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February 13, 2020

Rich Doenges
Director, Southwest Regional Office
Washington Department of Ecology
300 Desmond Drive SE
Lacey, WA 98503

Sent Via Email to: kalama.comments@ecy.wa.gov

Re: Pre-Scoping Comments on Ecology's Second Supplemental Environmental Impact Statement for the Kalama Methanol Refinery and Export Terminal.

Mr. Doenges:

The undersigned organizations (collectively, "commenters") have received the Washington Department of Ecology's (Ecology) [November 22, 2019, letter](#) to Cowlitz County determining to prepare a Second Supplemental Environmental Impact Statement (SSEIS) for the proposed Kalama methanol refinery and export terminal. Commenters thank Ecology for raising important questions about the County's analysis of the proposed refinery's impacts and for demonstrating the leadership to prepare the SSEIS when the County and Northwest Innovation Works (NWIW) refused to answer Ecology's questions.

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 NWIW's 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.

Commenters submit the following questions and comments for Ecology's consideration as Ecology prepares to scope and draft the SSEIS.

I. Public Process

Commenters and their members would like to know, as soon as reasonably possible, the anticipated schedule for public input on the SSEIS. Specifically, we would like to know whether and when Ecology will:

- produce a scoping report and/or solicit scoping comments;
- produce a draft SSEIS for public comment; and
- hold public hearings on the scope of the SSEIS and/or the draft SSEIS.

As you are aware, the issues implicated by NWIW's proposal are complex and of great importance to many people throughout Washington and beyond. To facilitate thoughtful public input, commenters request to know the format and timing of Ecology's process for drafting the SSEIS and taking public input.

II. Purpose and Need

The SSEIS should revisit the proposal's purpose and need. An EIS must "specify[] the purpose and need to which the proposal is responding,"¹ and the real purpose of NWIW's proposal is to "manufacture methanol for shipment to Asia."² The original and supplemental EISs improperly assert that reducing greenhouse gas (GHG) emissions is a purpose of NWIW's

¹ WAC 197-11-440(4).

² *Columbia Riverkeeper et al. v. Cowlitz County et al.*, SHB No. 17-010c, Order on Motions for Partial Summary Judgment, p.18, n.3 (September 15, 2017).

proposal. That assertion is misleading and assumes the answer to a central question in the SEPA analysis. The SSEIS should revise the purpose and need statement to eliminate NWIW's speculation and salesmanship about the proposal's climate impacts.

III. Scope of Review

The following section of this pre-scoping comment letter addresses key issues likely to arise in the SSEIS scoping process. This is by no means an exhaustive list of the issues that Ecology should consider when scoping the SSEIS and commenters reserve the right to raise additional scope issues in the future. Commenters hereby incorporate by reference all comments submitted by Columbia Riverkeeper and others on the scope of the SEPA analysis for the Kalama methanol refinery; such comments are already in Ecology's possession and are therefore not attached here.

a. Ecology's Lifecycle GHG Analysis Cannot Use NWIW's Displacement Theory.

Ecology's SSEIS should not rely on NWIW's displacement theory (*e.g.* that Chinese consumers will use methanol made in Kalama instead of more-GHG-intense methanol made elsewhere). As explained at length in previous comments by Columbia Riverkeeper and others,³ the indirect carbon reductions postulated by NWIW's displacement theory are speculative and not reasonably likely to materialize—even in the short term. And over the 40-year life span of the proposal, unforeseeable changes in policy, markets, and technology will almost certainly rearrange the assumptions underlying NWIW's theory. Accordingly, this theory should play no part in the SSEIS.

Recent events highlight some of the problematic assumptions underlying NWIW's displacement theory. The displacement theory is predicated on a lack of market manipulation or regulation and 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."⁴ While these assumptions have never been realistic, China's recent promise to purchase \$50 billion worth of U.S. energy exports,⁵ including methanol, demonstrates that non-market forces could play a substantial role in driving demand for NWIW's product. Similarly, China's recent decision to

³ Columbia Riverkeeper *et al.*, [Comments on the Draft Supplemental Environmental Impact Statement for Northwest Innovation Works' Methanol Refinery and Export Terminal](#), pp. 13–14 (December 27, 2018).

⁴ DSEIS Appx. A, p. 58.

⁵ Forbes, [Phase One Trade Deal: China pledges to buy ambitious \\$50 billion in US energy exports](#) (January 15, 2020).

ban the “*production and use*” of many single-use plastics⁶ could significantly affect demand in China’s methanol-to-olefins sector. Political decisions that are beyond NWIW or Ecology’s ability to foresee (much less control) will likely influence future consumption of methanol in China in ways that render the displacement theory unreliable and unhelpful.

Tellingly, NWIW and the County could not answer Ecology’s question about the basic assumption behind the displacement theory. Ecology asked for an “improved explanation” of why China’s expanding methanol market would not simply consume both NWIW’s cheap methanol *and* other available sources of methanol.⁷ Instead, the County’s November 4, 2019, response rehashed the SEIS’ inadequate assertion that NWIW’s methanol would always be cheaper than hypothetical future coal-based alternatives. But the displacement theory incorrectly assumes that future methanol consumption is somehow pre-determined, independent of supply, and un-influenced by price.⁸ In other words, NWIW’s plan to increase the amount of cheap methanol available in China could spur additional methanol consumption. The County’s response letter did not even attempt to address Ecology’s request for an “improved explanation” about this dynamic.

Ecology can reasonably predict the GHG emissions from fracking and gas transport. Ecology can reasonably predict the GHG emissions from NWIW’s refinery. Ecology can also reasonably predict the GHG emissions from burning NWIW’s methanol for fuel or making it into olefins. But Ecology cannot reasonably predict the political, technological, and market changes that will impact the worldwide consumption and production of methanol the over the next 40 years. Accordingly, the displacement theory has no place in the SSEIS.

b. The SSEIS Should Acknowledge that Fuel is a Reasonably Foreseeable End Use and Analyze the GHG Pollution from Burning NWIW’s Methanol.

The SSEIS should explain that NWIW’s methanol could foreseeably be burned for fuel in China. Despite frequent claims that NWIW’s methanol would only be used to make plastics, it is reasonable to foresee that some or all of NWIW’s methanol would be burned for fuel⁹ because:

⁶ CNN Business, [China has announced a new plan to crack down on most single-use plastics by 2025](#) (January 20, 2020) (emphasis added).

⁷ See Ecology, *Letter to Cowlitz County Requesting Additional Information*, Question 2(1), p. 3 (October 9, 2019).

⁸ Columbia Riverkeeper *et al.*, [Comments on the Draft Supplemental Environmental Impact Statement for Northwest Innovation Works’ Methanol Refinery and Export Terminal](#), pp. 13–14 (December 27, 2018).

⁹ See generally Sightline Institute, [How Northwest Methanol is Likely Intended for China’s Gas Tanks](#) (2018).

- **NWIW’s leaders says the methanol is for fuel.** In an interview, Mary Hemmingsen, Executive Vice President and CFO of NWIW, agreed that “NW Innovation Works is committed to meeting a global need for clean-burning liquid fuels” and praised methanol’s suitability for “fuel and feedstock: in marine and ground transport, power, heat and petrochemical applications.”¹⁰ Also, Wu Lebin, president of the Chinese Academy of Sciences Holding Company which controls NWIW, told China Daily that China’s interest in Kalama and other U.S. fracked-gas-to-methanol refineries is driven by a desire to “commercially extract methanol for use as an environmentally sustainable motor fuel”¹¹ Mr. Wu Lebin also told Reuters that the Kalama methanol refinery “is part of a plan . . . to build a supply chain for methanol, potentially China’s next alternative industrial and transport fuel.”¹²
- **NWIW told potential investors it would sell methanol for fuel.**¹³ NWIW created¹⁴ a 26-page PowerPoint-style presentation¹⁵ to attract investment in the Kalama methanol proposal by asserting and implying that NWIW’s core business model is producing methanol for the Chinese fuel market. The presentation styles NWIW as “a next generation energy major”¹⁶ and claims its methanol would be used as “fuels for industries and transportation,”¹⁷ as well as petrochemical feedstock. The bulk of the presentation discusses burning methanol for fuel in China and focuses on how NWIW would capitalize on China’s expanding methanol-for-fuel markets.¹⁸ The presentation first describes methanol’s suitability as an energy source, largely in the context of transportation fuel,

¹⁰ Gastech Insights, [Liquid-rich gas production: An imperative opportunity for Canada: Interview with: Mary Hemmingsen, EVP and CFO, Northwest Innovation Works](#) (February 13, 2018).

¹¹ China Daily, [US shale methanol soon en route to China](#) (2017).

¹² Reuters, [China’s CAS plans gas-to-methanol plant on U.S. West Coast](#) (2017).

¹³ The inconsistencies between NWIW’s statements to potential investors and regulators led Columbia Riverkeeper to send a [letter to the U.S. Securities and Exchange Commission on February 11, 2020](#), requesting an investigation. See OPB, [Columbia Riverkeeper Wants SEC To Investigate Kalama Methanol Project](#) (February 12, 2020).

¹⁴ NWIW’s Chief Commercial Officer and general counsel Kent Caputo described the Investment Overview presentation as “accurate and authorized for use.” See Crosscut, [A small Washington town may build the world’s largest methanol plant, but do locals want it?](#) (November 13, 2019).

¹⁵ See NWIW, [Investment Overview presentation](#) (2018).

¹⁶ *Id.* at 22.

¹⁷ *Id.* at 4, 7.

¹⁸ *Id.* at 12–24.

electrical generation, and heating.¹⁹ The presentation then highlights the projected growth in Chinese demand for methanol as a fuel.²⁰ Finally, the presentation asserts that “Energy Applications will Drive Methanol Market Growth” and contains a graph projecting that most growth in the Chinese methanol market over the next 15 years will be driven by fuel consumption.

- **Methanol is an increasingly common fuel in China.** The world’s “widest adoption of methanol-gasoline blending has occurred in China,” and methanol accounts for more than five percent of China’s national gasoline consumption.²¹

As Columbia Riverkeeper and Sierra Club have explained separately,²² the revised dock use agreement between NWIW and the Port of Kalama cannot replace adequate SEPA review because the parties to that agreement lack the resources, and the incentive, to enforce it. Accordingly, Ecology’s SSEIS should acknowledge that some or all of NWIW’s methanol is reasonably likely to be burned as fuel in China.

The SSEIS should analyze and disclose the GHG emissions associated with burning NWIW’s methanol for fuel. Burning NWIW’s methanol in a gasoline blend would emit roughly 5 million tons of climate pollution every year for the next forty years.²³ While this calculation is a starting point, the SSEIS should calculate and discuss the GHG emissions for a range of potential methanol fuel applications, including transportation, heating, and industrial boilers. Further, Ecology should reject unsupported assertions that NWIW’s methanol would merely displace coal-derived methanol in China’s gas tanks and boilers. In the context of fuel use, the displacement theory is even less credible because it ignores: the well-documented link between lower transportation fuel prices and higher fuel consumption; China’s projected growth in fuel demand; and the likelihood that access to cheap fossil fuels will delay China’s transition to electric vehicles. Ecology should calculate and thoroughly discuss the climate pollution that would be emitted by burning NWIW’s methanol for fuel.

c. Methane Emissions from Fracking and Gas Transport

The SSEIS should use a reasonable estimate of the methane and other emissions that would be released as a consequence of fracking, gathering, and transporting the gas to supply

¹⁹ *Id.* at 12–13.

²⁰ *Id.* at 16–18.

²¹ Oil and Gas Journal, [Methanol proves low-cost, sustainable option for gasoline blending](#) (March 2, 2015).

²² Columbia Riverkeeper and Sierra Club, [Letter to Ecology re Northwest Innovation Works’ new dock use agreement will not prevent methanol made in Kalama from being burned as fuel](#) (July 30, 2019).

²³ SEIS, Appx. C, p. 50.

NWIW's refinery. Specifically, the recent study produced by Alvarez, *et al.*,²⁴ surveys the best available science on methane leakage in fracking and gas transport and provides a reasonable, though conservative, estimate of upstream emissions. Furthermore, the Northwest Power and Conservation Council recently accepted the Alvarez study's conclusions as a basis for calculating upstream GHG emissions for gas-fired power plants in the 2021 Northwest Power Plan.²⁵ NWIW's SEIS, by contrast, treated the Alvarez study as an outlier and cherry-picked a leakage rate of 0.32 percent²⁶ which cannot be reconciled with the wide body of peer reviewed literature regarding emissions from gas production.²⁷ The SSEIS should use a reputable, supportable methane leakage rate when calculating NWIW's upstream emissions.

d. New Regional Gas Pipeline

The SSEIS should discuss whether NWIW's gas demands would induce the construction of new regional gas infrastructure, including new pipelines into the Pacific Northwest or new gas storage facilities or compressor stations in the region. Regulatory filings by regional gas utilities continue to highlight that, while "the regional gas transportation system is adequate to meet current demand," the pipeline system will "experience increasing stress"—and be expanded—if gas demand increases significantly because of new uses like "liquefied natural gas (LNG) exports" or "methanol plants . . ."²⁸ Specifically, Puget Sound Energy concluded that demand from "large new industrial gas users may have more control over timing and location of future infrastructure expansions than existing users, including utilities." In light of such warnings, the SSEIS should analyze whether NWIW's demand would reach or exceed the supply capacity of the Pacific Northwest's gas infrastructure, triggering new regional pipeline construction.

Even if the Kalama refinery's gas demand would not require a new regional pipeline, the cumulative impact of NWIW's proposed gas needs in the region *would* require such infrastructure. SEPA mandates the consideration of cumulative effects.²⁹ Together, the demand

²⁴ Alvarez, *et al.*, [Assessment of methane emissions from the U.S. oil and gas supply chain](#), Science (2018) (estimating a leakage rate of 2.1 percent).

²⁵ See Northwest Power and Conservation Council, [Methane Emissions and the 2021 Power Plan](#), p. 1 (December, 2019).

²⁶ DSEIS, p. 3-14; DSEIS Appx. A, pp. 117–18.

²⁷ See 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 Sierra Club, [Fracked Gas: Nothing "Natural" About It](#) (2018) (reviewing literature and estimating leakage rate of 3 percent).

²⁸ Puget Sound Energy, [2017 Integrated Resource Plan](#), p. 3-14 (2017).

²⁹ 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 when making a threshold determination).

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. According to NWIW and Williams, the Williams Pipeline at Chehalis can deliver about 500,000 dekatherms of gas daily to southwest Washington and Oregon. Assuming that NWIW’s Kalama and Port Westward refineries would both consume 270,000 dekatherms each day, these two refineries would consume more gas than the Williams Pipeline (the main gas supply line into the region) can deliver, 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—admitted it.³⁰ Accordingly, a new regional pipeline is a reasonably foreseeable cumulative impact of NWIW’s methanol refinery.

Because NWIW’s gas demands—directly or cumulatively—would drive expansions in regional pipeline infrastructure, the SSEIS should identify those potential or likely expansions and analyze the impacts of pipeline construction and operation. Pipelines transporting natural gas pose significant risks to human health and safety. Between 1986 and 2016, the U.S. Department of Transportation’s Pipeline and Hazardous Materials Safety Administration recorded 858 serious pipeline incidents, including 347 fatalities from pipeline accidents. Please study and disclose the health and safety impacts of induced pipeline construction and operation. The SSEIS should also study the potential for new pipeline infrastructure to induce further growth in regional gas consumption and associated increases in greenhouse gas emissions.

e. Marine Plastic Pollution

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.³¹ And the “quantity of plastic waste available to enter the ocean from land is predicted to increase by an order of magnitude by 2025.”³²

If NWIW’s methanol would be made into plastic products, the SSEIS 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 SSEIS should explain how much plastic could be generated from NWIW’s methanol over the project’s lifetime. The SSEIS should also explain how methanol-based plastic waste makes its way into the environment and, specifically, the

³⁰ Personal communication between Clay Riding, Vice President of Energy Resources for NWIW, and Jasmine Zimmer-Stucky, formerly Senior Organizer for Columbia Riverkeeper (May 25, 2018) (further documentation available upon request).

³¹ Jambeck, *et al.*, [Plastic waste inputs from land into the ocean](#), 347 *Science* 769–771 (2015).

³² *Id.*

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

To the extent possible, the SSEIS 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 journal *Science*³³ may assist in making such calculations.

f. Harm to Marine Wildlife Including Southern Resident Orcas

The SSEIS should correct the EIS' incorrect statements and illegal analysis³⁴ regarding the impacts of NWIW's vessel traffic on marine wildlife, especially critically endangered Southern Resident orcas. The proposed project would significantly increase the amount of tanker traffic moving through the mouth of the Columbia River and offshore of Washington. The increase in tanker traffic associated with the proposal (36 to 72 vessels per year) poses risks to marine wildlife in several ways, including through elevated risk of ship strike and increased underwater noise.

Despite these risks, the EIS claimed that Southern Resident orcas are not likely to be present at the mouth of the Columbia with any regularity³⁵ and that any vessel strikes that occur would "not represent a significant adverse effect."³⁶ These assertions are not true. First, Southern Resident orcas consistently congregate near the mouth of the Columbia River in the late winter and early spring to hunt chinook salmon. Second, Southern Resident orcas are harmed by vessel noise and susceptible to vessel strikes—since 2005, three confirmed vessel strikes have occurred, resulting in two fatalities. Finally, because Southern Resident orcas are critically endangered, any additional mortality from vessel strikes (or acoustic interference with hunting or socialization) would be a significant adverse effect for SEPA purposes. Southern Resident orcas are highly endangered due, in part, to the impacts of vessel traffic. The SSEIS should correct the EIS' inaccuracies and discuss NWIW's potential impact on one of Washington's most culturally and economically important wildlife species.

³³ *Id.*

³⁴ For instance, limiting the project area to 3 nautical miles from the mouth of the Columbia River violated Ecology's SEPA regulations specifically directing that an "agency shall not limit its consideration of a proposal's impacts only to those aspects within its jurisdiction, including local or state boundaries." WAC 197-11-060(4)(b).

³⁵ See EIS, p. 6-24; see also EIS, p. 17-93 ("Impacts to Orca whales are not anticipated").

³⁶ EIS, p. 6-46.

The SSEIS should also examine the cumulative impact of NWIW and other Columbia River vessel traffic on Sothern Resident orcas and marine wildlife. To be of any practical value to decision-makers and the public, the cumulative impacts analysis must explain how the human environment would look and function if this project, and projects with similar or overlapping impacts, are constructed. It is not sufficient to say that the impacts of multiple projects would be worse than the impact of NWIW’s project alone.³⁷ The Washington Energy Facility Site Evaluation Council—the siting agency for major energy facilities in the State of Washington, which should be conducting the review of this large fossil fuel export project—explained that:

“cumulative effects analys[e]s should be conducted within the context of resource, ecosystem, and human community thresholds—levels of stress beyond which the desired condition degrades.”³⁸

Accordingly, the SSEIS should identify these “desired condition[s]” and discuss whether the cumulative level of vessel traffic would cross acceptable “resource, ecosystem, and human community thresholds,”³⁹ including, but not limited, to:

- The threshold at which noise levels caused by vessel traffic in the Pacific Ocean will compromise cetacean survival and communication; and
- The threshold at which ship strikes due to vessel traffic in the Pacific Ocean will compromise the viability of endangered or threatened marine wildlife populations.

III. Mitigation

NWIW’s vague intention to mitigate some of the methanol refinery’s in-state climate pollution does not satisfy SEPA or the Shorelines Management Act (SMA).⁴⁰ Broadly speaking, and despite Ecology’s requests for more detail, NWIW still refuses to say how it would offset its massive contribution to climate change. Even if the mitigation framework proposed by NWIW was sufficient, NWIW’s proposed limitation to in-state emissions is nonsensical and not supported by NEPA or the SMA. To seriously consider mitigation, the SSEIS would need to explore concrete offsets for NWIW’s entire GHG footprint—without artificially limiting mitigation to in-state emissions or relying on NWIW’s unsupportable displacement theory.

³⁷ See, e.g., Draft EIS, pp.15-8–23.

³⁸ Washington Energy Facility Site Evaluation Council (“EFSEC”), *DEIS for the Vancouver Energy Distribution Terminal*, p.5-1 (quoting guidance written by the Council on Environmental Quality, the federal agency responsible for interpreting NEPA).

³⁹ *Id.*

⁴⁰ See, e.g., Columbia Riverkeeper and Sierra Club, [Letter to Ecology RE: Newly proposed mitigation will not offset NWIW’s massive climate pollution](#) (July 30, 2019).

CONCLUSION

Commenters look forward to receiving information about opportunities for public input on the SSEIS. Regarding scope, the SSEIS should describe and analyze the full range of foreseeable impacts of NWIW's proposed methanol refinery, but not entertain unreliable speculations about whether NWIW's methanol would displace methanol or olefins from other sources. Most importantly, the SSEIS should re-examine the conclusion—put forward by the project proponents and their consultants—that constructing the world's largest fracked gas-to-methanol refinery in the Columbia River estuary would have no significant adverse impacts to the environment and public health.

Sincerely,



Miles Johnson, Senior Attorney for Columbia Riverkeeper

Submitted on behalf of:

Center for Biological Diversity

Columbia Riverkeeper

Sierra Club

Washington Environmental Council

Washington Physicians for Social Responsibility

cc'd via email:

- Taylor Aalvik, Natural Resources Director, Cowlitz Indian Tribe
- Julie Carter, Policy Analyst, Columbia River Inter-Tribal Fish Commission
- Laura Watson, Director, Washington Department of Ecology
- Reed Schuler, Senior Policy Advisor to Governor Inslee, Climate & Sustainability