

**EXH. PKW-21C
DOCKET UE-20____
2020 PSE PCORC
WITNESS: PAUL K. WETHERBEE**

**BEFORE THE
WASHINGTON UTILITIES AND TRANSPORTATION COMMISSION**

**WASHINGTON UTILITIES AND
TRANSPORTATION COMMISSION,**

Complainant,

v.

PUGET SOUND ENERGY,

Respondent.

Docket UE-20____

**TWENTIETH EXHIBIT (CONFIDENTIAL) TO THE
PREFILED DIRECT TESTIMONY OF**

PAUL K. WETHERBEE

ON BEHALF OF PUGET SOUND ENERGY

**REDACTED
VERSION**

DECEMBER 9, 2020

**Puget Sound Energy
Distillate Fuel Incremental Costs**
2020 PCORC

Shaded information is designated as confidential per WAC 480-07-160

	Jun-21	Jul-21	Aug-21	Sep-21	Oct-21	Nov-21	Dec-21	Jan-22	Feb-22	Mar-22	Apr-22	May-22	2020 PCORC	2019 GRC Final Order	Increase/ (Decrease)
Frederickson 1 & 2	\$0	\$0	\$0	\$0	\$0	\$31,827	\$31,827	\$31,827	\$31,827	\$31,827	\$0	\$0	\$159,136	\$159,279	(\$143)
Fredonia 1 & 2	\$0	\$0	\$0	\$0	\$0	\$49,901	\$49,901	\$49,901	\$49,901	\$49,901	\$0	\$0	\$249,504	\$251,939	(\$2,435)
Fredonia 3 & 4	\$0	\$0	\$0	\$0	\$0	\$22,622	\$22,622	\$22,622	\$22,622	\$22,622	\$0	\$0	\$113,108	\$114,212	(\$1,104)
Ferndale	\$0	\$0	\$0	\$0	\$0	\$48,152	\$48,152	\$48,152	\$48,152	\$48,152	\$0	\$0	\$240,760	\$240,493	\$267
Whitehorn 2 & 3	\$0	\$0	\$0	\$0	\$0	\$31,090	\$31,090	\$31,090	\$31,090	\$31,090	\$0	\$0	\$155,450	\$151,290	\$4,160
EncoGen	\$0	\$0	\$0	\$0	\$0	\$10,003	\$10,003	\$10,003	\$10,003	\$10,003	\$0	\$0	\$50,014	\$49,848	\$166
Crystal mountain	\$3,306	\$3,306	\$3,306	\$3,306	\$3,306	\$3,306	\$3,306	\$3,306	\$3,306	\$3,306	\$3,306	\$3,306	\$39,671	\$54,126	(\$14,455)
Total	\$3,306	\$3,306	\$3,306	\$3,306	\$3,306	\$196,900	\$196,900	\$196,900	\$196,900	\$196,900	\$3,306	\$3,306	\$1,072,643	\$1,071,187	(\$1,456)
MWHS															
Aurora Mid C price															
Value of energy	\$244	\$399	\$470	\$476	\$447	\$26,871	\$32,542	\$33,999	\$33,516	\$25,141	\$312	\$201	\$154,619	\$133,990	\$20,628
Net cost total	\$3,062	\$2,906	\$2,836	\$2,830	\$2,859	\$170,029	\$164,358	\$162,901	\$163,385	\$171,759	\$2,994	\$3,105	\$853,024	\$887,196	-\$34,172

Oil for Crystal mountain generator - reliability operations over a 3 yr. period (not modeled in AURORA)

Capacity (MW)	Heat rate on Oil (Btu/KWh)	Oil inventory (\$/gal)	Gallons burnt per hour (gal)	BTU content of #2 Fuel oil (Btu/gal)	Historical run profile (MWh)	Gallons per year (gal)	Oil need (gal)	Oil Cost @ market (\$)	New cost of oil inventory (\$/gal)	Cost of Oil (\$)
2				140,000	211					\$39,671

Oil for testing - Calculated oil cost for 5hr compliance and reliability testing

Capacity (MW)	*Heat rate on Oil (Btu/KWh)	Oil inventory (\$/gal)	Gallons burnt per hour (gal)	BTU content of #2 Fuel oil (Btu/gal)	Testing hours (hrs)	Gallons per year (gal)	Cost of Oil (\$)
Frederickson 1 & 2				140,000	5		\$159,136
Fredonia 1 & 2				140,000	5		\$249,504
Fredonia 3 & 4				140,000	5		\$113,108
Ferndale				140,000	5		\$240,760
Whitehorn 2 & 3				140,000	5		\$155,450
EncoGen				140,000	5		\$50,014
Total							\$967,972

*Heat rate on oil is derived from gallon per minute diesel burn rates from simple cycle plant data. The combined cycles use their natural gas heat rates.

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Adequate oil supply to cover winter reliability - 48 hr supply (Incremental oil purchases are rolled into inventory cost)

Capacity (MW)	Heat rate on Oil (Btu/KWh)	Oil inventory (\$/gal)	Gallons burnt per hour (gal)	BTU content of #2 Fuel oil (Btu/gallons)	Reliability run (hrs)	48hr reliability run (gal)	*Minimum fill level 1'6" from tank base (gal)	Sufficiency test 5hrs + 48hr exceed	Oil need (gal)	Oil Cost @ market (\$)	New cost of oil inventory (\$/gal)
Frederickson 1 & 2	148			140,000	48		83,202	Yes	(53,352)	\$119,135	
Fredonia 1 & 2	208			140,000	48		147,588	Yes	(137,479)	\$306,991	
Fredonia 3 & 4	108			140,000	48		147,588	Yes	(137,479)	\$306,991	
Ferndale	245			140,000	48		60,000	No	-	\$0	
Whitehorn 2 & 3	148			140,000	48		23,184	No	(22,641)	\$50,557	
Encogen	165			140,000	48		18,774	Yes	(139,116)	\$310,647	
Total											

*Minimum fill level 1'6" is the minimum measure that diesel can be extracted to from each tank until mandatory refill must take place

SUMMARY OF OIL INVENTORY

9/30/2020	Gallons	Price	Amount	SAP Account
Crystal Mountain				15100061
Encogen				15111001
Ferndale				15100271
Frederickson				15100091
Fredonia				15100101
Whitehorn				15100081
Books				

Fair Market value (base price) #2 Fuel oil 15- PPM Sulfur Dyed
With taxes & fees: average 10%

Rate year: June 2021 through May 2022
Gas price date: 10/21/2020