EXHIBIT NO. ___(CR-1~~H~~CT)
DOCKET NO. UG-151663
WITNESS: CLAY RIDING

BEFORE THE
WASHINGTON UTILITIES AND TRANSPORTATION COMMISSION

In the Matter of the Petition of **PUGET SOUND ENERGY, INC.** **for (i) Approval of a Special Contract for Liquefied Natural Gas Fuel Service with Totem Ocean Trailer Express, Inc. and (ii) a Declaratory Order Approving the Methodology for Allocating Costs Between Regulated and Non-regulated Liquefied Natural Gas Services**	**DOCKET NO. UG-151663**

PREFILED DIRECT TESTIMONY (~~HIGHLY~~ CONFIDENTIAL) OF CLAY RIDING ON BEHALF OF PUGET SOUND ENERGY, INC.

REDACTED VERSION

~~**AUGUST 11, 2015**~~
REVISED SEPTEMBER 23, 2015

PUGET SOUND ENERGY, INC.

PREFILED DIRECT TESTIMONY (~~HIGHLY~~ CONFIDENTIAL) OF CLAY RIDING

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PUGET SOUND ENERGY INC.

PREFILED DIRECT TESTIMONY (~~HIGHLY~~ CONFIDENTIAL) OF CLAY RIDING

I. INTRODUCTION

Q. Please state your name, business address, and occupation.

A. My name is Clay Riding. My business address is 10885 NE 4th Street, P.O. Box 97034, Bellevue WA 98009-9734. I am employed by Puget Sound Energy, Inc. ("PSE") as the Director of Natural Gas Resources.

Q. Have you prepared an exhibit describing your education, relevant employment experience, and other professional qualifications?

A. Yes, I have. It is Exhibit No. ___(CR-2).

Q. What are some of your duties as Director of Natural Gas Resources?

A. My present responsibilities include oversight of: (i) the acquisition and management of long-term natural gas pipeline and storage resources for PSE; (ii) contracts for long-term natural gas supply and negotiation of enabling agreements for gas and power; (iii) regulatory matters involving U.S. and Canadian natural gas pipelines; (iv) commercial development of the Tacoma LNG Project; and (v) the management and operation of the Jackson Prairie underground storage facility.

Q. Please summarize the purpose of your prefiled direct testimony.

A. This prefiled testimony provides each of the following:

1. a description of the determination of need for a cost-effective natural gas peaking resource, the evaluation of alternative resources and a financial analysis of the selected cost-effective peaking resource;

2. a description of the LNG Fuel Supply Agreement with Totem Ocean Trailer Express, Inc. ("TOTE") (the "TOTE Special Contract"); and

3. a description of the natural gas supply for the Tacoma LNG Facility; and

4. a description of the costs incurred during the operations of the facility and the allocation of those costs amongst plant customers.

Q. What does PSE mean when it refers to the "Tacoma LNG Facility"?

A. PSE uses the term "Tacoma LNG Facility" to refer to the following:

- buildings, gas processing, storage and support equipment, and foundations located on PSE's leased site at the Port of Tacoma;
- underground LNG fuel line connecting the LNG tank to TOTE's berthing area, marine fueling system and in-water platform at TOTE's site;
- LNG tanker truck loading racks; and
- the ground lease from the Port of Tacoma.

Q. What does PSE mean when it refers to the "Tacoma LNG Project"?

A. PSE uses the term "Tacoma LNG Project" to refer to the following:

- the development, construction and operations of the Tacoma LNG Facility;

- improvements to PSE's gas distribution system needed to support the Tacoma LNG Facility;

- regulatory approvals to provide the following regulated services:

  (i) the operation of the Tacoma LNG Facility to provide additional peaking capability for PSE's core gas customers;

  (ii) the operation of the Tacoma LNG Facility to provide LNG to TOTE for use as a marine fuel; and

- commercial contracts to sell LNG to non-TOTE customers for use as fuel as a non-regulated service.

II. DETERMINATION OF NEED, EVALUATION OF ALTERNATIVES, AND FINANCIAL ANALYSIS

A. Resource Need

Q. How does PSE define its natural gas resource need?

A. PSE defines its natural gas resource need as the design peak demand of its retail sales customers less the existing portfolio resources available to meet such demand. Each Integrated Resource Plan ("IRP") includes an updated long-term forecast of customer demand, based on existing customer count, use per customer trends, temperature response and economic conditions in the service area. PSE determines resource need by comparing this forecast to existing resources, including firm pipeline capacity contracts, gas storage and other peaking resources that PSE controls and expects to maintain.

PSE then compares potential new resources, both demand- and supply-side, to determine the least-cost (adjusted for risk) resources to serve the future needs of

its customers. New supply-side resources may be hypothetical or conceptual, and lack specific site-driven or detailed cost estimates, but inclusion of such resources is intended to guide the company toward further evaluation of promising alternatives. PSE then performs further analysis of specific resources with known contractual terms or more detailed cost estimates to confirm the cost-effectiveness of the resource prior to an acquisition decision.

Q. Please describe PSE's gas supply resources.

A. PSE's largest gas supply resource is transported on firm pipeline capacity on Williams-Northwest Pipeline ("NWP") with a total of 532.9 MDth/day of capacity to PSE's service territory. About half of the gas supply moved on NWP capacity is from British Columbia and about half of the gas supply is from Alberta and the Rockies.

PSE also owns and contracts for Jackson Prairie natural gas storage service, which is delivered to PSE's service territory via firm NWP redelivery pipeline capacity; Jackson Prairie provides peak-supply resources of 447 MDth/day. Some of the Jackson Prairie capacity has been reserved for PSE's power portfolio through the 2014-2015 winter period. The full capacity will be returned to the natural gas retail sales portfolio in November 2015.

PSE owns and controls two small, on-system supply resources: (i) an LNG satellite peaking facility located near Gig Harbor with vaporization capacity of 2.5 MDth/day that serves peak-loads in the Gig Harbor area; and (ii) biogas (approximately 0.5 MDth/day) purchased from King County's waste water

treatment plant in Renton. The biogas agreement is expected to be terminated prior to the winter of 2015-2016.

In addition to the Tacoma LNG Facility, PSE will acquire short-term parcels of NWP pipeline capacity to manage deficits.

Q. In what IRP process did PSE identify a need and identify the Tacoma LNG Project as a potential resource to meet that need?

A. The 2013 IRP identified sufficient peak resources for PSE to meet peak day need until the winter of 2016-17 and a need for additional peak day resources beginning in the winter of 2017-18. Please see Exhibit No. ___(CR-3), which is identical to Figure 6-1 from the 2013 IRP, for a depiction of PSE's need identified in the 2013 IRP.

Q. Please describe the natural gas resources selected in PSE's 2013 IRP.

A. The 2013 IRP identified a regional LNG peaking plant (titled PSE LNG Peaking Project) in the gas resource plan. That plant was found to be cost effective, along with demand-side resources, upgrades to PSE's Swarr Propane-Air Facility, and Mist Storage expansion by 2018-19. Figure 1, which is identical to Figure 1-8 of the 2013 IRP, identified the resources identified in the gas resource plan for the 2013 IRP.

Figure 1. Gas Resource Plan, Cumulative Additions in MDth/Day of Capacity (Figure 1-8 from 2013 IRP)

Resource	2018-2019	2022-2023	2027-2028	2032-2033
Demand-Side Resources	15	28	33	37
PSE LNG Peaking Project	50	50	50	50
Swarr Upgrade	30	30	30	30
Mist Storage Expansion	50	50	50	50
NWP/Westcoast Expansion	0	54	150	150
NWP/KORP Expansion	0	0	0	78

Q. Does the Tacoma LNG Facility continue to be a resource in PSE's least-cost portfolio beginning in 2018-2019?

A. Yes. The current draft IRP analysis is showing the Tacoma LNG Facility as resource in the least cost portfolio starting in 2018-2019.

B. Peak-Day Resource Cost and Assumptions

Q. Did PSE consider the costs of the Tacoma LNG Project to PSE gas customers?

A. Yes. PSE considered the costs of the Tacoma LNG Project to PSE gas customers by examining the revenue requirement of the Tacoma LNG Facility and the supporting upgrades to PSE's natural gas distribution system along with the revenue contribution from TOTE and contributions made from non-regulated fuel sales for transportation across PSE's natural gas distribution system.

Q. What is the total peak-day capacity of the Tacoma LNG Facility by Winter 2021-2022?

A. The total peak-day capacity of the Tacoma LNG Facility is 85 MDth/day. This includes 66 MDth/day of gas injection from the Tacoma LNG Facility and up to 19 MDth/day of diverted gas that can be delivered to any PSE gate station on the NWP system.

Figure 2 below summarizes the peak-day resource capacity of the Tacoma LNG Facility.

Figure 2. Peak Capacity Resources Added by Winter 2021 to 2022 – MDth/day

		MDth	LNG Gallons
	Injection Capacity		
[1]	Daily Plant Injection Capacity	66	772,807
[2]	Tank Capacity for Plant Injection (6+ Day Period)	416	4,876,126
	Diverted Gas Capacity		
[3]	Retail LNG Customers Daily Liquefaction	19	225,667
[4]	Tank Capacity for Diverted Gas (6+ Day Period)	122	1,423,874
	Other		
[5]	Additional Liquefaction for Gig Harbor	23	270,000
[6]	**Total Peak Day Capacity ([1]+[3])**	85	998,473
[7]	**Total LNG Tank Storage Capacity ([2]+[4])**	561	6,300,000
[8]	**Daily Liquefaction Capacity ([2]+[4]+[5] / 270 Days)**	2	24,333

a. Plant Injection Capacity

Q. Please describe the plant injection capacity of the Tacoma LNG Facility

A. The Tacoma LNG Facility will be equipped with vaporizers capable of gasifying and injecting natural gas into PSE's natural gas distribution system at a rate of 66 MDth/day. Natural gas will be injected directly into PSE's high pressure gas

system at the Tacoma LNG Facility. To supply the vaporized gas, PSE will reserve approximately 4.9 million gallons (or 416 MDth) of the onsite storage tank capacity. This storage will allow the Tacoma LNG Facility to supply 66 MDth/day for more than six days.

b. Diverted Gas Capacity

Q. Please describe the diverted gas capacity of the Tacoma LNG Facility

A. PSE will procure up to 19 MDth/day of year-round pipeline capacity for the Tacoma LNG Facility's LNG fuel customers. Since the Tacoma LNG Facility will not liquefy natural gas at the same time it is vaporizing gas into the system, PSE will utilize this pipeline capacity and natural gas supply as an additional peaking resource. In order to continue to serve the other LNG fuel sales customers, PSE will hold 1.4 million gallons (or 122 MDth) of additional tank capacity and serve the LNG fuel customers from this capacity during a vaporization event. This allows PSE to divert the LNG fuel customers' 19 MDth/day to peak system use for delivery to city gates across the PSE system. Note that the LNG fuel customers will be paying for one hundred percent (100%) the natural gas and related transportation capacity and will be receiving uninterrupted LNG service. Furthermore, PSE will not be paying for the diverted natural gas supply or associated transportation capacity.

c. Optimizing Peak Resource Capacity

Q. How does PSE project that it will manage the capacity of the Tacoma LNG Facility?

A. PSE projects that it will fill the portion of the tank associated with the peaking resource at the Tacoma LNG Facility over a 270-day period using PSE's reserved liquefaction capacity. During the winter months, PSE's liquefaction capacity can be sold on a short-term basis for the benefit of PSE core gas customers.

In the event that this resource is not fully called upon over the course of a given winter season, PSE can sell unutilized liquefaction capacity under short-term contracts for the following non-winter period (up to 270 days) to the economic benefit of PSE's core gas customers. The value associated with selling such underutilized LNG capacity is not considered in PSE's IRP or other analyses.

Q. Has PSE considered a projected revenue requirement for the Tacoma LNG Project?

A. Yes. PSE has considered a projected revenue requirement for the Tacoma LNG Project that consists of (i) Tacoma LNG Facility costs (return on and of the asset); (ii) incremental fixed and variable O&M costs as well as property taxes related to the Tacoma LNG Facility; and (iii) the cost of upgrades to PSE's natural gas distribution system. The cost of the peaking resource to PSE gas customers will be offset by revenue paid by TOTE under the TOTE Special Contract.

Q. Please describe the commercial structure of the Tacoma LNG Project as it relates to allocation of incremental costs to core gas customers.

A. The commercial scenario assumes that the Tacoma LNG Facility has a liquefaction capacity of 250,000 gallons/day of LNG and 8 million gallons of storage capacity. A certain portion of the plant and pro rata costs will be allocated to regulated service, with the balance of the plant and associated costs allocated to a non-regulated service. Specifically, the costs associated with the peaking resource (24,333 LNG gallons per day and 6.3 million gallons of storage capacity) and TOTE service (111,046 LNG gallons per day and 500,000 gallons of storage capacity) will be allocated to the regulated service, while costs associated with the remaining available service (114,621 gallons per day of LNG and 1.2 million gallons of storage capacity) will be allocated to the non-regulated service. Please see the last section of this testimony as well as the Prefiled Direct Testimony of Roger Garratt, Exhibit No. ___(RG-1CT), and the Prefiled Direct Testimony of Susan E. Free, Exhibit No. ___(SEF-1T), for a discussion of the methodology for the allocation of costs between regulated service and non-regulated service.

Q. Please describe how the incremental costs for core gas customers is calculated.

A. The costs borne by core gas customers will be equal to the revenue requirement to cover the cost of the peaking resource plus the attributable cost of the upgrades to the natural gas distribution system, less any revenues from TOTE that are above the incremental cost of service to serve TOTE, and less any incremental revenues for distribution service from TOTE fuel sales or non-regulated fuel sales.

C. Alternative Resources and Assumptions

1. Comparison to Incremental Pipeline Capacity Alternative

Q. Please describe the incremental pipeline capacity alternative considered by PSE?

A. The peaking costs of the Tacoma LNG Facility are benchmarked against the costs of incremental interstate pipeline capacity. There is a fair amount of uncertainty in the firm cost of capacity on the NWP and Westcoast pipeline systems due to projected new demand coming online in the near future, particularly LNG projects in the Vancouver, BC area. NWP has long been fully contracted and Westcoast is now fully contracted; therefore, acquiring sizeable volumes of long-term pipeline capacity on either system would require an expansion.

In order to calculate benchmark pipeline costs, PSE used the pipeline costs assumptions presented in Figure 4.

Figure 4: Pipeline Cost Assumptions

NWP Costs ($/Dth/Day):	$0.56
Westcoast Pipeline Costs ($/Dth/Day):	$0.52
Westcoast Capacity (% of Firm):	100%

Q. What other assumptions did PSE consider with respect to incremental pipeline capacity?

A. PSE also applied a one and one-quarter percent (1.25%) inflation rate to pipeline costs.

Q. Please describe the NWP cost assumption.

A. The NWP year-round firm shipping costs assume a 2015 expansion equal to the volumes under consideration, escalated annually.

Q. Please describe the Westcoast Pipeline cost assumption.

A. Spectra's Westcoast pipeline delivers gas from producing fields and processing plants in northern British Columbia to NWP near Sumas, Washington. The cost estimate is based on 2015 tolls and escalates annually.

Q. Please describe the Westcoast Pipeline capacity assumption.

A. Recently, PSE's Energy Management Committee approved a strategy to purchase Westcoast capacity for up to one hundred percent (100%) of PSE's peak-day Sumas/Huntingdon supply requirements, given the projected increase in demand in the Vancouver, BC area and considering that Westcoast is now fully contracted. Therefore, PSE is assuming that it will contract for one hundred percent (100%) of the demand requirement on Westcoast.

Q. Please describe the pipeline escalator assumption.

A. The pipeline escalator assumption represents an annual average increase in pipeline tariff rates (commensurate with PSE's IRP assumptions).

2. Other Additional Advantages of On-System LNG Storage

Q. Are there any other advantages of having on-system LNG storage?

A. Yes, although the analyses detailed above simply compare the costs of the Tacoma LNG Facility to long-haul natural gas transportation capacity, without

regard to the advantages of on-system LNG storage. The primary advantage of on-system LNG storage is that it provides physical natural gas. In contrast, pipeline capacity only provides the physical capacity to deliver sufficient quantities of natural gas to PSE's system. It does not include the actual natural gas supply, which would have to be purchased independently. Depending on perceived market constraints, the natural gas supply purchase might be arranged in advance through the purchase of a winter, peak-day call option, or on the spot market, if available, at the then current premium price, when the supply is needed. PSE, however, does not generally rely on spot market availability for firm natural gas supply requirements.

Another advantage of having the on-system LNG storage provided by the Tacoma LNG Facility is that it reduces reliance on PSE's sole-source pipeline, NWP, and would provide natural gas supply during times of regional supply disruption. Further, an on-system facility increases the underlying capacity of the adjoining distribution system for peak-day service. Finally, the on-system storage offered by the Tacoma LNG Facility will provide infrastructure to serve developing natural gas transportation fuel markets.

III. TOTE SPECIAL CONTRACT

A. Overview

Q. Please describe the TOTE Special Contract.

A. The TOTE Special Contract is the agreement pursuant to which PSE will provide LNG fuel supply service to TOTE. Please see Exhibit No. ___(CR-4~~H~~C) for a

copy of the TOTE Special Contract. TOTE selected PSE pursuant to a competitive bidding process to provide LNG as marine fuel for use in two Tacoma, Washington-based Orca-class cargo ships. PSE will provide TOTE fuel for ships that are being converted from diesel to cleaner-burning LNG. Using LNG will allow TOTE to exceed new, stricter emission standards in the maritime shipping industry.

Q. What is the term of the TOTE Special Contract.

A. The initial term of the TOTE Special Contract is 10 years, beginning on January 1, 2019 and terminating on December 31, 2028. TOTE has the unilateral right to extend the TOTE Special Contract in five-year increments with 18 months' notice. Extension term pricing contains favorable terms for three successive extension periods, recognizing that TOTE will have paid a short-term contract premium during the initial 10-year term. *See* Exhibit No. ___(CR-4~~H~~C) at page 22.

Q. Please describe the pricing under the TOTE Special Contract.

A. PSE will provide pricing under the TOTE Special Contract using a cost-of-service model, with demand and variable components, and including overhead allocations. Typical cost-of-service ratemaking applies, with the following exceptions:

- TOTE will be charged a levelized premium to compensate for a ten-year contract term (the "short-term contract premium").

- Pricing will be subject to [redacted]. Please see the following section of this testimony for further explanation of [redacted].
- [redacted].

See Exhibit No. ___(CR-4~~H~~C) at pages 43-47. Finally, natural gas and electricity costs will be passed through to TOTE at market rates. Natural gas will be tied to the Sumas index and electricity will be tied to the Mid-C index. PSE will purchase and deliver the natural gas to the Tacoma LNG Facility. *See id.*

Q. [redacted]**?**

A. Yes. In order to compete with other regional LNG suppliers, [redacted]. PSE's LNG fuel pricing to TOTE under the TOTE Special Contract is provided under a cost-of-service model, and the LNG fuel price will increase as the actual cost of the Tacoma LNG Facility increases [redacted].

[redacted]. [redacted]

[redacted].

TOTE will be allocated one hundred percent (100%) of the cost of the bunkering facilities and will be credited when PSE makes non-regulated fuel sales to third parties using the bunkering facilities. Since the cost of the bunkering facilities and any credit from non-regulated fuel sales are included in [redacted], TOTE's net cost will change depending on the volume of non-regulated sales.

Figures 5 and 6 show the [redacted] and expected pricing over the TOTE Special Contract term assuming two different sales forecasts for non-regulated fuel sales. Figure 5 shows the expected pricing assuming the non-regulated fuel sales follow a forecast that is based on the Concentric Energy Advisors market study.

Figure 5. TOTE [redacted] and Estimated Pricing of Fixed Contract Components (Based on Concentric Energy Advisors Market Study)

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Please see the Prefiled Direct Testimony of Melissa F. Bartos, Exhibit No. ___(MFB-1T), and supporting exhibits thereto, for a the Concentric Energy Advisors market studies. Figure 6 shows the expected pricing assuming the non-regulated capacity is fully subscribed.

Figure 6. TOTE [redacted] and Estimated Pricing of Fixed Contract Components (Fully Subscribed Forecast)

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Note that the short-term premium is the amount PSE is collecting over the traditional cost-of-service rate, due to the shorter initial term of the TOTE Special Contract as compared to the Tacoma LNG Facility's depreciable life (i.e., 25 years). The short-term premium accrues to the benefit of PSE's core natural gas customers. In both scenarios shown above, [redacted]. Revenues under the TOTE Special Contract will still cover the incremental cost-of-service for the portion of the LNG Facility allocated to TOTE in these years.

Q. Are there any conditions precedent in the TOTE Special Contract?

A. Yes. The TOTE Special Contract includes the following conditions precedent that must be met by January 1, 2017:

- receipt of all permits and regulatory approvals that are necessary for PSE to construct and operate the Tacoma LNG Facility;
- execution of a binding ground lease at the Port of Tacoma for the site on which the Tacoma LNG Facility will be constructed;
- execution of a binding fixed-priced, turn-key, engineering, procurement and construction contract under which a contractor will carry out engineering, procurement, and construction activities with respect to the Tacoma LNG Facility (the "EPC Contract") at a cost that does not exceed 110% of an August 2013 cost estimate; and
- receipt of approval to provide the LNG fuel service by the Washington Utilities and Transportation Commission.

See Exhibit No. ___(CR-4~~H~~C) at pages 22-25.

Q. What are the annual contract quantities associated with the TOTE Special Contract?

A. Estimated contract quantities are [redacted] barrels of oil equivalent ("BOE")[1] annually under the TOTE Special Contract. This is equivalent to approximately [redacted] gallons of LNG.

[1] The TOTE Special Contract defines a BOE as "a unit of energy that is equivalent to 5.98374 MMBtus measured using the low heating value; the amount of energy in one barrel of IFO-380 based on the low heating value." Exhibit No. ___(CR-3HC) at page 9.

After the first year of operation, TOTE has the right to modify the annual contract quantity by [redacted], up or down, to reflect actual consumption. After the first year, TOTE anticipates an annual variance of [redacted]. If TOTE fails to take [redacted] of the annual contract quantity, deficiency payments apply to allow PSE to recover charges not collected through demand charge components. If TOTE takes more than [redacted] of the annual contract quantity, additional demand charges apply. If TOTE exceeds [redacted] of the annual contract quantity [redacted], PSE has the right to increase the annual contract quantity to reflect the increased consumption. *See* Exhibit No. ___(CR-4~~H~~C) at pages 29-31.

Q. Does the TOTE Special Contract subject PSE to potential payments to TOTE in the event the Tacoma LNG Project is delayed?

A. Yes. PSE will be subject to payments to TOTE if PSE cancels the Tacoma LNG Project for any reason or does not commence service at the Tacoma LNG Facility by January 1, 2019. In such instance, PSE will make monthly payments, for a period of up to [redacted] (through [redacted]), in the amount of [redacted], based on an annual consumption of [redacted] BOE per year (maximum of [redacted]). *See* Exhibit No. ___(CR-4~~H~~C) at pages 25-26.

Q. Does the TOTE Special Contract contain provisions that would apply during periods of force majeure?

A. Yes. In the event of an event of force majeure that prevents PSE from delivering LNG to TOTE, TOTE will continue to pay demand charges during the first [redacted] of the force majeure event (after which demand charges are suspended), and the TOTE Special Contract will be extended for a period equal to the duration of the force majeure event, with demand charges applying during the extended period. No damages apply.

If an event of force majeure prevents TOTE from accepting deliveries of LNG from PSE, TOTE will continue to pay demand charges during the duration of the force majeure event, and the TOTE Special Contract will be extended for a period equal to the duration of the force majeure event, with no demand charges applying during the extended period. No damages apply.

Q. Is PSE liable under the TOTE Special Contract for any failure to deliver LNG to TOTE for reasons other than a force majeure event?

A. Yes. If PSE were to fail to supply LNG to TOTE for any reason other than a force majeure event, then the TOTE Special Contract requires PSE to pay for the incremental cost of replacement fuel subject to certain limits [redacted]. TOTE would continue to pay [redacted].

If PSE were to elect to serve PSE's core natural gas customers rather than to deliver LNG to TOTE, then PSE must pay [redacted] to TOTE.

Q. Is PSE liable under the TOTE Special Contract for the delivery of off-specification LNG to TOTE?

A. Yes. PSE will be liable for damages to TOTE's engine/ship in the unlikely event that PSE were to deliver off-specification LNG that is found to cause such damage. [redacted].

Q. Please describe the oil price triggers contained in the TOTE Special Contract.

A. TOTE has the right to terminate the TOTE Special Contract if [redacted]. Please see the Prefiled Direct Testimony of Dr. Harold "Skip" York, Exhibit No. ___(HSY-1T), for further information regarding commodity market dynamics and the factors [redacted].

B. Short-Term Supply Agreement

Q. Please describe the Short-Term LNG Supply Agreement.

A. In addition to the TOTE Special Contract, PSE will provide LNG to TOTE under a Short-Term LNG Supply Agreement. PSE will help to facilitate the supply but will not take on any contract risk related to the delivery of the supply. The Short-Term Supply Agreement is being developed with counterparties that can supply LNG and handle delivery logistics.

Q. What is the current proposal for supply of LNG to TOTE under the Short-Term Supply Agreement?

A. The current proposal for short-term supply contains the following provisions:

(i) **Supply**. PSE will supply natural gas to FortisBC at its Tilbury or Mt. Hayes LNG Facilities in British Columbia to produce LNG.

(ii) **LNG Logistics.** PSE will contract with FortisBC to provide container handling and bulk loading services (Logistic Services) to move the LNG from its LNG facilities onto the LNG barge.

(iii) **Shipping/Bunkering.** TOTE will contract with third parties for barge and bunkering services to transit the LNG from British Columbia to Tacoma.

(iv) **Pricing.** TOTE will pay PSE for the full cost of natural gas supply and the charges from FortisBC for liquefaction and Logistic Services associated with the provision of LNG under the Short-Term Supply Agreement for a three-year term. Natural gas charges will be based on the monthly Sumas index.

(v) **Contracting.** The Short-Term LNG Supply contract with TOTE will pass through all costs and risks to TOTE.

IV. NATURAL GAS SUPPLY FOR PRODUCTION OF LNG

Q. Please describe the natural gas supply for production of LNG at the Tacoma LNG Facility.

A. PSE will supply the natural gas required for production of LNG for PSE's peaking need and to satisfy TOTE's needs under the Special Contract. The Tacoma LNG Facility will require nearly 21,000 MMBtu per day of natural gas when liquefying at nameplate capacity. Approximately 2,000 MMBtu per day will be used for the peaking resource and up to 19,000 MMBtu per day will be used to supply TOTE fuel sales and any non-regulated fuel sales. While not insignificant, the Tacoma LNG Facility demand is modest relative to PSE's total supply portfolio and the regional natural gas market—it would represent approximately seven and one-half percent (7.5%) of PSE's average daily demand, but only two percent (2%) of PSE's peak-day demand; and only nine-tenths of one percent (0.9%) of the region's average daily demand and three-tenths of one percent (0.3%) of the region's peak-day demand. Sufficient natural gas supply will be readily available to serve the Tacoma LNG Facility and the regions' needs.

PSE will not require firm pipeline capacity for the peaking portion of the Tacoma LNG Facility, since LNG will be produced for peak-day storage requirements in the non-winter months when PSE generally has pipeline capacity available. PSE will procure firm pipeline capacity and natural gas supply for LNG service to be provided under the TOTE Special Contract. TOTE opted to purchase a fully bundled LNG service from

PSE under its Special Contract and TOTE will therefore pay for one hundred percent (100%) of the firm interstate pipeline cost to provide that service.

TOTE will be charged a market-based price for natural gas (based on the monthly Sumas index). Natural gas volumes billed to TOTE under the Special Contract will include natural gas that is used as 'plant fuel' for pipeline transportation and processes at the Tacoma LNG Facility.

V. OPERATIONAL COSTS AND ALLOCATIONS ASSOCIATED WITH THE TACOMA LNG FACILITY

Q. Please describe the allocation of costs and revenues associated with operations of the Tacoma LNG Facility.

A. As discussed in the Prefiled Direct Testimony of Susan E. Free, Exhibit No. ___(SEF-1T), PSE will allocate costs and revenues associated with the Tacoma LNG Facility operations pursuant to the current cost allocation methodology approved by the Commission in Docket Nos. UE-960195 and U-072375. This existing approved cost allocation methodology is sufficient for use in allocating the costs of the Tacoma LNG Facility.

A. Operational Cost Allocators

Q. Please describe allocators that will be used to assign costs to customers of the Tacoma LNG Facility.

A. To the extent possible, PSE will direct assign operational costs to customers based on their utilization of the services of the Tacoma LNG Facility. When it is not

possible to direct assign operational costs, the costs will be allocated to facility services based on the drivers of those costs. For example, plant electricity consumption is almost entirely driven by the cost to run compressors needed to liquefy the gas. Therefore, variable electric costs will be allocated based on LNG volumes that are liquefied over a certain period.

Q. Are there allocators used to assign operational costs that are not used in the allocation of capital costs (as described in the Prefiled Direct Testimony of Roger Garratt, Exhibit No. ___(RG-1CT))?

A. Yes, there are three other allocations used for operational costs that are not used to allocate capital costs. These allocations will be used to allocate variable costs that are driven by LNG volumes as well as fixed electric costs that are driven by peak facility output during operations.

1. Wharfage Allocator

Q. Please describe the wharfage allocator.

A. Wharfage is a volumetric fee assessed by the Port of Tacoma for liquid product moved through the Port. This fee will be assessed on LNG leaving the plant in its liquid state, through either the truck loading racks or bunkering facilities. Wharfage costs will be allocated to customers based on their actual volumes moved through the truck loading or bunkering facilities.

	Projected Volumes Moved through Truck Loading or Bunkering (million LNG gallons/year)	Projected Wharfage Allocation Percentage
Peak Shaving	0	0%
TOTE Fuel Sales	40	49%
Non-regulated Fuel Sales	41	51%
Total	**81**	**100%**

PSE will utilize the truck loading service to move LNG to the Gig Harbor satellite facility to support peak shaving and will therefore be required to pay for wharfage on those volumes. However, these volumes do not register on the table above as they are negligible when compared to the volumes moved by TOTE and the non-regulated fuel sales over the bunkering and truck loading facilities.

2. LNG Volumes Allocator

Q. Please describe the LNG volumes allocator.

A. PSE will use the LNG volumes allocator to allocate costs that are driven by liquefier utilization. The LNG volumes allocator is different than the liquefaction allocator described in the Prefiled Direct Testimony of Roger Garratt, Exhibit No. ___(RG-1CT), which allocates costs based on capacity subscription to the liquefaction service. The LNG volumes allocator accounts for the actual volumes liquefied for each customer over a given period. It is calculated for each customer as LNG gallons produced for that customer in that period divided by the total LNG gallons produced in that period. This allocator will change from period to

period based on customers volumes in that period. PSE will use the LNG volumes allocator to allocate electric costs and plant consumables.

3. Annual Capacity Allocator

Q. Please describe the annual capacity allocator.

A. PSE will use the annual capacity allocator to allocate fixed electric costs that are driven by liquefaction capacity but that may be adjustable over longer period of time. PSE will calculate the annual capacity allocator for each customer by calculating the forecasted maximum daily capacity for a year, divided by the total forecasted capacity for that year.

B. Allocation of Incremental Costs

Q. Please describe the incremental costs PSE will incur by operating the Tacoma LNG Facility and the allocations used to allocate these costs to customers.

A. PSE has identified the following categories of operational expenses associated with the project:

(i) plant consumables;

(ii) maintenance;

(iii) staffing;

(iv) incremental insurance;

(v) lease;

(vi) bunkering station operational costs;

(vii) fixed electric costs;

(viii) variable electric costs;

(ix) Port of Tacoma volumetric charges; and

(x) general corporate overheads.

1. Plant Consumables

Q. Please describe the plant consumables category and how PSE will allocate the costs associated with such category.

A. The plant consumables category include the nitrogen and other compounds used to treat and cool the natural gas. Plant consumables are driven by the liquefaction process and will be allocated to customers based on the LNG volumes allocation.

2. Maintenance

Q. Please describe the maintenance category and how PSE will allocate the costs associated with such category.

A. The maintenance category encompasses all maintenance cost other than consumables and labor. These costs include replacement parts and paying for outside service providers to perform maintenance on the Tacoma LNG Facility components or grounds. Maintenance that is attributable to equipment that is specifically used for a particular service will be allocated to customers based on the use of that service. Any other maintenance costs will be allocated to customers using the total capital allocator discussed in the Prefiled Direct Testimony of Roger Garratt, Exhibit No. ___(RG-1CT).

3. Staffing

Q. Please describe the staffing category and how PSE will allocate the costs associated with such category.

A. The staffing category includes the salaries and overhead for Tacoma LNG Facility staff, which are expected to be fulltime, incremental PSE employees. PSE anticipates sixteen employees dedicated to the Tacoma LNG Facility, which includes ten gas operators, a plant manager, a plant engineer, a maintenance supervisor, a maintenance planner, a controls technician and an administrator. The U.S. Coast Guard and the Department of Homeland Security will likely require manned security at the Tacoma LNG Facility at all times, and PSE will likely contract with a service provider for security services. To the extent possible, staff salaries will be assigned directly to services and allocated to customers based on utilization of those services. For staff time that cannot be directly assigned, PSE will use the total capital allocator.

4. Incremental Insurance

Q. Please describe the incremental insurance category and how PSE will allocate the costs associated with such category.

A. PSE will see an incremental increase in insurance general premiums as well as costs associated with new coverages related to operations at the Tacoma LNG Facility. PSE will allocate these incremental increases based on the total capital allocator.

5. Lease

Q. Please describe the lease category and how PSE will allocate the costs associated with such category.

A. The Tacoma LNG Facility will be located on land that is under a long-term lease with the Port of Tacoma. All customers will pay an allocable share of the lease payments based on the total capital allocator.

6. Bunkering Station Operational Costs

Q. Please describe the bunkering station operational costs category and how PSE will allocate the costs associated with such category.

A. Costs associated with the bunkering station operational costs category include any fees that PSE pays the Port of Tacoma for real estate rights necessary to provide the bunkering services, as well as other miscellaneous costs needed to support the bunkering service. PSE will directly charge bunkering station operational costs to customers based on utilization of the bunkering service.

7. Fixed Electric Costs

Q. Please describe the fixed electrical costs category and how PSE will allocate the costs associated with such category.

A. Fixed electric costs will be comprised of fixed payments to Tacoma Power for providing electric service to the Tacoma LNG Facility. Because liquefaction processes account for the vast majority of electricity consumed at the plant, PSE will allocated fixed electric costs based on the annual capacity allocator.

8. Variable Electric Costs

Q. Please describe the variable electrical costs category and how PSE will allocate the costs associated with such category.

A. Electricity is the largest operating cost for the Tacoma LNG Facility. Electricity will be provided by Tacoma Power, and volumetric charges will be assessed at a rate derived from the Mid-C market price. PSE will allocate variable electric costs based on the LNG volumes allocator.

9. Port of Tacoma Volumetric Charges

Q. Please describe the Port of Tacoma volumetric charges category and how PSE will allocate the costs associated with such category.

A. The Port of Tacoma charges a fee for any commodity that is moved through the Port. The Port of Tacoma will assess a fee of $0.085 per volumetric barrel, subject to annual increases by CPI-U. The Port of Tacoma also reserves the right to develop a Port of Tacoma tariff for LNG that may be substituted in lieu of this charge. PSE will assign Port of Tacoma charges based on the wharfage allocation.

10. General Corporate Overheads

Q. Please describe how PSE will allocate the costs associated with general corporate overheads.

A. PSE will allocate costs associated with the general corporate overheads of PSE based on labor directly charged or allocated below the line, using Commission-approved methodologies. Please see the Prefiled Direct

Testimony of Susan E. Free, Exhibit No. ___(SEF-1T), and the Prefiled Direct Testimony of Jon A. Piliaris, Exhibit No. ___(JAP-1T), for a discussion of how PSE will allocate these costs.

VI. CONCLUSION

Q. Does this conclude your prefiled direct testimony?

A. Yes.