

Building the bridge to a stronger regional economy and cleaner global environment



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WORKS

NW Innovation Works (NWIW) is investing \$1.8 Billion in the construction of facilities at the Port of Kalama to meet the global need for clean methanol manufacturing. The facilities will implement innovative technologies, such as Ultra-low Emissions (ULE) and Zero Liquid Discharge (ZLD), to protect our environment, decrease emissions, reduce waste, and reuse resources.



1,000

At the peak of construction the facility at the Port of Kalama will create up to 1000 jobs. Once operational, the facility will employ nearly 200 full-time managers and workers, providing family wages plus benefits.



75%

ULE technology will lower greenhouse gas emissions at the facility up to 75 percent, compared to conventional methanol production.



NW Innovation Works (NWIW) is proposing a facility at the Port of Kalama, Washington to convert natural gas to methanol. The facility will generate full-time jobs and local revenue.

Once operational, the facility will employ approximately 200 full-time managers and workers, providing family wages plus benefits. The Port of Kalama approved a lease agreement with NWIW in April 2014. The Final Environmental Impact Statement (FEIS) has been released for public review. www.kalamamfgfacilitysepa.com



SAFETY IS OUR FIRST PRIORITY

Safety is our first priority – for our facility and for the community. Our safe and proven technology uses an enclosed system for handling natural gas, process chemicals, and the finished methanol product. This system helps prevent spills, fires, and other risks to the public and the environment. Along each step of the process, NWIW will follow state and federal environmental regulations, along with local fire, zoning, and other laws and regulations. NWIW is proactively working with first responders and regulatory agencies to develop emergency response plans that include a dedicated and trained on-site fire brigade and equipment to support any potential emergency response.



WORKING WITH THE COMMUNITY

NWIW is working closely with the Port of Kalama, City of Kalama, Cowlitz County, and Cowlitz County Fire District 5 to consider the unique site needs at the Port of Kalama. Our facility will meet and exceed local, state, and federal regulations that address the safety of our employees and surrounding communities. We are committed to working with the community to address any concerns that are identified during permitting and design, such as traffic, noise, safety, environmental impacts, or other questions about the facility.

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NWIW Kalama Frequently Asked Questions



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A Draft EIS reviewing this project was released on March 3, 2016 for public review and comment. The comment period is now closed. The Final Environmental Impact Statement was released on September 30, 2016 and is available for viewing and downloading at: nwinnovationworks.com

The methanol will be used to make products we use everyday



What is the role of the Port of Kalama and NWIW on this project?

In 2014, the Port of Kalama leased the project site to NWIW. The Port of Kalama also agreed to supply industrial water and a dock for the project. When deciding to lease land to NWIW, the Port of Kalama balanced the significant capital investment and economic benefit to the community, the number of manufacturing jobs that will be created and the limited negative impacts expected during construction and operation of the project. Before entering the agreement with NWIW, the Port of Kalama held open houses to listen to community feedback. NWIW will own and operate the methanol production plant.

Who is NWIW?

NWIW is owned by Pan Pacific Energy Corp. (PPE), a Delaware corporation. PPE is owned by CECC (Shanghai Bi Ke Clean Energy Technology Co., Ltd.), which is incorporated in China. CECC is owned by Chinese Academy of Sciences Holdings Co., Ltd., Johnson Matthey, Plc and Double Green Bridge Hong Kong (DGB). DGB is an investor group including members of CECC management.

What is methanol and why do we need it?

Methanol, also known as wood alcohol, is a clear and colorless liquid. It is found naturally at low concentration in some fruits and vegetables, but is produced for commercial or industrial uses from natural gas or coal. Methanol is biodegradable and non-carcinogenic, but it is poisonous to humans if ingested or absorbed in more than small amounts. Methanol is used in many consumer and industrial products but is used primarily to make materials that are used to produce paint, particleboard, plastics, carpets, pharmaceuticals, laminated lumber, and windshield wiper fluid.

Why the Port of Kalama?

The Port of Kalama has owned the project site since 1979 and has prepared the site for industrial development. Other projects have been proposed for the site but not built. The site is designated for heavy industrial use by Cowlitz County. The site is large enough for the project, and is close to an existing gas transmission line. Water is available from the Port of Kalama. The shoreline is suitable for the construction of a dock large enough for the ships that will carry the methanol product. To learn more about the Port of Kalama visit: www.portofkalama.com



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\$1.8 billion

Total project cost

\$660 million

In local spending



688 jobs

Total direct and indirect jobs during operations

\$21 million

In annual payroll for direct jobs

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What are the economic benefits of the project?

An economic impact analysis was performed by ECONorthwest. The analysis was divided into two parts – construction and operations.

Economic benefits during the construction phase

- \$1.8 billion total project cost
- Approximately \$660 million in local spending on construction labor, goods, services
- \$625.9 million in direct economic impact during construction
- Approximately 1,000 peak construction employment
- \$57.9 million in state and local taxes

Economic benefits during the operations phase

- 688 total jobs during operations, including 192 direct, and 496 indirect and induced jobs
- \$21 million in annual payroll for direct jobs
- Estimated \$30 - 40 million in annual tax payments paid to state and local authorities during operations

What is the environmental review process for the project?

Many local, state, and federal permits and reviews are required to construct and operate the project. Before local and state decisions are made, the entire project must be reviewed under the State Environmental Policy Act (SEPA). The SEPA review makes sure that impacts to the environment from the construction and operation of the project are considered during the state and local decision process. This review is a very important step. For that reason, the Port of Kalama and Cowlitz County completed an EIS that explains the project details in accordance with the SEPA process. The EIS presents the results of detailed environmental studies that evaluated the potential impacts of the project on human health and natural resources.

The Port of Kalama and Cowlitz County are responsible for the EIS – not NWIW. The Port of Kalama and Cowlitz County have each appointed a SEPA responsible official, and together they are in charge of the EIS. The SEPA responsible officials decide what it studies, how it is studied, and how to respond to comments. The Port and County issued the Draft EIS on March 3, 2016 and the Final EIS on September 30, 2016. It is available for review at nwinnovationworks.com.

State and local agencies will use the Final EIS in their decision making on the various permit applications for the project.



 1%

The approximate increase in greenhouse gas state-wide.



 61%

The amount the Ultra Low Emissions technology will reduce greenhouse gas compared to conventional manufacturing methods.

What is the environmental review process for the lateral pipeline?

A new natural gas pipeline is needed for the project. The pipeline is the Kalama Lateral Project and is being built by Williams Pipeline. It requires a review and approval from the Federal Energy Regulatory Commission (FERC). FERC is the federal agency that regulates natural gas transmission. In compliance with the National Environmental Policy Act, FERC issued an environmental assessment for the pipeline project. The gas pipeline is also evaluated in the Final EIS for the methanol manufacturing project.

What are the emissions from this project?

Almost all of the air emissions from the plant would result from the combustion of natural gas necessary for certain aspects of the reforming process. The most significant emissions would be greenhouse gases (GHG). Smaller amounts of criteria and toxic air pollutants also would be emitted by the methanol plant. These pollutants are subject to specific state and federal requirements.

According to the Final EIS, all toxic air pollutants listed were found “to comply with emission standards” with “concentrations less than the respective screening level thresholds”.

The Air Quality Analysis Technical report, which is included as an appendix to the Final EIS, includes a list of the toxic air pollutants that were analyzed. Detailed analysis demonstrates that all emissions of toxic air pollutants from the plant itself would be sufficiently low to protect human health and safety in accordance with Washington State law.

- Emission levels for all pollutants emitted by the plant using the Ultra Low Emissions (ULE) technology are well within acceptable source impact level (ASIL) guidelines.
- There would be additional air emission impacts from construction and shipping associated with the facility, but these also would not result in significant adverse impacts according to the analysis.
- The Final EIS concludes that the proposed project “would not result in unavoidable significant adverse impacts related to air quality or GHG emissions”.
- NWIW has applied for a permit from the Southwest Clean Air Agency. This data will be reviewed by the agency and used to determine whether a permit should be issued.
- ULE technology will reduce GHG emissions compared with conventional combined reforming (CR) technology by 61%. Because the Kalama site requires onsite power generation to supplement power available to the site, the net GHG reduction with ULE will be 31.4% compared to CR technology.



0.0067%

The percent of water needed for the facility as compared to the flow of the Columbia River at the site.



8%

The percent of total facility water demand that is used in the manufacturing process.

How much water would the facility use?

The methanol plant will require 3,038 gallons per minute (gpm) of water. The vast majority of the water is from existing Port of Kalama water rights. A groundwater well would be constructed by the Port of Kalama for the project and other future uses. Additional water will come from stormwater collected on-site and recycled water from the plant. Water demand for the methanol plant would equal approximately one-third of the Port of Kalama's existing water rights.

- Operation of the water well is not expected to result in aquifer drawdown or affect the ability of other users to draw water from permitted wells.
- The well would result in no discernible aquifer drawdown and any effect on the City of Kalama water supply, which is located over a mile away and connected directly next to the Kalama River, would be negligible. Similarly, there are no other private landowner wells within 3,400 feet of the proposed Port of Kalama well.

About 90% of the total water supply would be used for cooling, and the proposed facility would be designed for repeatedly recycling both cooling water and process wastewater.

- The cooling towers would discharge non-contact cooling water to a pond where it would be cooled with incoming raw water, treated and ultimately sent to the existing outfall and discharged to the river. The cooling water will be cooled to a temperature at or below the state temperature standard for the river.
- The vast majority of water, approximately 88%, would evaporate to the atmosphere at the cooling towers.
- There will be no stormwater or wastewater discharged into the Columbia River.
- The facility will implement Zero Liquid Discharge (ZLD) technology to recycle and reuse wastewater in the facility. As an additional benefit, the implementation of the technology will reduce raw well water usage at the Kalama Facility by over 150 million gallons annually.

What are the effects to local rivers, streams, and habitat?

The FEIS found that the project would not result in significant adverse impacts to water resources.

Construction of the dock and dredging to accommodate ships will result in some impacts to the Columbia River and species that rely on the river. This includes loss of habitat from placement of piles and a reduction in habitat quality from shading caused by the dock and temporary impacts of deep water dredging. These impacts are minimized by design and compensatory mitigation is provided for unavoidable impacts.

- ZLD technology will be used eliminate wastewater discharge into the Columbia River and impacts on aquatic life.
- To maintain and protect the land around us, our facilities are designed within the boundaries of previously developed areas to avoid direct impacts to the forested wetlands.
- The riparian and wetland buffer habitats will be enhanced by removing invasive species and planting native plants to enhance habitat.
- NWIW will install engineered log jams that help create high-quality fish habitat, including refuge and foraging opportunities for juvenile salmonids and fish.
- Removal of derelict piles from a former trestle will restore benthic habitat and improve water quality.



The Final EIS found the project operations would not result in a significant adverse impact related to energy.

How much energy would the facility use?

Using the proposed ULE technology, the facility would use approximately 201 megawatts of electricity with both methanol production lines in operation.

The Final EIS found the project operations would not result in a significant adverse impact related to energy.

- An on-site natural gas-fired power generator would produce approximately 101 megawatts, and the remaining 100 megawatts of electricity demand would be provided by the Cowlitz PUD.
- The Cowlitz PUD stated it can support a connected load of 100 megawatts for the proposed project with some improvements to its system. These improvements would include upgrading an existing transmission line, improvements to the Kalama Industrial Substation, and the possible construction of a short transmission line across I-5.

NWIW will pay for the improvements to the transmission system required to serve the facility.

The Final EIS also found energy needs for construction would not result in significant adverse impacts to energy and natural resources. Demand for diesel and gasoline to fuel construction equipment would be met by existing supplies and construction would use a maximum of approximately 5.4 megawatts per day of temporary power.

How will natural gas be provided for the facility?

NWIW and Northwest Pipeline have signed a pre-construction agreement for the “Kalama Lateral Project” a 3.1-mile, 24-inch diameter natural gas pipeline and related facilities extending from Northwest Pipeline’s mainline to NWIW’s proposed methanol production facility planned for the Port of Kalama, all located in Cowlitz County, Washington.

The proposed 3.1-mile route is the same preferred route as the previously filed Kalama Lateral Pipeline Project in Docket No. CP13-18, known as the “Timber Rock” route. The Timber Rock route was selected based on safety, constructability, and stakeholder input.

The proposed project is subject to all necessary federal, state, and local permits and is overseen by the FERC. If the Kalama Lateral Project and the NWIW project are approved, the proposed pipeline would be built in 2017. Additional information about the proposed Kalama Lateral Project can be found online at the Kalama Lateral Project website: www.kalamapipeline.com



The risk assessment shows there is no measurable risk of an offsite fatality, and that the project would not have a significant risk of injury to workers during operation.



How has safety been analyzed with this project?

The Final EIS examined the environmental health and safety aspects of the methanol plant, including impacts from a chemical release or spill and fires and explosion. The Final EIS also examines and recommends steps that would be taken to avoid or mitigate impacts. Safety reports prepared for the construction and operation of a methanol plant, marine terminal, and pipeline were reviewed.

A Quantitative Risk Assessment (QRA) was completed to address risks of the proposed NWIW methanol plant to onsite employees and the offsite community from accidental releases from methanol production, storage, and vessel loading operations. The QRA compared the level of risk from the NWIW Kalama facility to the risk criteria published by the Health and Safety Executive of the United Kingdom (UK-HSE)*, which is a widely accepted international authority, and their criteria are utilized by many government organizations and companies to evaluate the risk of similar industries and hazards.

The conclusion of the QRA is that the proposed NWIW methanol plant poses a level of risk considered as broadly acceptable to the public and surrounding community of Kalama, as compared to the UK-HSE risk criteria. Specifically, the QRA concluded:

- Any accident or fire would be contained within the boundaries of the facility.
- The destructive force of a worst case explosion would not extend outside the facility boundaries.
- The risk assessment shows there is no measurable risk of an offsite fatality associated with the plant, and that the project would not have a significant risk of injury to workers during operation.

I heard that this was a new technology; are you sure it will work?

The ULE reforming technology has been used in United States and around the world to produce other chemicals from natural gas. ULE is a proven technology that has been used at smaller scales for the production of methanol outside of the US. This project will be the first application of ULE technology for methanol production in the US, setting a standard for cleaner manufacturing.

Will North Port still be available for recreational use?

The Port of Kalama has allowed the recreational use of portions of the site by permission. Following construction, the Port will continue to allow access to the shoreline and trails in the area. The Port also intends to build a parking area and improve the access road for recreational use.

Contact

If you would like to receive regular updates about the proposed facility or have questions, please send an email to: info@nw-iw.com

For media inquiries, please contact: media@nw-iw.com

For official information on the SEPA process and the FEIS from the Port of Kalama and Cowlitz County please visit: www.kalamamfgfacilitysepa.com

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*Comparable risk criteria have not been established in the United States