

Final Supplemental Environmental Impact
Statement (Excerpt)
(3/29/2019)

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Proposed Tacoma Liquefied Natural Gas Project

Final Supplemental Environmental Impact Statement



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Prepared for:

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with the potential to leak methane. The analysis assumes that the leak rate of the swivel joints would be similar to that of the pump seals. (PSE 2018)

2.4 End Use Emissions

The life-cycle analysis assumes that all fuel distributed from the facility would be combusted to power on-road trucking, TOTE marine vessels, other marine vessels by truck-to-ship bunkering, or other marine vessels by bunker barge. The volume and type of use vary slightly depending on the daily capacity (see Table 2-1). TOTE marine vessel fuel use is estimated to remain the same for both the 250,000 gpd and 500,000 gpd production level scenarios. The balance of the 500,000 gallons of LNG per day has been attributed to supply fuel to the Gig Harbor LNG facility, on road trucking, truck-to-ship bunkering, and other marine vessels by bunker barge.

Table 2-1 LNG End Use Volume, Proposed Action

LNG Production	Scenario A			Scenario B		
	End Use Share	gallons/day	MGal/year	End Use Share	gallons/day	MGal/year
Total	100.0%	250,000	88.75	100.00%	500,000	177.50
Peak Shaving	2.2%	5,511	1.96	1.1%	5,511	1.96
Gig Harbor LNG Supply	0.0%	0	-	1.00%	5,000	1.78
On-road Trucking	0.0%	0	-	2.00%	10,000	3.55
TOTE Marine	42.7%	106,849	37.93	21.4%	106,849	37.93
Truck-to-Ship Bunkering	0.0%	0	-	1.00%	5,000	1.78
Other Marine (by Bunker Barge)	55.06%	137,640	48.86	73.5%	367,639	130.51

Key:
 LNG = liquefied natural gas
 MGal = million gallons
 TOTE = Totem Ocean Trailer Express

2.5 Construction Emissions

Direct construction GHG emissions result from the combustion of fuel in construction equipment. Upstream emissions consist of electric power for construction as well as those emissions generated in the production of gasoline and diesel fuel. Construction equipment emissions correspond to the fuel use combined with emission factors for diesel and gasoline during the construction time of about three and a half years. Another portion of construction emissions consists of vehicle trips (workers and heavy-duty trucks). Equipment use was estimated based on construction activities defined in the FEIS (see Section 2.3 [Construction Procedures] of the FEIS). Material manufacturing emissions include the energy inputs and associated GHG emissions in the production of raw materials, and manufacturing processes to produce building materials for the LNG facility, such as steel and concrete.

GHG emissions were calculated for the following:

- Construction equipment fuel use
- Construction equipment power
- Material delivery
- Material manufacturing for the Tacoma LNG Facility



PSE Tacoma LNG Project GHG Analysis Final Report

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3.3 Downstream Tacoma LNG End Use Emissions

LNG from the Tacoma facility will primarily deliver the LNG to marine vessels as marine fuel at the Tacoma port. LNG will also be vaporized and injected into the pipeline for use by PSE residential and commercial customers.

The following end use mix is assumed as input, based on an annual operation of 355 days of Tacoma LNG.

Table 3.13. LNG End Use Mix of Tacoma LNG Facility – 500,000 gal/yr Production

LNG End use	Mgal/yr	GBtu/yr, LHV
Peak Shaving	1.96	151
Gig Harbor LNG	1.78	137
On-road Trucking	3.55	274
TOTE Marine	37.93	2,927
Truck-to-Ship Bunkering	1.78	137
Other Marine (by Bunker Barge)	130.61	10,070
Total LNG	177.5	13,695

PSE Indicated that peak shaving would occur for 10 years. The values here show the average over 40 years or 1/4 of the level for the first 10 years. After 10 years of peak shaving, LNG would be used for other marine fuel.

