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Table 1: Energy Content of LNG and Other Transportation Fuels

Fuel	Btus per Gallon
Ethanol	76,000
LNG	77,000
Propane	92,500
Biodiesel	120,000
Gasoline	125,000
Diesel	139,000
Marine HFO	149,700

Although LNG is less energy-dense, it has three advantages over other transportation fuels: it is relatively cheap, abundant in the U.S., and cleaner than petroleum-based fuels. At current market prices, a million Btus of crude oil costs $12.89, compared to $3.62 for natural gas.[4] Refining and liquefaction add additional costs to providing usable fuel for consumers.

PSE's planned facility will sell LNG as a replacement for marine heavy fuel oil (HFO) used in large marine vessels. HFO is also known as bunker or residual fuel. The company will also sell LNG as a replacement for truck and marine diesel.

While there is an emerging market for LNG for these purposes, it is still relatively small and its growth limited by high equipment costs. Over time, however, more companies will shift to LNG for the long-term benefits of lower fuel costs and the security of having a stable and abundant supply. Also, tougher environmental regulations will accelerate the adoption of LNG as companies look for cost-effective alternatives to more polluting diesel and HFO.

According to PSE's estimate their plant will produce 15.7 million gallons of LNG, which will replace 8.7 million gallons of common diesel fuel. Another 65.0 million gallons of LNG will replace 33.4 million gallons of marine HFO (Table 2).

Table 2: LNG Facility Annual Production

Annual LNG Production	Gallons of LNG	Dekatherms	Gallons of Petroleum Products Replaced
Peak shaving	6,300,000	485,100	none
Diesel fuel replacement	15,700,000	1,208,900	8,697,122
HFO marine fuel replacement	65,000,000	5,005,000	33,433,534
Total Annual Production	87,000,000	6,699,000	-

6,300,000 ÷ 87,000,000 = .07%

[4] *Bloomberg, prices on October 24, 2014, WTI crude at $81.01 a Bbl and NYMEX natural gas at $3.62.*