analysis is based on the assumption that no government subsidy is provided to the producer or the buyer and that the cash price of the product must cover the cost of production.”<sup>57</sup> Under the existing circumstances, however—which involve escalating tariffs, massive financial support stateside for NWIW from state and federal agencies,<sup>58</sup> and a Chinese government with a history of subsidizing its own domestic industries—this assumption, and the displacement analysis it is intended to support, are not credible.

Specifically, the displacement analysis rests on the unsupported assertion that—if denied access to NWIW’s product—China will simply increase its domestic coal-to-methanol production indefinitely to meet growing demand for methanol and olefins.<sup>59</sup> But China recognizes the problematic nature of its coal-to-methanol industry and is actively taking steps to reduce coal-to-methanol production and its GHG footprint.<sup>60</sup> NWIW’s assumption that Chinese coal-to-methanol production will automatically rise to meet methanol and olefin demand is based on an irrational application of free-market principles to a planned economy. In reality, China is already acting to reduce coal-to-methanol production, appears likely to continue to do so without this project, and NWIW should not claim credit for “causing” reductions in coal-based methanol that are actually the result of Chinese domestic policy.

7 | Alternatively, it is plausible that China would decide to produce and consume *more* coal-derived methanol, despite the market forces that NWIW foresees. The Final SEIS should discuss whether production and consumption of coal-based methanol in China is strictly market driven or whether it is driven “more by labor policy” and “social incentives,” including China’s government’s desire to “foster downstream plastic processing as well as upstream coal mining employment in China’s poorer interior regions.”<sup>61</sup> If coal-based methanol production in China is not strongly linked to market forces, NWIW’s production seems unlikely to influence the amount of coal-based methanol produced or consumed in China. Regardless, the SEIS needs to analyze

<sup>57</sup> DSEIS Appx. A, p. 58.

<sup>58</sup> See, e.g., Pacific Standard, [Taxpayers May Soon Be on the Hook for a \\$2 Billion Fracked Gas Refinery](#) (Nov. 7, 2018).

<sup>59</sup> DSEIS Appx. A, p. 58 (“[I]n the absence of attractive imported methanol, coal based domestic methanol production will continue to rise to meet growing industry needs based both in economic and market forces as well as policy direction.”).

<sup>60</sup> DSEIS Appx. A, pp. 59–60.

<sup>61</sup> Center for International Environmental Law, [Fueling Plastics: How Fracked Gas, Cheap Oil, and Unburnable Coal are Driving the Plastics Boom](#), p. 6 (2017).

7 the actual emissions associated with the project, and not attempt to minimize or ignore those emissions through an illogical and unsupported displacement theory.

**c. NWIW’s methanol production may add to other methanol and olefin production in China.**

NWIW’s entire claim to GHG reductions is based on its theory that NWIW’s methanol will be consumed *instead of* coal-based methanol. But if the Chinese methanol-to-olefin industry consumes NWIW’s methanol *in addition to* the available coal-based methanol, then NWIW’s proposal would result in millions of tons of increased CO<sub>2</sub>e pollution each year. Unfortunately, the market analysis in Appendix A of the DSEIS never explains why NWIW’s plan to provide more and cheaper methanol to China’s olefin producers will not just result in more overall methanol consumption.

8 First, the market analysis ignores the fundamental economic principle that increasing and cheapening the supply of a good usually results in increased demand for that good.<sup>62</sup> For instance, when crude oil production spikes and gasoline prices at the pump fall,<sup>63</sup> drivers respond, in part, by buying more gasoline.<sup>64</sup> Similarly, cheapening the production of olefins (by selling NWIW’s cheap methanol to Chinese methanol-to-olefin plants) should decrease the market price of olefins, increasing the demand for olefins and their precursor—methanol. Accordingly, the DSEIS’ assumption of a 1-to-1 displacement of coal-based methanol (and its GHG emissions) is likely incorrect because the DSEIS does not appear to account for increased olefin demand and consumption as a result of cheapening olefin production. In order to adequately address this issue, the final SEIS would need to examine the market for plastics and other end-uses for olefins. Unless the demand for plastics is static, and demand does not fluctuate in relation to price, cheaper plastics made from NWIW’s cheaper methanol would result in increased plastics consumption and a concomitant increase in the GHG pollution associated with plastics manufacture.

Second, the displacement analysis does not deal realistically with China’s rapidly expanding demand for methanol or the impact of that expanding demand on future GHG emissions. NWIW’s market analysis essentially boils down to this statement: “the low delivered cost” of NWIW’s methanol “will displace higher delivered cost product [Chinese coal-based methanol] *in a stable demand environment*.”<sup>65</sup> But the demand for methanol in China is far from

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<sup>62</sup> See The Balance, [Elastic Demand with Its Formula, Curve, and Examples](#) (August 13, 2018).

<sup>63</sup> See The Balance, [How Crude Oil Prices Affect Gas Prices](#) (October 29, 2018).

<sup>64</sup> See New York Times, [When Gas Becomes Cheaper, Americans Buy More Expensive Gas](#) (October 19, 2015).

<sup>65</sup> DSEIS Appx. A, p. 80 (emphasis added).

9 stable. Elsewhere, the DSEIS admits that there is “rapid grow in Chinese methanol consumption”<sup>66</sup> and that “demand for methanol is growing.”<sup>67</sup> The downfall of NWIW’s theory is that, as demand for methanol in China continues to grow, the Chinese methanol-to-olefin industry will ultimately absorb both NWIW’s production *and* all of the higher-cost methanol produced by Chinese coal-to-methanol plants. At that point, the GHG emissions from NWIW’s proposal would add to, rather than displace, GHG emissions from China’s coal-to-methanol plants. The SEIS must account for this potential increase, and analyze the impacts to the environment as SEPA requires.

NWIW essentially admits that increasing demand for methanol in China will, at some future date, undercut its coal displacement theory, as described in the preceding paragraph.<sup>68</sup> NWIW’s response to this obvious deficiency in its market analysis is that—at any future level of increased methanol demand—NWIW’s cheap methanol would still be displacing methanol made by some hypothetical future high-cost, high-GHG coal-to-methanol plant that would occupy the marginal position on the methanol supply curve.<sup>69</sup>

10 The first problem with NWIW’s dismissal of the impact of increasing methanol demand on the displacement theory is that NWIW assumes that China would increase its coal-to-methanol production if methanol demand ever exceeds the capacity of China’s existing coal-to-methanol facilities (plus imports). As explained in Section IV(b) above, China may not necessarily increase its coal-to-methanol production if methanol demand exceeds supply. China recognizes the problematic nature of coal-to-methanol, has already taken steps to limit its production, and could decide to prohibit the construction of any new coal-to-methanol facilities in the future (as China has prohibited natural gas-to-methanol facilities, albeit for different reasons). If China caps or restricts future coal-to-methanol production, the hypothetical future coal-to-methanol plant that NWIW envisions displacing would never have existed anyway and NWIW’s GHG emissions will merely add to the emissions of the existing coal-to-methanol plants that would be operating at full capacity to meet increased methanol demand. Again, the DSEIS fails to account for this reasonably foreseeable outcome.

10 The second problem with NWIW dismissing the impact that increasing methanol demand will have on displacement is that, even if NWIW would displace some hypothetical future high-cost source of methanol, that source might not be a coal-to-methanol plant (as the DSEIS

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<sup>66</sup> DSEIS Appx. A, p. 64.

<sup>67</sup> *Id.* at p. 78.

<sup>68</sup> See DSEIS Appx. A, p. 80 (“As the methanol market continues to grow, some of this displacement of higher cost existing supply may be mitigated . . .”).

<sup>69</sup> See DSEIS Appx. A, p. 80 (asserting that, even at high levels of methanol demand, “the continued development of high cost CTM or CTO plants will be reduced”).

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assumes). As demand increases, the methanol provider on the margin of the supply curve could change from a coal-to-methanol plant to some other source of methanol with higher production costs than coal—but a smaller carbon footprint than NWIW. For instance, if the marginal supplier in a high-demand scenario turns out to be a facility that makes methanol via electrolysis powered exclusively by solar energy,<sup>70</sup> then NWIW’s methanol would wind up “displacing” a lower-GHG source of methanol. Given rapidly increasing demand for methanol, constantly shifting fossil fuel prices and regulations, and rapidly evolving petrochemical technologies, it is not reasonable to assume that any particular source of methanol will be on the margin of the supply curve in three, five, fifteen, or forty years. Accordingly, NWIW’s assertion that it will be displacing high-GHG coal-derived methanol for the entire lifetime of the Kalama proposal is mere salesmanship and cannot survive the “hard look” required by SEPA.

**d. Cheap crude oil and naphtha-derived olefins may displace coal-based olefins independently of NWIW’s proposal.**

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NWIW’s displacement analysis, focused exclusively on the methanol-to-olefin market, conveniently side-steps the impact that naphtha-derived olefins may have on the production of Chinese coal-based olefins. If the cost of naphtha-based olefins dips (as a result of low crude oil prices) below the cost of coal-based olefins, then (by NWIW’s logic) olefin consumers would purchase naphtha-based olefins to the exclusion of coal-derived olefins. Nevertheless, NWIW fails to explain what crude oil price would allow naphtha-derived olefins to undersell coal-derived olefins or why NWIW expects world crude prices to remain above that magic number for the next 40 years, especially in the current volatile market. One study found that coal-based olefin production in China became unprofitable—and olefin derived naphtha became even more profitable—when the world price of crude was less than \$65 per barrel.<sup>71</sup> As of December 21, 2018, crude oil was trading at around \$50 per barrel.<sup>72</sup> In fact, WTI crude has only barely climbed above \$65 per barrel on a few occasions in the last four years.<sup>73</sup> The displacement theory NWIW has relied on disintegrates under that scenario because cheap crude oil and naphtha could easily remove the Chinese CTO industry with or without NWIW, a possibility conveniently ignored in the DSEIS.

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<sup>70</sup> See, e.g., Uusitalo *et al.*, *Potential for greenhouse gas emission reductions using surplus electricity in hydrogen, methane and methanol production via electrolysis*, Energy Conversion and Management, Vol. 134, pp. 125–34 (February 2018).

<sup>71</sup> Exhibit 5, Qun *et al.*, *A comparison between coal-to-olefins and oil-based ethylene in China: An economic and environmental prospective*, 165 *Journal of Cleaner Production* 1351–1360, 1356 (2017).

<sup>72</sup> See [Oilprice.com](http://Oilprice.com) (last accessed December 21, 2018).

<sup>73</sup> See Macrotrends, [WTI Crude Oil Prices - 10 Year Daily Chart](http://www.macrotrends.net/10-year-daily-chart) (last accessed December 21, 2018).

11 NWIW's rejoinder is that the supply of "refinery co-produced olefins [*i.e.* naphtha-derived olefins] will not increase without an expansion in oil refining capacity,"<sup>74</sup> so Chinese coal-to-olefins will remain marketable because demand for olefins is increasing and there is not a sufficient supply of naphtha to meet that demand. The DSEIS, however, does not provide any data to support its implication that the current or future demand for olefins in China exceed existing naphtha-based olefin supplies. Further, NWIW incorrectly implies that world petroleum refining capacity is not expanding. It is, and growth in global demand for refined products, like naphtha, is tapering off at the same time.<sup>75</sup> With crude prices remaining low and refinery capacity increasing, cheap naphtha-based olefins could easily disrupt China's coal-to-methanol-to-olefins market. If cheap naphtha displaces coal as a raw material for olefins because of low crude prices, NWIW cannot reasonably claim credit for reducing the GHG footprint of China's olefin industry. The DSEIS therefore does not provide the "hard look" that SEPA requires.

12 Contrary to the impression generated by the DSEIS, most of the olefins consumed in China are not derived from methanol made from coal *or* fracked gas. The most significant source of olefins consumed in China is actually naphtha,<sup>76</sup> so comparing the GHG emissions produced by making olefins from naphtha versus NWIW's proposed method should be a key part of the DSEIS. Unfortunately, the DSEIS merely contains this terse statement: "The LCA evaluated the GHG emissions from [the naphtha-to-olefins] process and found it to have greater GHG emissions than the proposed project."<sup>77</sup> The apparent basis for this statement, found in Appendix A, does not rely on the best available peer-reviewed science. Appendix A asserts that making olefins from naphtha results in 2.32 kg CO<sub>2</sub>e/kg olefin, while NWIW's process is slightly more efficient, emitting 1.85 to 2.26 kg CO<sub>2</sub>e/kg of olefin.<sup>78</sup> This comparison overestimates the GHG intensity of producing olefins from naphtha and understates the GHG emissions from NWIW's olefins, making NWIW's proposal appear "greener" than making olefins from naphtha. The GHG intensity of NWIW's olefins is actually higher than reported in this comparison because, as explained in Section III, above, NWIW's estimated upstream methane leakage rate is likely an order of magnitude too low. Conversely, the GHG intensity of naphtha-based olefins reported in peer-reviewed literature is lower than the figure used in this comparison, a reality that the DSEIS acknowledges but fails to explain.<sup>79</sup> The final SEIS should compare olefin production from

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<sup>74</sup> DSEIS Appx. A, p. 141.

<sup>75</sup> See Bloomberg Businessweek, *Shale? Here's the Other Wave Washing Into the Oil Market* (March 6, 2018) (noting that the International Energy Agency predicted a 7 million gallon per day increase in refinery capacity by 2023).

<sup>76</sup> DSEIS Appx. A, p. 141 (acknowledging that "naphtha steam cracking has the largest share of the olefin market").

<sup>77</sup> DSEIS, p. 3-23.

<sup>78</sup> DSEIS Appx. A, Table 5.12.

<sup>79</sup> DSEIS Appx. A, p. 141.

12 | naphtha versus fracked gas once the GHG emissions of production from naphtha and fracked gas are adequately quantified.

## V. Additional Problems with the Life Cycle Analysis.

### a. The DSEIS presents outdated and irrelevant information about methane's impact on our climate.

13 | The DSEIS relies on outdated scientific information about methane's global warming potential (GWP). Specifically, the DSEIS uses a value for methane's GWP of 25, which is from the IPCC's 2007 Fourth Assessment Report (AR4), but it has since been updated by the IPCC's Fifth Assessment Report (AR5).<sup>80</sup> While some governments may still use the 2007 value to report GHG emissions for consistency, it would be arbitrary to ignore the latest science in a SEPA document assessing the actual impacts of the Kalama facility's GHG emissions.<sup>81</sup>

The DSEIS violates SEPA by exclusively using the 100-year GWPs. To disclose the near-term impact of emissions, the DSEIS should use the 20-year GWP instead of, or at least in addition to, the 100-year value.<sup>82</sup> As the IPCC explained, "The choice of emission metric and time horizon depends on type of application and policy context . . . ."<sup>83</sup> Twenty years is a far more relevant time scale for discussing climate impacts due to methane pollution than one hundred years. Reducing GHG emissions and impacts over these next 20 years is crucial because that is the time period in which our global society must take action to limit climate change: CO<sub>2</sub> emissions need to reach net zero around 2050 to have a 50 percent chance of limiting warming to 1.5 degrees Celsius.<sup>84</sup> Recent reports by the IPCC<sup>85</sup> and the U.S. government<sup>86</sup> also illustrate that severe climate change impacts could be felt as early as 2040 if current emission trends continue. Because avoiding these GHG thresholds and impacts are relevant policy goals, ignoring the 20-

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<sup>80</sup> DSEIS Appx. A, p. 4.

<sup>81</sup> See *W. Org. of Res. Councils v. U.S. Bureau of Land Mgmt.*, No. CV 16-21-GF-BMM, 2018 WL 1475470, at \*16 (D. Mont. Mar. 26, 2018) (holding, in analogous context, that agency acted arbitrarily by only evaluating methane using outdated global warming potential).

<sup>82</sup> See, e.g., Tong, *Comparison of Life Cycle Greenhouse Gases from Natural Gas Pathways for Medium and Heavy-Duty Vehicles*, 49 *Environmental Science & Technology* 12 (2015) (a study, cited in the DSEIS, that presented both the 20- and 100-year methane GWPs when describing the life cycle methane emissions from fracked gas production).

<sup>83</sup> IPCC, AR5, p. 87 (2014).

<sup>84</sup> Rogelj *et al.*, [Energy system transformations for limiting end-of-century warming to below 1.5°C](#), *Nature Climate Change*, Vol. 5 (June 2015).

<sup>85</sup> IPCC, [Special Report: Global Warming of 1.5 °C](#) (October 1, 2018).

<sup>86</sup> U.S. Global Change Research Program, [Fourth National Climate Assessment, Volume II: Impacts, Risks, and Adaptation in the United States](#) (November 23, 2018).

year GWP of NWIW’s methane pollution violates SEPA’s purpose, because it will result in uninformed decision-making. Moreover, in an analogous case in under the National Environmental Policy Act, a federal court decided that an agency acted arbitrarily by only evaluating the long-term GWP of methane pollution.<sup>87</sup> The DSEIS’ proffered justification for using the 100-year GWP—“for consistency with International, United State and Washington reporting requirements”<sup>88</sup>—has little if any relevance to the merits of NWIW’s proposal. Discussing the 100-year global warming potential of methane is not helpful to decision-makers or the public because the effects of, and meaningful responses to, methane emissions must occur much sooner.

13 The 20-year GWP of methane is used in the lifecycle analysis just once—buried on page 99 of Appendix A of the DSEIS. Even accepting the DSEIS’ untenably low upstream methane leakage rate, using the 20-year GWP of methane brings the life cycle GHG emissions attributable to NWIW’s proposal to around 3 million tons of CO<sub>2</sub>e per year. That would make NWIW the second largest individual cause of GHG pollution in Washington, and the largest when TransAlta is decommissioned.<sup>89</sup> The DSEIS also misleadingly suggests that using the 20-year GWP of methane actually makes NWIW’s proposal *better* for our climate in the near-term.<sup>90</sup> Here again, NWIW is relying on its dubious “coal displacement” theory, and some very aggressive estimates of coal-bed methane leakage, to obscure the methanol proposal’s huge climate footprint. As set forth above, reliance on the coal displacement theory is arbitrary and capricious, and the DSEIS therefore fails to provide the “hard look” at methane emissions that SEPA requires.

**b. The life cycle analysis should describe the GHG emissions from burning NWIW’s methanol as fuel.**

14 Based on the publicly available information, it is just as likely that NWIW’s methanol will be burned for fuel as converted into olefins. While the DSEIS states—without any documentary evidence, guarantee, or enforceability—that NWIW “intended” for all of the methanol to be made into olefins,<sup>91</sup> Wu Lebin, president of the Chinese Academy of Sciences Holding Company (which controls NWIW) has recently and repeatedly told media outlets that some or all of NWIW’s methanol could be used for fuel.<sup>92</sup> Given the growing demand for

<sup>87</sup> See *W. Org. of Res. Councils v. U.S. Bureau of Land Mgmt.*, No. CV 16-21-GF-BMM, 2018 WL 1475470, at \*16 (D. Mont. Mar. 26, 2018).

<sup>88</sup> DSEIS Appx. A, p. 4.

<sup>89</sup> See DSEIS, Table 3-1. Top 15 Individual GHG Emission Sources in Washington (2016).

<sup>90</sup> DSEIS Appx. A, p. 99.

<sup>91</sup> DSEIS, p. 3-23; DSEIS Appx. A, pp. ix, 1, 6.

<sup>92</sup> Columbia Riverkeeper *et al.*, *Scoping Comments on the New EIS for the Kalama Methanol Refinery*, p. 10 (March 1, 2018).

methanol for fuel and olefin production in China, either outcome is entirely plausible. The DSEIS, however, cannot merely rely on empty statements of intent, especially where those assertions have been undermined by statements made elsewhere by the project proponent. SEPA requires a hard look at the reasonably foreseeable consequences of each proposal, not the project proponent's intended consequences.

14 The GHG emissions resulting from using methanol to make fuel is quantifiable and the analysis of such emissions should be included as a foreseeable alternative end product and included in SEPA analysis. Moreover, NWIW's representations about the end use of the methanol are suspect because the company understands that the viability of its proposal likely hinges on NWIW's ability to distinguish methanol from LNG and other fossil fuel exports that are unpopular in the Pacific Northwest. Therefore, the final SEIS lifecycle analysis should contain an alternative that discloses the GHG emissions attributable to burning NWIW's methanol as fuel, as well as an alternative focused on turning it into olefins.

**VI. SEPA requires the disclosure, and analysis of the impacts, of a new regional fracked gas pipeline.**

Commenters reiterate their request, contained in multiple previous SEPA comments, that the final SEIS disclose and discuss the impact of a new regional gas pipeline that would be an indirect and/or cumulative impact of NWIW's Kalama proposal, as required by SEPA.<sup>93</sup> The DSEIS discusses non-GHG related changes and information updates to NWIW's proposal, as well as related actions like the Kalama Lateral Pipeline and electrical supply improvements.<sup>94</sup> Similarly, the DSEIS should have addressed new information on the construction of another major fracked gas pipeline into the Pacific Northwest that would be triggered by NWIW's massive fracked gas consumption.

15 **a. A new regional gas pipeline into the Pacific Northwest would be an indirect impact of NWIW's demand for fracked gas.**

A new regional fracked gas pipeline into the Pacific Northwest is an indirect effect of the Kalama methanol refinery that must be addressed in the EIS. "A proposal's effects include . . . indirect impacts caused by the proposal" and include the impacts resulting from growth—such as new regional pipeline infrastructure—caused by a proposal.<sup>95</sup> Given the nature of the Kalama methanol refinery and the state of the regional gas pipeline system, the most reasonable assumption is that gas supply for the Project will require expansion of the regional pipeline

<sup>93</sup> WAC 197-11-792 (requiring analysis of a proposal's indirect and cumulative impacts).

<sup>94</sup> DSEIS, p. 1-4.

<sup>95</sup> WAC 197-11-060(4)(d).

15 system.<sup>96</sup> As such, the expansion of the regional pipeline system necessitated by NWIW's massive gas demand is an indirect effect of the methanol refinery that must be addressed in the EIS.

16 New information supports Commenters' long-held assertion that the Kalama methanol facility would place a strain on regional pipeline capacity and ultimately cause a new regional pipeline to be built. A representative of the Northwest Industrial Gas Users (NWIGU) recently told the Oregon Public Utilities Commission that "our region is now experiencing high [gas] prices . . . not from an actual supply shortage but from an infrastructure constraint"<sup>97</sup> (*i.e.* limited pipeline capacity into the Northwest). Similarly, in early 2018, NWIGU told the Washington Utilities and Transportation Commission that the "Northwest Pipeline capacity into [the Puget Sound area] is fully contracted" and "the need for an expansion of Northwest Pipeline to meet growth in peak day demand" could occur within "a year or two."<sup>98</sup> The Northwest Gas Association's 2018 Outlook also demonstrates that the Pacific Northwest has a tight supply-demand balance under current circumstances.<sup>99</sup> Accordingly, the addition of 320,000 Dth/D of new demand from the Kalama methanol refinery would push the region over the threshold at which a new regional pipeline would be constructed, making a new regional pipeline an undisclosed indirect impact of NWIW's proposal in violation of SEPA.

**b. A new regional gas pipeline into the Pacific Northwest would be a cumulative impact of NWIW's demand for fracked gas.**

A new regional fracked gas pipeline into the Pacific Northwest is, at least, a cumulative impact of the Kalama methanol refinery that must be addressed under SEPA.<sup>100, 101</sup> The Washington Shorelines Hearings Board explained that SEPA requires agencies "to consider the effects of a proposal's probable impacts combined with the cumulative impacts from other

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<sup>96</sup> See Columbia Riverkeeper, *Supplemental Comments on Kalama Methanol Draft EIS* (September 12, 2016).

<sup>97</sup> Willamette Week, [A Natural Gas Pipeline Explosion in British Columbia Spikes Prices in Portland and Raises Questions About Oregon's Energy Future](#) (December 12, 2018).

<sup>98</sup> See Exhibit 6, NWIGU, *Comments on Puget Sound Energy's 2017 Final IRPs* (February 22, 2018).

<sup>99</sup> Northwest Gas Association, [2018 Outlook](#), Appendix A5 (2018).

<sup>100</sup> WAC 197-110060(4)(e); WAC 197-11-330(3)(c) ("Several marginal impacts when considered together may result in a significant adverse impact."); *White v. Kitsap Cnty.*, SHB No. 09-019 at 17 (2009) (cumulative impacts of a proposed action together with the impacts of pending and future actions should be considered).

<sup>101</sup> See also Exhibit 7, Columbia Riverkeeper, *Letter to Army Corps of Engineers Regarding Cumulative Impacts of the Kalama Methanol Refinery* (August 9, 2018).

proposals. . . .”<sup>102</sup> As explained in more detail below, the incremental impact of the Kalama methanol refinery’s demand for fracked gas—when added to the existing demand for fracked gas in the Pacific Northwest and the reasonably foreseeable demand from NWIW’s proposed Port Westward methanol refinery—would necessitate the construction of a new regional fracked gas pipeline into the Pacific Northwest. A new regional gas pipeline into the Pacific Northwest is therefore a cumulative impact of the Kalama methanol refinery.

17 Together, the demand for fracked gas created by NWIW’s proposed methanol refineries at Port Westward and Kalama would exceed our region’s existing gas pipeline supply capacity, necessitating a new regional fracked gas pipeline. NWIW cannot reasonably dispute this fact because Clay Riding—long-time gas industry expert and Vice President of Energy Resources for NWIW—recently admitted it.<sup>103</sup> Gas industry documents supplied in Section VI(a), above, also explain that NWIW’s proposed refineries, which would together likely exceed 600 dekatherms per day of fracked gas demand, would exceed the supply capacity of the regional gas pipeline system.

18 NWIW’s additional gas demand is reasonably foreseeable because NWIW has a specific, active proposal to construct a fracked gas to methanol refinery at Port Westward, Oregon. As of today’s date, the “Projects” page of NWIW’s website explains that NWIW is “investing nearly \$4 billion in the construction of facilities at the Port of Kalama in Washington State and Port Westward in Oregon State” and that “NWIW is working closely with the Port of St. Helens in Oregon to develop plans for a facility at the Port Westward Industrial Park.” NWIW also has a detailed lease option agreement to allow construction and operation of the proposed methanol refinery at Port Westward.<sup>104</sup> And earlier this year, NWIW reaffirmed its interest in developing the proposed methanol refinery at Port Westward by negotiating an extension of its exclusive lease option until February 2020.<sup>105</sup>

The parameters of NWIW’s proposal at Port Westward are sufficiently defined to allow the inclusion of the Port Westward methanol refinery’s fracked gas demand in the cumulative impacts analysis for the Kalama methanol proposal. As NWIW president Vee Godley explained to Port of St. Helens Executive Director Doug Hayes on March 17, 2018:

<sup>102</sup> *Quinault Indian Nation v. Hoquiam*, SHB No. 13-012c, Order on Summary Judgment, p.18 (Dec. 9, 2013)

<sup>103</sup> Personal communication between Clay Riding, Vice President of Energy Resources for NWIW, and Jasmine Zimmer-Stucky, Senior Organizer for Riverkeeper (May 25, 2018) (further documentation available upon request).

<sup>104</sup> *Lease Option Agreement between NWIW and Port of St. Helens*, pp.6–7 (February 12, 2014) (available upon request).

<sup>105</sup> See [Port of St. Helens Resolution 2018-3](#) (February 14, 2018).

“NW[IW] is in the process of developing a world scale state of the art methanol manufacturing facility at your Port Westward location producing 10,000 Tonnes per day of methanol for the dedicated use in the fine chemicals materials industries. To manufacture methanol, we have various utility and feedstock requirements including a requirement for approximately 210 megawatts of steady state power.”<sup>106</sup>

The amount of methanol, and the electricity demand, referenced in Mr. Godley’s letter are identical to the Kalama refinery proposal, so the fracked gas demand from both refineries should be similar if not identical. Additionally, correspondence from the Port of St. Helens to Columbia County described the exact location of the planned refinery and contained NWIW’s representations about some details of the Port Westward and Kalama proposals.<sup>107</sup> Even though the Port Westward methanol refinery is neither fully permitted nor absolutely certain to be constructed, the availability of specific information and NWIW’s prolonged interest make the Port Westward methanol refinery a “reasonably foreseeable” proposal for NEPA purposes that must be addressed in the cumulative impacts analysis for NWIW’s Kalama methanol refinery.

## VII. NWIW’s proposed mitigation is misleading, incomplete, and violates SEPA.

The DSEIS impermissibly conflates the requirement to consider a range of alternatives with the requirement to consider mitigation measures. Alternatives analysis and mitigation requirements are two distinct concepts and requirements under both SEPA and its federal analog, the National Environmental Policy Act (NEPA). Both are necessary for compliance with the law. Yet the DSEIS conflates and muddles the requirements, using the ULE process “alternative”—and other “alternatives” such as shore power for berthed vessels—to pose as “mitigation.” Conflating these two core EIS requirements violates SEPA and misleads the public and decision makers about the actual nature of the GHG mitigation that NWIW is proposing.

An EIS, or a supplement thereto, must provide a reasonable set of alternatives (the preferred action and one or more alternatives) as well as separate discussion of mitigation measures.<sup>108</sup> The section of an EIS that includes analysis of mitigation measures is “not intended to duplicate the [alternatives] analysis in subsection (5) and *shall avoid doing so to the fullest extent possible.*”<sup>109</sup> Regarding mitigation, the EIS must “[c]learly indicate those mitigation measures (*not described in the previous section as part of the proposal or alternatives*), if any,

<sup>106</sup> *Letter from Godley (NWIW) to Hayes (Port of St. Helens)* (March 17, 2018) (available upon request).

<sup>107</sup> *Email and attachments from Paula Miranda (Port of St. Helens) to Henry Heimuller (Columbia County)*, (April 10, 2018) (available upon request).

<sup>108</sup> WAC 197-11-440(5) and (6)

<sup>109</sup> WAC 197-11-440(6)(b)(iii) (emphasis added).

that could be implemented or might be required . . . .”<sup>110</sup> Alternatives and mitigation are further defined in the regulations as separate and distinct concepts.<sup>111</sup> Based on Washington regulations alone, the DSEIS’ consideration of the ULE refining process as both an alternative production process and mitigation of the emissions from production violates SEPA.

Washington case law also demonstrates that the two concepts must be kept separate. In *Citizens for Safe and Legal Trails v. King County*, the court explained that while “alternatives” include analysis of alternatives for achieving the project purpose that may be less environmentally damaging than the preferred action, mitigation measures are to address environmental impacts after an alternative is chosen.<sup>112</sup> That is, any alternative may have environmental effects, and mitigation measures address the effects that will occur regardless of the choice of alternatives.<sup>113</sup>

Similarly, federal NEPA case law<sup>114</sup> addresses alternatives and mitigation analysis as two separate components, with mitigation analysis required in addition to discussion of alternatives. The Ninth Circuit recently stated that the discussion of mitigation measures in an EIS is intended to show how adverse environmental impacts that will occur after the construction of a project might be alleviated, regardless of whichever alternative is chosen.<sup>115</sup>

NWIW’s continued reliance on this approach in the DSEIS is directly contrary to the plain requirements of Washington regulation and case law. The ULE process and the use of shore power cannot serve as both project alternatives and “mitigation.” Doing so tests the logical definition of mitigation and merely incentivizes applicants like NWIW to manufacture alternatives that would have worse impacts than the preferred alternative and, rejecting them, call that “mitigation.” The DSEIS’s “mitigation” is just the choice between two manufacturing alternatives, both of which would create a huge increase in greenhouse gas pollutants from a new petrochemical plant.

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<sup>110</sup> WAC 197-11-440(6)(c)(iii) (emphasis added).

<sup>111</sup> See WAC 197-11-768 and 786.

<sup>112</sup> *Citizens for Safe and Legal Trails v. King County*, 118 Wn. App. 1048 (2003).

<sup>113</sup> See *Citizens for Safe and Legal Trails*, 118 Wn. App. at ¶ 9. See also *Victoria Tower Partnership v. City of Seattle*, 59 Wn. App. 592, 601 and 603 (1990) (holding that the primary function of an EIS is to first identify potential adverse impacts from an action to then enable the agency decision-maker to ascertain whether and to what extent to require mitigation or to deny the proposal).

<sup>114</sup> Washington courts will look to federal case law interpreting and applying National Environmental Policy Act (“NEPA”) for guidance in interpreting and applying SEPA. See, e.g., *ASARCO v. Air Quality Coal*, 92 Wn.2d 685, 709 (1979); *Kucera v. State Dep’t of Transp.*, 140 Wn.2d 200, 215-16 (2000); *Gebbers v. Okanogan PUD No. 1*, 144 Wn.App. 371 (2008).

<sup>115</sup> *Protect Our Communities Foundation v. Jewell*, 825 F.3d 571, 582 (9th Cir. 2016).

20 Besides being incomplete and misleading, NWIW’s newly-disclosed “100 percent” mitigation proposal is completely devoid of substance or enforceability. SEPA guidance requires NWIW to “clearly identify the mitigation measures” NWIW is proposing and describe whether those measures as are mandatory or potential.<sup>116</sup> And Ecology recently reiterated its preference for GHG emission mitigation measures that are real, specific, identifiable, quantifiable, verifiable, and permanent.<sup>117</sup> NWIW’s vague offer to mitigate a portion of its GHG emissions by paying for unknown, unspecified carbon credits from undisclosed carbon markets, banks, or funds does not meet any of these requirements. Vaguely promising partial “voluntary” mitigation, but failing to provide any details about that mitigation or its impacts, does not satisfy Ecology’s SEPA guidance regarding mitigation or the “hard look” requirement.

21 Most of NWIW’s sizeable carbon footprint would come from GHG pollution occurring outside of Washington’s borders. In response, NWIW recently promised to mitigate “100 percent of its GHG emissions”—but only those that occur inside Washington.<sup>118</sup> This makes little practical sense and will not provide meaningful offsets to mitigate the impacts of the project. This further ignores the fact that NWIW’s upstream and downstream GHG emissions will affect Washington’s climate, natural resources, and communities in exactly the same way as NWIW’s emissions that occur inside of Washington.

### VIII. NWIW’s proposal would add to the plastic pollution choking our oceans.

Plastic pollution, especially in the world’s oceans, is a long-acknowledged problem and the focus of increasing global concern. A recent study concluded that, in 2010 alone, between 4.8 and 12.7 million metric tons of land-based plastic garbage found its way into our oceans.<sup>119</sup> And the “quantity of plastic waste available to enter the ocean from land is predicted to increase by an order of magnitude by 2025.”<sup>120</sup>

22 If, as NWIW intends, its methanol would be made into plastic products, the SEIS should explain the amount and likely fate of those plastic products at the end of their useful life and the consequent impacts on the human environment. First, the SEIS should explain how much plastic would be generated from NWIW’s methanol over the project’s lifetime. The EIS should also explain how methanol-based plastic waste makes its way into the environment and, specifically,

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<sup>116</sup> Washington State Department of Ecology, *Publication No. # 98-114: State Environmental Policy Act Handbook*, p. 57 (2003).

<sup>117</sup> Exhibit 4, p. 2.

<sup>118</sup> DSEIS, p. 3-31.

<sup>119</sup> Jambeck, *et al.*, *Plastic waste inputs from land into the ocean*, 347 *Science* 769–771 (2015).

<sup>120</sup> *Id.*

the world's oceans. After being used, what percentage of plastics is recycled, put into landfills, burned, or reach the ocean?

22 To the extent possible, the SEIS should estimate how much of the plastic derived from NWIW's methanol would ultimately enter the ocean, based on the total volume of plastic produced over the project's lifetime, the likely destinations and uses of such plastic products, and the rate at which such plastics enter the world's oceans. Data presented in the article in the journal *Science*, "Plastic waste inputs from land into the ocean,"<sup>121</sup> may assist in making such calculations.

23 The SEIS should also examine the cumulative impact of how the growth of North American petrochemical facilities, like NWIW, affects the quantity of plastic trash entering our oceans. There is a direct link from cheap and plentiful North American shale gas to expanded plastics production, and from there to increased marine plastic pollution.<sup>122</sup> Even if the direct impact of NWIW's contribution to marine plastics pollution difficult to describe, NWIW is part of a continent-wide increase in the manufacture of plastics precursors driven by a glut of cheap shale gas. This industry growth will increase plastics production by 40 percent,<sup>123</sup> with corresponding and measurable increases in marine plastics pollution. The SEIS should therefore at least discuss the cumulative impact of marine plastics pollution from NWIW and similar facilities that are currently proposed or recently activated in North America.

#### **IX. The Port, NWIW, and Life Cycle Associates' conflicts of interest undermine the DSEIS' conclusions.**

The entities responsible for producing the DSEIS—the Port, NWIW, and Life Cycle Associates—each have significant financial incentives to produce a report showing the lowest possible climate impact. The political and regulatory realities surrounding this proposal are clear; Washington's leaders and public demand real action to address the worsening impacts of climate change. Admitting that this project would result in a massive net addition of greenhouse gas (GHG) pollution into our atmosphere would severely jeopardize the proposal's ability to obtain key permits and millions of dollars in public subsidies.

The financial incentives are clear. NWIW hopes to reap massive profits by arbitraging cheap North American fracked gas, exported in the form of methanol. According to NWIW's

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<sup>121</sup> *Id.*

<sup>122</sup> The Guardian, [\\$180bn investment in plastic factories feeds global packaging binge](#) (December 26, 2017).

<sup>123</sup> *Id.*

2013 projections, the project would generate \$150 million of profit each year.<sup>124</sup> The Port is guaranteed at least \$1.8 million in cash each year based on methanol wharfage alone, and this amount does not include rent or dockage fees also guaranteed to the Port.<sup>125</sup> Finally, Life Cycle Associates is substantially more likely to obtain similar lucrative contracts from project developers in the future if it under-estimates NWIW's climate impacts. Indeed, Life Cycle Associates' highly questionable analysis of the upstream methane emissions from the Tacoma LNG facility<sup>126</sup> likely enticed NWIW to retain the firm. Handing SEPA review over to these three entities is the regulatory equivalent of appointing the proverbial fox to guard the henhouse.

Unfortunately, but unsurprisingly, the financial interests of the project proponents and their consultant resulted in a self-serving and inaccurate assessment of the proposal's climate impacts. This bias permeates the entire DSEIS, but is highly visible when, for example, the DSEIS ignores the best available science about upstream methane leakage rates or switches between using the 20- and 100-year GWP for methane based on which portrays the proposal more favorably.

24 This conflict of interests was completely foreseeable and could have been avoided had the Washington Department of Ecology (Ecology) not abdicated its authority<sup>127</sup> to perform the SEPA analysis (or had the Washington Energy Facility Site Evaluation Counsel exercised its jurisdiction over this massive fossil fuel export facility). Despite these missteps, if the project proponents insist on carrying forward their flawed and self-serving analysis into a Final SEIS, Ecology should to prepare its own SEIS<sup>128</sup> to objectively describe the proposal's GHG emissions prior to deciding whether, and under what conditions, to approve the Shorelines Conditional Use Permit.

## CONCLUSION

Please re-examine the DSEIS' misguided conclusion that the world's largest fracked gas-to-methanol refinery would somehow benefit our climate and have no significant adverse impacts on the Columbia River estuary or public health. NWIW's proposal—which, at its core, is no different than previously rejected coal, crude oil, and LNG export schemes on the

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<sup>124</sup> Exhibit 8. Pan-Pacific Energy Corp, *Port of Kalama Methanol Project Business Plan*, p.28 (Dec. 2013).

<sup>125</sup> See *Dock Usage Agreement between the Port of Kalama and NWIW Kalama, LLC*, §§ 1.10, 1.11, 4.1, and 4.2 (April 9, 2014).

<sup>126</sup> See Exhibit 3; see also Exhibit 4.

<sup>127</sup> WAC 197-11-938(9); see also *Letter from Vee Godley (NWIW) to Sally Toteff (Ecology)*, p. 1 (Aug. 25, 2015) (“Ecology could have taken on the SEPA lead agency duties for the Kalama proposal under WAC 197-11-938(9) given that the storage tanks’ capacity exceeded 1,000,000 gallons”) (available on request).

<sup>128</sup> As contemplated and authorized by WAC 197-11-600(3)(b) & (c).

Columbia—does not embody the “global transition to a carbon-free future”<sup>129</sup> that Washington State demands and deserves.

Sincerely,



Miles Johnson, Senior Attorney for Columbia Riverkeeper

*Submitted on behalf of:*

*Columbia Riverkeeper  
Sierra Club  
Center for Biological Diversity  
Stand.earth  
Oregon Physicians for Social Responsibility  
Food and Water Watch  
Washington Physicians for Social Responsibility  
350 PDX  
Rogue Climate  
350 Seattle  
350 Tacoma  
350 Eastside  
Bark  
Green Energy Institute  
Center for Sustainable Economy  
Cascadia Wildlands*

Exhibits:

- Exhibit 1: Alvarez, *et al.*, *Assessment of methane emissions from the U.S. oil and gas supply chain*, Science (2018).
- Exhibit 2: Sierra Club, *Fracked Gas: Nothing “Natural” About It* (2018).
- Exhibit 3: Washington Attorney General, *Comment to PSCAA on DSEIS for PSE LNG Project* (Nov. 21, 2018).

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<sup>129</sup> Governor Jay Inslee (quoted in Columbia Basin Bulletin, *Federal Climate Report Suggests More Warm Years Such As 2015 Will Be A Reality For Columbia Basin* (November 30, 2018)).

- Exhibit 4: Washington Department of Ecology, *Comment to PSCAA on DSEIS for PSE LNG Project* (Nov. 21, 2018).
- Exhibit 5: Qun *et al.*, *A comparison between coal-to-olefins and oil-based ethylene in China: An economic and environmental prospective*, 165 *Journal of Cleaner Production* 1351–1360, 1356 (2017).
- Exhibit 6: NWIGU, *Comments on Puget Sound Energy’s 2017 Final IRPs* (February 22, 2018).
- Exhibit 7: Columbia Riverkeeper, *Letter to Army Corps of Engineers Regarding Cumulative Impacts of the Kalama Methanol Refinery* (August 9, 2018).
- Exhibit 8: Pan-Pacific Energy Corp, *Port of Kalama Methanol Project Business Plan* (Dec. 2013).

cc’d via email:

- Elaine Placido, Director, Cowlitz County Building and Planning Department
- Taylor Aalvik, Natural Resources Director, Cowlitz Indian Tribe
- Julie Carter, Policy Analyst, Columbia River Inter-Tribal Fish Commission
- Carl Merkle, Confederated Tribes of the Umatilla Indian Reservation
- Maia Bellon, Director, Washington Department of Ecology
- Perry Lund, Washington Department of Ecology, Shorelines Division
- Reed Schuler, Senior Policy Advisor to Governor Inslee, Climate & Sustainability

CLIMATE WRITERS  
87426 Halderson Rd., Eugene, OR 97402

December 12, 2018

To Whom It May Concern:

We're writing in opposition to the Northwest Innovation Works proposed fracked-to-gas methanol refinery in Kalama.

The Draft Supplemental EIS for this project is seriously flawed. It does not 1) adequately define the word "significant"; does not assess whether "avoidable" GHG emissions can, in fact, be avoided; 3) does not assess GHG emissions in the final use of methanol; and 4) does not assess whether the project will discourage the development of alternative, less-destructive energies and products.

This project is flawed and will contribute to climate change at exactly the time we need to cut back sharply on emissions.

Sincerely,

Diana Huntington

Emie O'Byrne  
Kate Jessett

M. Jessett  
M. O'Byrne  
Jocelyn Rosemeier

RECEIVED  
DEC 17 2018  
PORT OF KALAMA



December 27, 2018

Kalama Methanol Plant:

NW Innovation Works, LLC – Kalama (NWIW)

Mail: KMMEF EIS, C/o SEPA Responsible Official, Port of Kalama, 110 West Marine Drive, Kalama, WA 98625

Email: [seis@kalamamfgfacilitysepa.com](mailto:seis@kalamamfgfacilitysepa.com)

Website: <https://kalamamfgfacilitysepa.com>

To Whom It May Concern:

Thank you for this opportunity to comment on the proposed Kalama Methanol Plant.

FOGH (Friends of Grays Harbor) is a broad-based 100% volunteer tax-exempt 501(c)(3) citizens group made up of crabbers, fishers, oyster growers and caring citizens. The mission of FOGH is to foster and promote the economic, biological, and social uniqueness of Washington's estuaries and ocean coastal environments. The goal of FOGH is to protect the natural environment, human health and safety in Grays Harbor and vicinity through science, advocacy, law, activism and empowerment. We oppose locating any coal or other fossil fuel terminals in the State of Washington, and any expansion of such terminals elsewhere.

1 | Washington State is a leader in clean energy and should not be approving the transport and storing of so dangerous a fossil fuel. In addition, the increase in rail traffic creates a multitude of problems for communities along the rail routes.

We find the following to be significant adverse impacts and are concerned that they were inadequately addressed in the SEPA/NEPA review process.

2 | 1. The world's largest methanol refinery, proposed on the Columbia River in Southwest Washington, would use more fracked gas than all of the Pacific Northwest cities combined and need massive new fracked-gas pipeline expansions throughout the region.

3 | 2. The refinery would pollute as much as 1.2 million cars, poison the air with cancer causing toxins, and endanger our dwindling salmon and orca populations.

4 | 3. Fracked gas would be turned into methanol and shipped to China to make plastics, at a time when our oceans are filled with two massive plastic islands.

5 | 4. This methanol refinery would require fracked gas pipeline expansions, which would open the floodgates for fracked gas usage in the Pacific Northwest.

5. Increased air pollution burden on ambient air quality as a result of emissions of large quantities of toxic pollutants and associated human health impacts

6. Release of large quantities of greenhouse gases

7. Sea Level Rise associated with the increase in emissions of greenhouse gases

6 | 8. Odors and associated health impacts as a result of the Kalama Methanol Plant operational activities, accidental releases and upset conditions, spills and leaks, and odorize natural gas releases

Post Office Box 1512 Westport, Washington 98595-1512 Phone/Fax (360) 648-2254  
<http://fogh.org> [rd@fogh.org](mailto:rd@fogh.org) 501(c)(3) tax-deductible

- 7 | 9. Increase in noise, dust, air emissions and traffic during construction activities, plant operations and ship loading
10. Potential for extensive negative environmental impacts
- 8 | 11. Negative impacts on residential property and commercial businesses in proximity to the Kalama Methanol Plant
- 9 | 12. Negative impacts on individuals living and working in the vulnerable zones associated with the release of toxic chemicals and explosions
- 10 | 13. The refinery would consume a stunning amount of fracked natural gas—one-third as much gas as used by the entire state of Washington.
14. Steam plumes would be longer than Mt St Helens' height 1/4 of the time
- 11 | 15. Toxic air pollution with five times more diesel particulate
16. Three to six tankers per month will carry the refinery's petrochemical product down the Columbia River and across the bar at Astoria en route to China.
- 12 | 17. The risks of building on ground that has a moderate to high risk of liquefying in an earthquake
- 13 | 18. The feeder pipeline would require seizing private land, including an easement across a historic cemetery.
- 14 | 19. The refinery would use 5 million gallons of water per day
- 15 | 20. Methanol plant would not meet Governor Inslee's package to transition to 100 percent clean electricity by 2045, as well as several other proposals to clean up electricity, buildings and transportation and a mandate for utilities to eliminate all fossil fuels, such as coal and natural gas, from the state's electricity by 2045.
- 16 | 21. Ocean acidification will only be increased as we continue to use and abuse fossil fuels. Our marine resource economy provides sustainable economic value to both tribal and non-tribal communities. Treaty rights and our coastal communities cannot be ignored by inappropriate development.

Sincerely,

Arthur (R.D.) Grunbaum  
President



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<http://fogh.org> [rd@fogh.org](mailto:rd@fogh.org) 501(c)(3) tax-deductible



Ann Farr, SEPA Responsible Official  
Port of Kalama  
110 W. Marine Drive  
Kalama, WA 98625

Submitted via email: [SEIS@KalamaMfgFacilitySEPA.com](mailto:SEIS@KalamaMfgFacilitySEPA.com)

RE. Draft Supplemental Environmental Impact Statement for the Kalama WA Methanol Manufacturing and Export Project

Dear Ann Farr,

On behalf of Friends of the San Juans, thank you for your attention to these comments on the Draft Supplemental Environmental Impact Statement (draft SEIS) for the Kalama WA Methanol Manufacturing and Export Project (Project).

Friends of the San Juans works with diverse stakeholders, including citizens, tribal and governmental agencies, as well as with other non-profit organizations to protect and restore the Salish Sea for people and nature – since 1979. Friends of the San Juans represents approximately 2,000 members who live, work, and recreate in the Salish Sea. Friends of the San Juans works to protect and recover the 113 endangered species in the Salish Sea, with the most iconic being the Southern Resident Killer Whales. Any additional vessel traffic, and associated vessel noise and oil spill risk, along the Columbia River and outer coast could significantly impact the critically endangered Southern Resident Killer Whales.

The Project's draft SEIS:

- Underestimates the amount and potency of methane, lacks credible analyses on methane leakages caused by extracting and transporting gas, and downplays credible studies on methane leakage.
- Relies on outdated data, including a single study of methane leakage from a single fracking area in British Columbia. Experts say that study is suspect, and that Northwest Innovation Works probably will not buy fracked gas from this source for the 40-year lifetime of the project. The draft SEIS incorrectly assumes that this project will displace China's use of coal-based technology to make olefins (the company's stated end-use of methanol).

This Project undercuts Washington State's commitment to take meaningful and necessary action on climate change. This Project would emit over 1 million tons of CO<sub>2</sub> annually, accelerating climate change, sea-level rise, ocean acidification, and the collapse of the food web which the Southern Resident Killer Whales - and we all - rely upon.

Please require the draft SEIS to be revised to address these concerns and to fully account for the true impacts of this Project. Thank you for your attention to these comments. I look forward to your responses.

Sincerely,

Lovel Pratt  
Marine Protection Program Director



WASHINGTON  
PHYSICIANS  
FOR SOCIAL  
RESPONSIBILITY

December 28, 2018

To: Cowlitz County and Port of Kalama  
Ann Farr / SEPA Responsible Official  
110 W Marine Drive  
Kalama WA 98625

Via email: [SEIS@KalamaMFGFacilitySEPA.com](mailto:SEIS@KalamaMFGFacilitySEPA.com)

Subject: Comments on Draft Supplemental Environmental Impact Statement (DSEIS) for the proposed Kalama Manufacturing & Marine Export Facility

Guided by the values and expertise of medicine and public health, Oregon Physicians for Social Responsibility (OPSR) works to protect human life from the gravest threats to health and survival, including environmental pollution. Washington Physicians for Social Responsibility (WPSR) has been working for 40 years to create a healthy, peaceful, and sustainable world for both present and future generations. We submit these comments on behalf of more than 3,000 health professionals and public health advocates working to protect human health from the gravest threats to health and survival. Please also incorporate by reference the comments submitted by Miles Johnson of Columbia Riverkeeper on our behalf.

We are greatly concerned that the Draft Supplemental Environmental Impact Statement (DSEIS) for the above-named Kalama methanol manufacturing facility has not been adequately prepared using current scientific understanding of the climate impacts of methane. The life cycle analysis uses incorrect assumptions that are more appropriate for CO<sub>2</sub> emissions than methane, and appear to have been chosen to satisfy the interests of the proponents of the project.

1 The DSEIS erroneously estimates methane emissions over a hundred-year time span when the lifespan of this project is 40 years, and methane's climate forcing ability is greatest over shorter periods of time. Methane is 86 times as potent as CO<sub>2</sub> over a twenty-year timeframe. (Physicians for Social Responsibility, 2017, *Too Dirty, Too Dangerous. Why Health Professionals Reject Natural Gas*). Moreover, the analysis is out of date in view of updated information from the IPCC which indicates that we do not have 100 years to drastically reduce our fossil fuel use, but less than 12 years. (IPCC, 2018 Special Report 1.5, <https://www.ipcc.ch/sr15/>)

2 The DSEIS analysis has not adequately recognized the impacts of methane leakage from compressor stations along the routes of pipelines delivering gas to Washington and to the proposed methanol manufacturing facility at Kalama. Compressor stations along the route of gas pipelines pose significant risks in and of themselves. Fracked gas leaks through seals, valves and connections. Fracked gas is released through deliberate venting during routine operations and maintenance [Subramanian, R et al. (2015) *Environmental Science and Technology* 49:3252-61] and from 'blowdowns' used to control pressures and empty systems. These are significant sources of methane releases to the atmosphere. Blowdowns typically release 90 to 180 foot plumes of gas and can last as long as 3 hours. These intermittent releases of fracked gas are at much higher concentrations and their impacts are not reflected in annual averaged emissions data. Furthermore, compressor stations are known to be methane super-emitters, where intended releases are a dominant source of methane emissions even excluding blowdowns. [Johnson, DR, Covington, AN, Clark, NN (2015) *Environmental Science and Technology* 49:8132-8138] Self-reports of emissions have been found to underestimate actual emissions by 3.8 times. Compressor stations have higher leaks of methane gas than well pads. [Lavoie, TN et al. (2015) *Environmental Science and Technology* 49:7904-7913] Thus, compressor stations along pipelines are major sources of greenhouse gas emissions, exacerbating climate change and related significant, adverse impacts on public health and safety.

3 The proposition that this project will cause a reduction in GHG emissions when compared with the "No Action Alternative" is not supported by evidence. According to Columbia Riverkeeper and Professor Paul Thiers (WSU Vancouver), the price of oil impacts the use of methanol for fuel. If the price of oil is low, there is little chance the product produced by this methanol plant will be used to offset the burning of coal in China. The DSEIS did not include analysis of the cost of oil in the analysis, resulting in a gross underestimation of GHG emissions resulting from this proposed project.

We do not live in isolation. We share this planet, this airshed, the Columbia River ecosystem and its benefits. We share responsibility for protection of these life-supporting systems. We are responsible for our actions to a much larger community. If we accept this massive fracked gas facility, we accept responsibility for its adverse impacts on the life and health of all communities - from extreme fracking wells to trucks, roads and toxic waste ponds, through leaking pipelines in Washington state and in Kalama, to the proposed refinery and storage facility, through our precious Columbia River, the Pacific ocean to Chinese plants and vehicles where methanol will be combusted as fuel and/or converted to feedstock for olefins. The construction and operation

4 of the Kalama methanol plant will increase demand for fracked gas, increase the cost of fracked gas for domestic use, increase fracking with well-documented adverse impacts on health, water, and air, and will further drive catastrophic climate disruption. This will be our legacy. This we cannot and will not accept.

5 We are in a climate emergency. (IPCC, 2018 Special Report 1.5, <https://www.ipcc.ch/sr15/>) We cannot afford as a state, a nation, or a world to continue to increase GHG emissions. We must use our resources to develop truly green and sustainable energy that would not sacrifice our air, water, climate and future. We must implement a just transition with immediate reductions in emissions, not with hypothetical offsets. Offsets allow the increases to occur. Offsets cannot keep pace with the proposed increases in emissions, even with the low estimates presented in the DSEIS. The contention that this project would be carbon neutral because of its proposed mitigation and offsets is false. Increasing the extraction, transportation, combustion and use of methane will have adverse impacts on climate, health and human survival that cannot be mitigated.

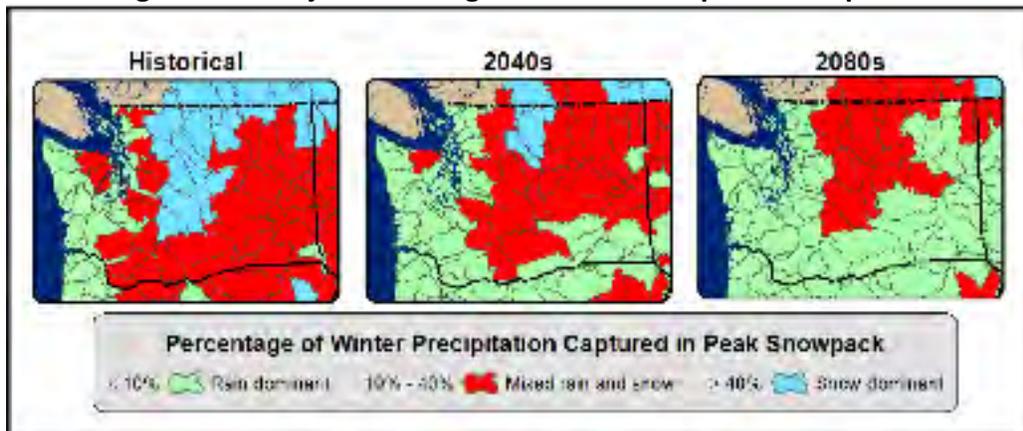
6 Please consider the following Information from Cowlitz County's MBT Health Impact Assessment (November 29, 2018) that demonstrates the risks of increased GHG emissions, climate change, related air pollution and environmental injustice to Cowlitz County residents:

#### **Impacts on Health of from Climate Change Due to Project GHGs: Appendix D**

P. D-1: The effects of climate change vary by location. In Washington State, some changes already observed include an average temperature increase of 1.30 F and a lengthening of the frost free season by 35 days (+/- 6 days) between 1895 to 2011, as well as more frequent nighttime heat waves.[7] Overall, glaciers and springtime snowpack has declined, with a 49% decline in glaciated area on Mt. Adams between 1904 and 2006.[7]

P. D-4: Projected future changes in Washington's climate include further decline in snowpack and a shift away from snow-dominant and mixed rain-snow dominant watersheds toward rain-dominant watersheds (Figure D-6). Changes in Washington's climate in the near-term and mid-term future will likely increase hazards to human health. Without preventive and protective measures, this will worsen a variety of health outcomes at the population level. Climate change is also expected to increase health disparities by disproportionately impacting those who already bear a larger burden of risk factors and illness, such as people with lower income, people with existing chronic disease, the socially isolated, those with a disability, immigrant and refugee populations who may have less English language fluency, and some communities of color.[7, 9]

P. D-4: Figure D-6. Projected Change in Winter Precipitation Captured in Peak Snowpack [7]



Changing hydrology with warming: Depending on elevation, colder basins will experience increases in rain during winter instead of snow; projected to experience increases in winter flows and decreases in spring flows as a result of warming.

P. D-5: Hazards to health that are climate-sensitive and likely to grow as the effects of global warming intensify include:

**Heat-related Illnesses.** Currently in Washington State, between 25 to 113 people are hospitalized for heat illnesses every year, about 50% of whom are age 65 and older.[10] Risk for heat-related illness, hospitalization, and death increases during extreme heat events,[11, 12] although hot weather safety measures can protect people from exposure.[10] Bethel and colleagues have predicted that more frequent heat waves in the northwest will increase the burden of heat-related illness such as heat stroke, and exacerbate chronic illness for people with cardiovascular, respiratory, and kidney disease. Other populations at risk include outdoor laborers, children, and people ages 65 and older.[13] Figure D-7 shows extremely hot days in Washington. Cowlitz County experienced more extremely hot days in 2016 than other parts of the state.[14]

**Respiratory and Other Conditions Exacerbated by Pollen and Wildfire Smoke.** Researchers expect the pollination season to lengthen and the production of allergy-causing proteins to increase.[9, 15] A longer and more intense allergy season would increase the burden of allergy and asthma symptoms. Drier, warmer conditions are expected to increase the number of acres burned by wildfire in Washington,[7] increasing the potential for exposure to wildfire smoke[13] and exacerbating heart and lung disease. Wildfire smoke events are associated with an increase in emergency room visits and hospitalizations for respiratory-related illness.[16, 17, 18, 19]

**Vector Borne and Zoonotic Diseases.** Diseases such as West Nile virus, Zika virus, Lyme disease, Hanta virus, and others transmitted by vectors (e.g., mosquitos, ticks, rodents) are influenced by climate's direct effects on habitat, the pathogen, the vector, the vertebrate reservoir host (e.g., birds and mammals), and their interactions with one another. Climate change is expected to

alter the distribution of vector species and may increase the extent of suitable habitat for some vectors, thus increasing risk of exposure and disease. For example, M. Hahn and colleagues predict more suitable habitat in southwest Washington counties for the tick *Ixodes* spp (Figure D-8).[20] The genus *Ixodes* spp includes *Ixodes pacificus*, which carries Lyme disease, is the more prevalent species in Washington. (SW WA counties more suitable habitat for tick *Ixodes*.)

P. D-6:

**Water-Borne and Food-Borne Disease.** Risks to water quality may grow as a result of increasing frequency of heavy precipitation events, flooding, and sea-level rise, as well as from drought and wildfire. Drinking water systems, including private wells, inundated with flood waters could affect water quality and increase risk of water borne illness or disrupt drinking water services. The risk of exposure to harmful toxins found in some types of algal blooms is also expected to increase. Harmful algal blooms in freshwater bodies pose risks to health if the water body is a source of drinking water. Toxic algal blooms can also affect health if people use the contaminated water for recreational activities like swimming. Marine biotoxins can contaminate shellfish and temporarily increase the risk of foodborne illness.[9]

P. D-7:

**Risks from Extreme Events.** Power outages and other impacts of storms, flooding, drought, and wildfire can interrupt provision or access to critical services, destroy property, and displace people. The mental health effects of these traumas can have long lasting effects.[9] More frequent, more extreme, and more overlapping events are anticipated across the United States and in the northwest.

**Mental Health Effects.** Changes in climate are expected to take an increasingly large toll on mental health and wellbeing as a result of both increasing acute and gradual effects of climate change. Some populations are more vulnerable to these effects than others, including children, the elderly, people with pre-existing mental illness, the economically disadvantaged, the homeless, first responders, and those whose sustenance and livelihood depend on the natural environment. The threat of climate change itself has been shown to have a negative impact on mental health.[9]

### **Cowlitz County's Vulnerability**

P. D-9:

“What is certain, if increasing global GHG emissions from human activities continues on a “business as usual path,” residents in Washington State and Cowlitz County will experience far greater harm than if the level of GHG emissions at the global level are dramatically reduced sufficient to arrest the increase in atmospheric GHG concentrations and limit global warming to under 2<sup>0</sup> C.”

P. 25 (par.2): Health data shows the people of Cowlitz County already experience rates of death and hospitalization for some diseases related to air pollution that are higher than the state average, especially lung and heart diseases.

P. 25 (par.3): Deaths from heart disease in Cowlitz County were about 10% higher than the state average. Many of the mortality rates from heart disease in the near-railway neighborhoods were also higher than the state average.

Deaths from combined chronic lower respiratory diseases were about 52% higher in Cowlitz County compared to Washington State as a whole.

P. 25:

When disease rates are higher than the state average in a community, especially when that community is experiencing social and economic conditions that contribute to these differences, it is considered a health disparity. If an additional risk is added, such as increased air pollution to a community that already has health disparities, it is considered **an environmental justice issue**. Cowlitz County and affected neighborhoods are more vulnerable to the types of health risks associated with increased air pollution than other parts of Washington state would be.

P. 28: When particulate matter levels spike, the highest increases in hospitalizations and deaths generally occur within two days.

P. 31:

Cowlitz County consistently ranks near the bottom of Washington counties in health indicators.

P. 35:

Cowlitz County ranked #31 of 39 counties in WA in health.

P. 35:

HIA cannot conclusively state that a simple increase in tax revenue would have positive effect on health outcomes.

Tables of mortality data for Cowlitz County and population characteristics on pages 57 and 59-62 of the HIA provide some baseline data for Cowlitz County compared with WA State.

P. 59 Table 3: Mortality rates per 100,000 population for selected cardiovascular conditions relate to air quality and noise exposures (2011 – 2015)

Statistically significantly higher rate of myocardial infarction (MI) in Kalama than the state rate

P. 62 Table 6:

Hospitalization rates per 100,000 population for selected conditions related to air quality and noise exposures (2011 – 2015)

Statistically significantly higher rate of myocardial infarction (MI) in Cowlitz County than the state rate

### Impacts on Health from Air Pollution: Appendix C.

P. C-11:

**Baseline Health of Cowlitz County** Baseline conditions in Cowlitz County and neighborhoods along the rail line assessed as part of this Health Impact Assessment were found to be experiencing health disparities. Health disparities are preventable differences in the burden of disease, injury, or opportunity to achieve optimal health experienced by socially disadvantaged groups. Examples of preventable differences in the burden of disease can be seen in the tables below. Some notable differences include:

- Some neighborhoods had more than double the rate of death from chronic lower respiratory diseases compared to the state average.
- Some neighborhoods in Cowlitz County had statistically significantly higher rates of death from heart disease.
- No neighborhood had a rate of disease or death that was statistically significantly lower than the state average for any condition assessed. Health disparities are experienced by socially disadvantaged groups. In Cowlitz County, these groups include a higher proportion of the population who have less than a high school degree, are living with a disability, are living in a mobile home, are unemployed, and/or are living in poverty. More information about the social and economic determinants of health for Cowlitz County and the neighborhoods near the rail line can be found in this Health Impact Assessment in Appendix E, *Population Characteristics*.

P. C-20:

The health effects related to air pollution would more likely be experienced in people with pre-existing conditions, such as heart and lung diseases, respiratory infections, cerebrovascular disease, and diabetes, as well as in infants, children, pregnant women, and people over 65 years of age. Health data from 2011 through 2015 indicates the people of Cowlitz County and some neighborhoods that would have air pollution impacts in the study area, already experience rates of death and hospitalization for some diseases related to air pollution, especially respiratory diseases that are higher than the state average. This indicates the population of Cowlitz County and affected neighborhoods would be at even greater risk of experiencing health effects than other parts of Washington.

Please take action to help prevent catastrophic climate disruption that will have harmful impacts to the health and safety of Cowlitz County residents. We urgently and respectfully request that the County and the Port re-examine the DSEIS' misguided conclusion, reject the flawed analysis for this project, and search for another occupant for the Port.

Thank you for the opportunity to comment.

Patrick O' Herron, MD  
President, Oregon Physicians for Social Responsibility

Kelly Campbell  
Executive Director, Oregon Physicians for Social Responsibility

Laura Skelton  
Executive Director, Washington Physicians for Social Responsibility

Regna Merritt  
Healthy Climate Program Director, Oregon Physicians for Social Responsibility

Theodora Tsongas, PhD, MS  
Environmental Health Working Group, Oregon Physicians for Social Responsibility

December 28, 2018

Governor Inslee, Washington Department of Ecology, and Port of Kalama:

1 | Building the world's largest fracked gas-to-methanol refinery in Kalama, Washington, would take us in the wrong direction. This project threatens our health and safety and the stability of our climate. Supporting this facility would undercut Washington's commitment to take meaningful and necessary action on climate change.

The draft Supplemental Environmental Impact Statement (SEIS) grossly misrepresents and underestimates the staggering climate pollution from Northwest Innovation Works' proposed petrochemical refinery.

2 | - The SEIS underestimates the amount and potency of methane, a powerful greenhouse gas, associated with the Kalama facility due to increased fracking. By ignoring or downplaying credible studies on methane leakage and relying on outdated numbers, the SEIS presents an inaccurate picture of climate pollution associated with the project.

3 | - The SEIS makes unrealistic assumptions about where the fracked gas will be coming from and how much methane will leak. The report relies on a single study of methane leakage from a single fracking area in British Columbia, even though that study is suspect and Northwest Innovation Works will probably not buy fracked gas from this source for the 40-year lifetime of the project.

4 | - Without compelling evidence, the SEIS assumes that this project will displace China's use of coal-based technology to make olefins (the company's stated end-use of methanol).

Please use the best science available to inform the SEIS and use your authority to halt this dirty and dangerous project.

Thank you for considering this request,

Martin	Donohoe	Physician (MD, FACP)
Paul	Engstrom	
Sharon	Holford	

Kay Pollack

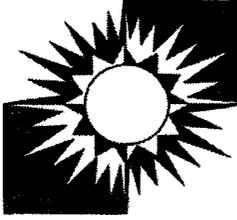
This facility would cause great environmental damage to the Pacific NW, and the gas it produces would contribute to pollution in China and the world. We cannot permit the continued degradation of our fragile environment and the health consequences of fossil fuels. We can do better if we plow resources into renewable energy instead of fossil fuels!

Randy	Harrison	
Monica	Gilman	RNC
Jay	Humphrey	
Ann	Henry	
Madison	Arnold-Scerbo	
Brent	Rocks	
Charlie	Graha	
Karen	Deora	
Sarah	Wiebenson	
Kelly	O'Hanley	MD, MPH
Marie	Wakefield	
Carrie	Phyliky Rimes	
Patsy	Sakamoto	SGI
Lois	White	
Erika	Kane	
Natalie	Van Leekwijck	
Anita	Runyan	Dr.
David and Beth	Finn	
Erin	Davis	
Carolyn	Main	
Pamela	Vasquez	M.Ed.
Robert	Scheelen	
Dolores	Scheelen	
Don	Dumond	
Sandra	Schomberg	
Scott	Gilbert	PhD; author of textbook on embryology
Donna	Snelling	
Patty	Bonney	
Christine	Witschi	
Rachel	Larson	
Kelly	McConnell	
Louise	Hoff	LMFT-ret.

Debra	Saude	
Dennis	Sweeney	MD
Robert B.	Kaplan	Ph.D.
Liza	Burney	
Caressa	Gullikson	Chiropractic Physician
Randall	Webb	
Joyce	Leggatt	
Nicolas	Petersen	EMT-B
Gary	McCuen	
Beatrice	Nissel	
William Steven	Herz	M.D.
Elizabeth	Sheppard	
Dean	Pryer	
Nancy	Crumpacker	MD
Eartha	Green	
Katherine	Camp	PA-C
David	Johnston	
Annie	McCuen	
Emily	Othus-Allred	
Jen	Enos	
Melissa	Owens	
Stephen	Couche	
Beth	Levin	
John	Gelwicks	
Maureen	O'Neal	
Pennie	Bond	RN
	Maron-	
Dani	Oliver	RN, MS
Tamara	Clarke	
Ron	Marson	
Ernesto	Gomez	
Elsbeth	Lnott	
Wendy	Wells	
Susanne	Primer	
Shannon	Dooley	
Mitch	Williams	
Beverly	Williams	
Lacey	Papadakis	
Sandra	Chapman	
Marvin	McCoy	
Wendy	Wagner	
Debbie	Gordon	
Janice	Karpenick	

Shantara	Grace	
Carol	Nieh	
Kenneth	Robbins	Community Pharmacist
Barbara	Poulsen	LMT
Pam	Dyer	
Frith	Barbat	
Jamie	Skinner	
Brendan	Lee	
Jesse	Gandy	
Dave	Ruud	MD
Janet	Roxburgh	
Wanda	Gledhill	
Melissa	Kink	BA
Regina	Szczesniak	MD
David	Chatfield	
Hank	Popiela	
Lauren	Thompson	
Alice	Olsen	
Charles	Totten	
Michael	Parent	MD
Kim	Davis	
Cathryn	Chudy	
Patti	Wold	
Laura	Pietila	
Diana	Norcross	
Rob	Harrison	
Nicole	Staudinger	
Holly	Easton	DO
Debra	Poscharscky	
Stephanie	Bateman	
Debby	Vajda	LCSW
Gary	McCuen	
Natalie	Van Leekwijck	
Brendan	Lee	
Alice	Mott	
M. Lee	Zucker	
Dean	Pryer	
Monica	Gilman	
Jay	Humphrey	
Regna	Merritt	PA (retired)
Thomas	Ward	MD
Ellen	Maddex	
Annie	McCuen	

Marshall	Goldberg	MD, MPH
Marilee	Dea	MSRN CPNP
Catherine	Ellison	
Kim	Davis	
Joshua	Kaminash	
James	Skinner	Airline pilot /concerned citizen
Dave	Ruud	MD
Cassady	Morris	
Nola	Silverman	
Molly	Osborne	MD PhD
Debbie	Hanson	
Nicole	Staudinger	
Ann	Kafoury	
George	Barker	Physician
Patricia	Newton	MD
Nancy	Crumpacker	MD
Michael	Heumann	MPH, MA
Jesse	Kaminash	



# The Oregon Conservancy Foundation

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## BEFORE THE PORT OF KALAMA AND COWLITZ COUNTY

### Testimony of Cathryn Chudy on behalf of the Oregon Conservancy Foundation

December 13, 2018

The Oregon Conservancy Foundation opposes the proposed fracked-gas-to methanol refinery in Kalama, Washington. In the past two months, the following reports have been released:

- **“The Intergovernmental Panel on Climate Change Special Report on Global Warming of 1.5°C”** (<http://www.ipcc.ch/report/sr15/>) - 10/8/18
- **“US Global Change Research Program’s Fourth National Climate Assessment”** (<https://nca2018.globalchange.gov/>) - 11/23/18.

Both of these reports focus on the catastrophic impact of accelerating climate change, providing a wake-up call by numerous scientists that we cannot ignore in order to protect our communities from the devastating impact of unrestrained fossil fuel consumption.

This proposed methanol refinery is an **unrestrained business as usual fossil fuel infrastructure development** that the Pacific Northwest and the state of Washington do not need. **What we do need is an immediate transition to a just and clean energy economy that leaves fossil fuels in the ground.**

1 The draft Supplemental Environmental Impact Statement (SEIS) for the proposed refinery has serious shortcomings that present a deceptive and misleading case for the refinery to be built. Instead of accurately and truthfully evaluating the full climate impacts of the project, the SEIS underestimates the climate-disrupting impacts of methane and the fracking process associated with it, as well as using speculative rather than reliable assumptions about the end uses of the methanol once it arrives at its Asian destinations.

**Not only is catastrophic climate change passed on to future generations – it is a problem we confront now!** In order to address this problem realistically, we need decision makers to see through deceptive arguments being used by fossil fuel proponents in their effort to persuade vulnerable communities to buy into its short term benefits (jobs) while securing profits for out of state companies using our planet’s atmosphere as a landfill for greenhouse gas emissions.

As the recently released climate reports make clear, increasing greenhouse gas emissions has deadly consequences for us all. You as decision makers hold the quality of life and the survival of our planet in your hands. We are stakeholders in your decision and we urge you to wisely say **“NO”** to this insane Kalama methanol refinery proposal.

We thank you for this opportunity to testify.



Ann Farr  
Port of Kalama  
110 W. Marine Drive  
Kalama, WA 98625

*Sent Via Email to: SEIS@KalamaMfgFacilitySEPA.com*

**Re: Comments on the Draft Supplemental Environmental Impact Statement for Northwest Innovation Works’ Methanol Refinery and Export Terminal**

Ms. Farr:

Thank you for providing a public comment period and process for input into the draft Supplemental Environmental Impact Statement (SEIS) for greenhouse gas emissions on Northwest Innovation Works’ Methanol Refinery and Export Terminal.

We appreciate the opportunity to provide comment and the work that the Port of Kalama and Cowlitz County have done thus far to evaluate the environmental impacts of this project. However, we are concerned that the analysis in the draft SEIS inaccurately and inadequately accounts for the GHG emissions associated with this proposal. Among our key concerns are that the draft SEIS relies on unenforceable assumptions regarding product displacement and gas supply, does not properly consider a range of scenarios, and does not use the best available science in accounting for the extent and warming potential of GHG emissions associated with the proposed methanol facility.

This draft SEIS does not constitute proper evaluation of this proposed facility. Unless a comprehensive review of the climate pollution, safety, and the environmental impacts of this facility is completed, this project should not move forward.

We request that the Port of Kalama and Cowlitz County address the following concerns in conducting a new analysis:

**Without compelling evidence, the SEIS makes the unenforceable assumption that the Kalama refinery will displace China’s use of coal to make methanol.** The assertion that the Kalama methanol facility would have a net GHG benefit relies almost entirely on the unenforceable assumption that the facility would lead to a corresponding, 1:1 reduction in coal-based methanol production in China. Not only is that assumption unenforceable, other analysis, such as that conducted by the Stockholm Environmental institute finds that the facility would be more likely to displace other olefin sources and production methods (e.g. naphtha- or ethane-based) with significantly lower GHG emissions, and is therefore just as likely to increase global GHG emissions as to decrease them.<sup>1</sup> NWIW’s assumed ability to “displace” coal-based methanol—without displacing other, less GHG-intense sources of olefins like naphtha—is premised on NWIW’s largely-undisclosed assumptions about world fossil fuel prices. Even assuming that NWIW would displace coal-based olefins under current fossil fuel prices, those prices are almost certain to change during the next 40 years in ways that NWIW can neither predict nor control. Considering the radical and often unforeseen fluctuations in the prices of coal, crude oil, gas, and methanol that have occurred in the past decade, any projection that relies on those prices remaining static over the next 40 years is arbitrary and inappropriate.

<sup>1</sup> Erickson, P. and Lazarus, M. 2018. Stockholm Environmental Institute. Discussion Brief: Towards a climate test for industry: Assessing a gas-based methanol plant.

1 | NWIW’s methanol refinery would likely be the first or second single largest cause of GHG pollution in Washington, increasing the state’s total carbon footprint by 1 to 2 percent, and, in the absence of this full or partial displacement of coal-based methanol sources, the Kalama methanol facility would result in a significant net increase in global GHG emissions. This draft SEIS systematically minimizes and understates the true climate costs of NWIW’s proposal. Any displacement theory without substantial evidence should be eliminated from future analysis of this proposal.

2 | **The climate mitigation proposed in the SEIS is not fully enforceable and is inadequate.** NWIW recently announced it would voluntarily mitigate all of the GHG pollution associated with the facility that occurs within Washington. Although there is some required mitigation associated with the facility, much of this commitment is voluntary, unenforceable, and therefore inappropriate as an assumption in evaluating the possible climate impacts of this project. Furthermore, a significant portion of climate pollution caused by NWIW’s proposal would occur outside Washington and is not included in this voluntary commitment. NWIW also provides little detail on how it will mitigate climate impacts associated with the proposal, providing no detail on how payments would translate into verifiable reductions in global GHG levels. In evaluating project scenarios, the draft SEIS should consider the possible and likely scenario in which these voluntary mitigation commitments are not fulfilled.

3 | **The assumption that all gas supplying this facility will come from Canada is inappropriate.** Without a guarantee, or even any supporting documentation, the draft SEIS asserts that “NWIW will be contracting and receiving Canadian natural gas, primarily from the Montney formation in British Columbia.” The assumption in the draft SEIS analysis that the gas for the facility will be sourced nearly exclusively from Canada for its expected 40-year lifetime is unjustified and unenforceable. This assumption is inadequate in accounting for the range of possible GHG emission scenarios associated with this facility resulting from varying leakage rates, extraction methods, and operational practices of different gas supplies. There is no credible reasoning offered to justify analysis that most of the fracked gas for this proposed facility will come from the Montney shale and, furthermore, no credible documentation that the associated levels of climate pollution would be as low as claimed.

4 | **The draft SEIS does not use the best available science for leakage rates.** In addition to inappropriately assuming constant and exclusive gas supply from Canada, the draft SEIS underestimates GHGs associated with the facility by assuming a methane leakage rate of just 0.32 percent and failing to incorporate the most recent, peer-reviewed science indicating that both B.C. and U.S. methane leakage rates are severely underreported.<sup>234</sup> The draft SEIS should include scenarios that reflect the likely and possible gas supply mix for the facility and account for the range of leakage rates and emissions associated with these different sources. In order to understand the environmental impact of this proposal, the analysis should use this best available science and use more conservative leakage rate estimates.

<sup>2</sup> Alvarez, et al. 2018. Assessment of methane emissions from the U.S. oil and gas supply chain. Science, eaar7204. <http://science.sciencemag.org/content/early/2018/06/20/science.eaar7204/tab-pdf>

<sup>3</sup> Atherton, et al. 2017. Mobile measurement of methane emissions from natural gas developments in northeastern British Columbia, Canada. Atmospheric Chemistry and Physics. <https://www.atmos-chem-phys.net/17/12405/2017/acp-17-12405-2017.pdf>

<sup>4</sup> Howarth et al., *Methane emissions and climatic warming risk from hydraulic fracturing and shale gas development: implications for policy*, Energy and Emission Control Technologies, p. 48 (2015) (estimating a 12% methane leakage rate); see also Caulton et al., *Toward a better understanding and quantification of methane emissions from shale gas development*, PNAS Early Edition, p. 4 (2014) (reporting leakage rates of 3% to 17% in the Marcellus shale region); see also Schneising et al., *Remote sensing of fugitive methane emissions from oil and gas production in North American tight geologic formations*, Earth’s Future (2014); see also Karion et al., *Methane emissions estimate from airborne measurements over a western United States natural gas field*, Geophysical Research Letters (2013) (estimating leakage rates of 6.2–11.7% in the Uinta basin).

**The draft SEIS does not accurately evaluate the global warming potential (GWP) of the proposal.** The draft SEIS uses a 100-year timescale for global warming potential (GWP) to analyze the proposed methanol facility. However, this timescale discounts the near-term warming impact of shorter-lived climate pollutants, such as methane, which is 84-87 times more powerful a warming agent than carbon dioxide over a 20-year period.<sup>5</sup> Because the emissions associated with the proposed facility are primarily methane and because the facility will only be operational for 40 years, a 20-year GWP timescale would more accurately account for the climate impact of the project. Furthermore, the most recent IPCC report affirms near-term emission reductions are the most critical factor in avoiding the most catastrophic impacts of climate change.<sup>6</sup> According to the Stockholm Environment Institute, using the 20-year timeframe to calculate the global warming impact of the facility's methane pollution nearly doubles the proposal's total climate pollution, from 2.6–4 million tons CO<sub>2</sub>e annually to 3.7–7 million tons CO<sub>2</sub>e annually. Analyzing methane at its 100-year potency minimizes the true impact of methane on our climate, makes the methanol proposal appear cleaner than business as usual, and does not prioritize near-term emissions reductions when scientific-consensus affirms we need them most.

In summary, we appreciate your consideration and commitment to evaluating the environmental impacts of this project. However, the current analysis represented in the draft SEIS is dangerously inadequate and misleading in accounting for the climate impacts of this proposed facility. Unless the environmental impacts of this proposal are fully evaluated, understood, and addressed, this project should not move forward.

Sincerely,  
Rebecca Ponzio  
*Climate and Fossil Fuel Program Director*  
*Washington Environmental Council*

<sup>5</sup> 4 US EPA. 2018. Understanding Global Warming Potentials. <https://www.epa.gov/ghgemissions/understanding-global-warming-potentials#Learn%20why>

<sup>6</sup> IPCC, 2018: Global warming of 1.5°C. An IPCC special report on the impacts of global warming of 1.5°C above pre-industrial levels and related global greenhouse gas emission pathways, in the context of strengthening the global response to the threat of climate change, sustainable development, and efforts to eradicate poverty [V. Masson-Delmotte, P. Zhai, H. O. Pörtner, D. Roberts, J. Skea, P.R. Shukla, A. Pirani, Y. Chen, S. Connors, M. Gomis, E. Lonnoy, J. B. R. Matthews, W. Moufouma-Okia, C. Péan, R. Pidcock, N. Reay, M. Tignor, T. Waterfield, X. Zhou (eds.)]. In Press.