Puget Sound Energy Liquefied Natural Gas (LNG) Facility

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The proposed Puget Sound Energy Liquefied Natural Gas liquefaction and storage facility is to be located in the Tacoma Tideflats. The final Environmental Impact Statement (FEIS) was issued November 9, 2015 by the City of Tacoma.

The Puget Sound Energy facility will occupy 33 acres (30 acres of upland and 3 acres of aquatic environments). The facility will liquefy 250,000 to 500,000 gallons of natural gas daily to -280 F. The facility will consist of one eight million gallon LNG storage tank and infrastructure for loading marine vessels, bunker barges and trucks. Two new segments of pipelines will be added to the PSE distribution system – a one mile distribution pipeline in Pierce County and a four mile distribution pipeline to extend from the city of Fife into Tacoma to reach the liquefaction facility.

The facility will
-provide fuel for marine vessels, bunkering barges, and land based vehicles (tanker trucks)
-transfer LNG to the adjacent TOTE Marine Vessel Fueling System
-vaporize LNG back to the gaseous state to inject into PSE natural gas distribution system during periods of high demand

An air permit application process will be required for air emissions from the facility. The permitting agency will be the Puget Sound Clean Air Agency (PSCAA).

In the FEIS there is a focus on the improvement in air quality based on the replacement of diesel combustion sources with new natural gas sources.

The cost of replacing diesel fired engines with natural gas engines is enormous. That would only occur if there was a regulatory requirement. The probability of that happening is not likely due to economic impacts.

Control Devices

-Flare System -40 foot high enclosed flare

-85 foot open flare (emergency flare)

-Impurities cleaned from the pipeline gas pretreatment will be sent to the enclosed flare

Primary Air Emission Sources

Pretreatment process of pipeline gas

Enclosed Flare

Fugitive emissions from the processes

Refrigerant losses from liquefaction, storage, transfer, vaporization and support facilities.

Sporatic Air Emission Sources

Emergency flare

LNG vaporizer

Emergency diesel generator

Potential Air Emissions

NOX	13.8 tons per year
CO	20.1 tons per year
SO2	5.5 tons per year
PM10	1.03 tons per year
PM2.5	1.03 tons pe ryear
Volatile Organic Comp.	85.7 tons per year
Sulfuric Acid	0.27 tons per year
Toxic Air Pollutants	39.6 tons per year
Hazardous Air Pollutants	0.38 tons per year
Green House Gases	20,751 tons per year

Largest Potential Emissions by Source

Pretreatment Heater

CO	2.75 tons per year
Toxic Air Pollutants	4.14 tons per year
Green House Gases	3,952 tons per year

Enclosed Flare (pilot and vent gas)

Volatile Organic Comp.	7.23 tons per year
CO	12.8 tons per year
Toxic Air Pollutants	24.6 tons per year
Green House Gases	14,654 tons per year

Emergency Open Flare (pilot)

Green House Gases	181 tons per year

LNG Vaporizer (Backup)

Green House Gases	981 tons per year

Emergency Diesel Generator

NOX	5.36 tons per year
Toxic Air Emissions	8.65 tons per year
Green House Gases	614 tons per year

Fugitive Sources

Tacoma LNG Facility and TOTE Fueling System

Green House Gases	51.2 tons per year

Refrigerant Losses

Volatile Organic Comp.	77.0 tons per year
Green House Gases	318 tons per year

Largest Source of Emissions

The largest source of emissions will be the Enclosed Flare. It will release the largest amount of Nitric Oxide (6.32 tons per year), Carbon Monoxide (12.8 tons per year), Sulfur Dioxide (5.45 tons per year), PM10 (0.46 tons per year), PM2.5 (0.46 tons per year), Volatile Organic Compounds (7.23 tons per year), Toxic Air Pollutants (24.6 tons per year), and Green House Gases (14,654 tons per year).

The largest source of fugitive emissions will be the Refrigerant losses which account for 77 tons per year of Volatile Organic Compounds and 318 tons per year of Green House Gases.

Volatile Organic Compounds

The Volatile Organic Compounds are not speciated in the information presently available. They should be speciated in the application for the air permit that will be submitted to the Puget Sound Clean Air Agency.

Non-Attainment

The area of the proposed LNG facility is in attainment for all parameters except PM2.5. The proposed facility will release 1.03 tons per year of PM2.5.