



Technical Guidance

The Puget Sound Clean Air Agency should go back to the drawing board - The draft SEIS does not account for the full climate impacts of fracked gas. The analysis is incredibly flawed and unacceptable, and we need the Air Agency to do better before they decide on the air permit for the facility.

The draft SEIS uses an outdated methane global warming potential (GWP) value - GWP is a measure of potency for a greenhouse gas and it is measured against carbon dioxide (CO₂). CO₂ has a GWP value of 1. Methane has a much larger GWP value, especially over the short term. The draft SEIS uses the United Nations' 2007 value of 25 for the 100-year number (i.e. the methane average GWP over 100 years), whereas they should be using the 2016 value of 32. This single modification in SEIS GHG model makes the LNG plant dirtier from a greenhouse gas emissions perspective than if the LNG plant were not built.

Report	20-year GWP	100-year GWP
2007 IPCC AR4	72	25
2013 IPCC AR5	84	28
2016 Scientific Study (authors include lead from 2013 study)	96	32

Methane is significantly more potent in the near-term, yet the SEIS analysis only looks at the long term impact - Methane is a significantly more potent greenhouse gas than carbon dioxide, especially in the short term. The draft SEIS analysis is based on the 100-year GWP of methane. The IPCC report released a report on October 8th, indicating that we must change our energy fuel mix in the next 12 years or face dire consequences in 22 years. Therefore, the SEIS should use the 20-year numbers, as that is the timeframe where action is needed. Using the most recent 20-year value of 96 makes the LNG plant 50% dirtier than the current capability.

Lack of evidence that BC fracked gas is as clean as they claim - The draft incorrectly assumes that B.C. fracked gas would result in a significant GHG emission reduction. The reports used to justify such conclusion were models or self reported by industry. The three B.C. based reports all require further analysis to determine if they can even be extrapolated to B.C.-wide fracking wells. One of the reports, states that the emissions examined in the report are lower than industry average due to a variety of reasons. So it would be inappropriate to extrapolate the methane leakage rate from that report to all of B.C. fracking wells. Additionally, the SEIS fails to incorporate methane leakage data from recent 2017 and 2018 reports that use empirical, independent physical studies at well sites. The 2018 report found that 85 percent of active wells are directly venting methane daily, and that those leakages have been historically underreported. The same report found that methane emissions in BC are 2.5 times higher than reported.

No guarantee that all of the fracked gas would come from BC - The draft claims that all of the natural gas will be coming to the facility from British Columbia. During the recent natural gas pipeline explosion in B.C. on October 10th, it is our understanding that PSE was able to use natural gas from North Dakota. The methane leak estimates from North Dakota are noticeably higher than those reported from B.C. PSE's own 2017 10K filing with the Securities and Exchange Commission (SEC) shows that in 2017 they obtained gas from British Columbia (54.8%), Alberta (19.1%) and the United States (26.1%). How will the Air Agency hold PSE accountable to bringing in only B.C. gas?

1 <https://davidsuzuki.org/wp-content/uploads/2018/01/investigating-fugitive-emissions-abandoned-suspended-active-oil-gas-wells-montney-basin-northeastern-british-columbia.pdf>

2 <https://davidsuzuki.org/wp-content/uploads/2018/07/mobile-measurement-methane-emissions-natural-gas-developments-northeastern-british-columbia-canada.pdf>

Talking Points for LNG facility in Tacoma

No plan for changes in BC methane leaks or leak estimates - The SEIS locks PSE LNG into getting fracked gas from Canada regardless of the actual methane leak rates. If later studies show that actual leaks are considerably larger, what happens? Will operations at the facility be halted until the new studies are applied?

Regulations ≠ Implementation - The SEIS claims that we should expect to see reductions in the amount of upstream fugitive emissions given B.C.'s new, tough regulations on fugitive methane emissions. However, just because a regulation has been passed, that does not mean that it has been actually implemented in the field. The SEIS should only assume methane emission leak rates based on empirically collected data, and not on plans.

Analysis assumes credit for extra maritime customers that currently do not exist - The analysis appears to assume that Puget LNG (the for-profit arm of this venture that will be selling the LNG to maritime customers) already has additional maritime customers, and so is claiming greenhouse gas emissions reduction credit for them. They have no such customers and so cannot legitimately claim such credit.

Questionable Methane Slippage Rates for TOTE Vessels - The SEIS appears to be using unacceptably small methane slippage rates (the amount of unburned methane that will escape into the atmosphere) for the TOTE maritime vessels that will be burning the LNG. Even in PSE's own greenhouse gas life cycle analysis (that they completed and is provided as part of this report) their external peer reviewer questioned PSE's assumption on their methane slippage rate. That same PSE report indicated that PSE should be using the higher rate, as that is considered best practice.

Cut Off Threshold - The SEIS includes a 1% cutoff threshold, such that any emissions source is excluded when the source produces less than 1% of the total GHGs for the system. We would like to understand all of the sources that fall into this cut off threshold category and the notional percentage of GHG emissions coming from those sources. If the analysis incorporates multiple sources less than 1%, but cumulatively these add up to a significant percentage of the overall GHG emissions (say three 0.8% sources adding up to 2.4%), then this could be significantly under representing the true GHG emissions.

No alternative options for ships is a false assumption - TOTE Maritime is the only shipping company in the Port of Tacoma that has committed to converting their vessels to run on LNG, yet all of the shipping companies are required to meet the 2020 International Maritime Organization (IMO) low sulfur emissions requirements. TOTE is already compliant with this requirement, as it has been using ultra-low sulfur diesel (ULSD) since February 2017. Therefore TOT has no regulatory need to convert to LNG. Other companies are either also using ULSD or are incorporating scrubbers into their vessels to meet the IMO requirement. TOTE also converted to using electric, shore-based power when they are in port in Tacoma. Finally, WA State Ferries considered converting to LNG, but abandoned the idea in favor of electric engines.

Peak shaving is for PSE electricity customers and the demand can be met by other means - The peak shaving component of the LNG plant will be used to generate electricity for PSE electricity customers. Currently, without the LNG plant, PSE must burn diesel to generate this extra electricity on a peak-shaving day. The SEIS indicates that the Frederickson combined cycle turbine is where the peak shaving will occur and that an additional 26 MW of power can be created during peak-shaving operations. Please provide more details concerning the peak shaving need, such as the full power and energy required for peak shaving operations. These details are not explicitly provided in the draft SEIS. Once these details are provided, PSCAA should perform GHG emissions analysis for other technology alternatives such as a battery storage or even purchasing wholesale electricity from Tacoma Power (which is 97% fossil-fuel free).

Analysis does not incorporate diesel emissions for transporting sand/water to fracking wells - Nearly all (98%+) of the wells in British Columbia are fracking wells and fracking requires large consumption of water and sand for its operation. The SEIS, however, does not include the GHG emissions from the diesel trucks used to transport the water and sand to the wells.

This draft SEIS is incomplete. There are more than 10 locations in this report where there is incomplete information, or where it states that more data is needed from PSE. This lack of complete information makes this analysis unacceptable.

Talking Points for LNG facility in Tacoma



Narrative Guidance

The Puget Sound Clean Air Agency should go back to the drawing board. The draft SEIS does not account for the full climate impacts of fracked gas. The analysis is incredibly flawed and unacceptable, and we need the Air Agency to do better before they decide on the air permit for the facility.

Puyallup Rights and Justice

1. The proposed project is a direct affront to the Puyallup Tribe, putting their treaty rights and community at risk first and worst.
2. Treaty rights have more authority than the right of any other governing body or agency. The Medicine Creek Treaty is the supreme law of the land and has been violated throughout the process for this facility.
3. I stand with the Puyallup in opposition to the LNG facility. The Puget Sound Clean Air Agency and all agencies involved in permitting this facility still need to consult with the Puyallup Tribe.

Climate Impacts of Gas

1. Although fracked gas produces less carbon emissions than coal when burned, the production, processing, storage, transmission, and distribution of fracked gas leaks into the atmosphere immense amounts of methane, which is a much more destructive pollutant for our climate than carbon dioxide. When accounting for methane leaks, fracked gas has climate impacts that rival those of coal.
2. LNG does not arrive in Washington carbon neutral. When methane is leaked directly into the atmosphere, it is 87 times more powerful at trapping heat than carbon dioxide when its impact is averaged over a 20-year period.
3. PSE's LNG facility, is precedent setting on how we deal with gas in Washington state. Analysis should assume a 3 percent overall leakage rate of methane. This modest standard reflects the global average leak rate, and is conservative in light of high average leak rates in the West and the additional losses that occur within distribution systems or at end-use facilities.
4. An overall 3 percent leakage rate should be applied unless PSE can provide clear evidence that the leakage rate associated with its proposed LNG project is, in fact, below this 3 percent standard. The burden of proof for adopting a project-specific standard should be on the project proponent, because the gas industry is the keeper of all crucial information about leakage rates.

Environmental Justice

1. At public information meetings in 2017, the Air Agency shared that the facility would release ammonia, arsenic, cadmium, hydrogen sulfide, and sulfur dioxide. LNG facilities have been shown to threaten human health by significantly degrading air quality and contributing to health-harming pollution. The proposed emissions units in this facility include an enclosed ground flare and vaporizer unit that would emit volatile organic compounds (VOCs). VOCs include a chemical complex that has been linked to birth defects, shown to cause cancer, and negatively affect the nervous system.
2. The communities being most impacted by the dangers of LNG, from the extraction site to the end location are most often low income, communities of color; and most often indigenous communities as seen here in Tacoma with the Puyallup Tribe and in B.C. the numerous First Nations suffering the consequences of fracking.

Facility has 40-year plan, despite dire climate crisis

1. The IPCC reports that we need to change our fuel mix immediately in the next 12 years, or face dire consequences. The best available science on methane emissions must be used here if we are serious about combating climate change. This project would exacerbate the crisis we are in, locking Washington into gas infrastructure we do not need. Moreover, there is the potential that the facility itself will be impacted by rising sea levels due to climate change at the Port of Tacoma.

Talking Points for LNG facility in Tacoma

Puget Sound Energy has a bad track record

1. The Puget Sound Clean Air Agency issued a Notice of Violation to PSE because PSE started construction without following protocol and process required by the agency. Civil penalties do not match the severity of the implications of the applicant's disregard for proper process. This history should be considered in evaluating the applicant when determining if they should receive this permit.
2. This entire time, PSE has built a massive facility without a major permit. Why should they be trusted to uphold any conditions that come with an issuance of the air permit? PSE's blatant disregard for public process is undeniable. Do not let them bully their way into operating this facility.
3. In 2016, a PSE gas line exploded in the Greenwood neighborhood in Seattle. PSE has done an extremely poor job of taking care of the community that was impacted. Thankfully no one was injured. Let's not find out how poorly they might also manage a similar such situation in Tacoma.
4. Prior to the release of the draft SEIS, PSE's website claimed that their gas sources for the LNG facility would come from multiple locations. The day after the draft was released, PSE changed the information on that site to state it would only be coming from B.C., per the conclusion in the draft that offers that condition on the air permit.

Walk the talk

The Puget Sound Clean Air Agency has promised these commitments on their website:

- Be good and wise stewards of the resources you give us
- Defend the future
- Prevent and reduce risk to you by upholding and enforcing the law
- Protect you from air pollution
- Tell you what's in the air you are breathing

There is no way for the Agency to uphold these commitments unless they deny the air permit for this facility.