

**EXH. PKW-51C  
DOCKETS UE-190529/UG-190530  
UE-190274/UG-190275  
2019 PSE GENERAL RATE CASE  
WITNESS: PAUL K. WETHERBEE**

**BEFORE THE  
WASHINGTON UTILITIES AND TRANSPORTATION COMMISSION**

**WASHINGTON UTILITIES AND  
TRANSPORTATION COMMISSION,**

**Complainant,**

**v.**

**PUGET SOUND ENERGY,**

**Respondent.**

**Docket UE-190529  
Docket UG-190530 (*Consolidated*)**

**In the Matter of the Petition of**

**PUGET SOUND ENERGY**

**For an Order Authorizing Deferral  
Accounting and Ratemaking Treatment  
for Short-life IT/Technology Investment**

**Docket UE-190274  
Docket UG-190275 (*Consolidated*)**

**SEVENTEENTH EXHIBIT (CONFIDENTIAL) TO THE  
PREFILED REBUTTAL TESTIMONY OF**

**PAUL K. WETHERBEE**

**ON BEHALF OF PUGET SOUND ENERGY**

**REDACTED  
VERSION**

**JANUARY 15, 2020**

**Puget Sound Energy  
Distillate Fuel Incremental Costs  
2019 GRC Rebuttal Power Cost Update**

REDACTED VERSION

|                       | May-20  | Jun-20  | Jul-20  | Aug-20  | Sep-20  | Oct-20  | Nov-20    | Dec-20    | Jan-21    | Feb-21    | Mar-21    | Apr-21    | 2019 GRC Rebuttal Update | 2019 GRC Proposed | Increase/ (Decrease) |
|-----------------------|---------|---------|---------|---------|---------|---------|-----------|-----------|-----------|-----------|-----------|-----------|--------------------------|-------------------|----------------------|
| Frederickson 1 & 2    | \$0     | \$0     | \$0     | \$0     | \$0     | \$0     | \$31,856  | \$31,856  | \$31,856  | \$31,856  | \$31,856  | \$31,856  | \$0                      | \$159,279         | \$0                  |
| Fredonia 1 & 2        | \$0     | \$0     | \$0     | \$0     | \$0     | \$0     | \$50,388  | \$50,388  | \$50,388  | \$50,388  | \$50,388  | \$50,388  | \$0                      | \$251,939         | \$0                  |
| Fredonia 3 & 4        | \$0     | \$0     | \$0     | \$0     | \$0     | \$0     | \$22,842  | \$22,842  | \$22,842  | \$22,842  | \$22,842  | \$22,842  | \$0                      | \$114,212         | \$0                  |
| Ferndale              | \$0     | \$0     | \$0     | \$0     | \$0     | \$0     | \$48,099  | \$48,099  | \$48,099  | \$48,099  | \$48,099  | \$48,099  | \$0                      | \$240,493         | \$0                  |
| Whitehorn 2 & 3       | \$0     | \$0     | \$0     | \$0     | \$0     | \$0     | \$30,258  | \$30,258  | \$30,258  | \$30,258  | \$30,258  | \$30,258  | \$0                      | \$151,290         | \$0                  |
| Encogen               | \$0     | \$0     | \$0     | \$0     | \$0     | \$0     | \$9,970   | \$9,970   | \$9,970   | \$9,970   | \$9,970   | \$9,970   | \$0                      | \$49,848          | \$0                  |
| Crystal mountain      | \$4,510 | \$4,510 | \$4,510 | \$4,510 | \$4,510 | \$4,510 | \$4,510   | \$4,510   | \$4,510   | \$4,510   | \$4,510   | \$4,510   | \$0                      | \$54,126          | \$0                  |
| <b>Total</b>          | \$4,510 | \$4,510 | \$4,510 | \$4,510 | \$4,510 | \$4,510 | \$197,923 | \$197,923 | \$197,923 | \$197,923 | \$197,923 | \$197,923 | \$1,021,187              | \$1,021,187       | \$0                  |
| MWHs                  | XXXXXX  | XXXXXX  | XXXXXX  | XXXXXX  | XXXXXX  | XXXXXX  | XXXXXX    | XXXXXX    | XXXXXX    | XXXXXX    | XXXXXX    | XXXXXX    | XXXXXX                   | XXXXXX            | XXXXXX               |
| Aurora Mid C price    | XXXXXX  | XXXXXX  | XXXXXX  | XXXXXX  | XXXXXX  | XXXXXX  | XXXXXX    | XXXXXX    | XXXXXX    | XXXXXX    | XXXXXX    | XXXXXX    | XXXXXX                   | XXXXXX            | XXXXXX               |
| Value of energy       | \$143   | \$201   | \$357   | \$424   | \$433   | \$395   | \$24,288  | \$31,920  | \$27,909  | \$26,930  | \$20,716  | \$276     | \$133,990                | \$133,700         | \$290                |
| <b>Net cost total</b> | \$4,368 | \$4,309 | \$4,154 | \$4,087 | \$4,077 | \$4,116 | \$173,635 | \$166,003 | \$170,014 | \$170,993 | \$177,207 | \$4,234   | \$887,196                | \$887,486         | -\$290               |

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 3.31.19 (\$/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             | XXXXXX                     | XXXXXX                         | XXXXXX                       | 140,000                              | 211                          | XXXXXX                 | XXXXXX         | XXXXXX                 | XXXXXX                             | \$54,126         |

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

| Capacity (MW) | *Heat rate on Oil (Btu/KWh) | Oil inventory 3.31.19 (\$/gal) | Gallons burnt per hour (gal) | BTU content of #2 Fuel oil (Btu/gal) | Testing hours (hrs) | Gallons per year (gal) | Cost of Oil (\$) |
|---------------|-----------------------------|--------------------------------|------------------------------|--------------------------------------|---------------------|------------------------|------------------|
| 148           | XXXXXX                      | XXXXXX                         | XXXXXX                       | 140,000                              | 5                   | XXXXXX                 | \$159,279        |
| 208           | XXXXXX                      | XXXXXX                         | XXXXXX                       | 140,000                              | 5                   | XXXXXX                 | \$251,939        |
| 108           | XXXXXX                      | XXXXXX                         | XXXXXX                       | 140,000                              | 5                   | XXXXXX                 | \$114,212        |
| 271           | XXXXXX                      | XXXXXX                         | XXXXXX                       | 140,000                              | 5                   | XXXXXX                 | \$240,493        |
| 148           | XXXXXX                      | XXXXXX                         | XXXXXX                       | 140,000                              | 5                   | XXXXXX                 | \$151,290        |
| 166           | XXXXXX                      | XXXXXX                         | XXXXXX                       | 140,000                              | 5                   | XXXXXX                 | \$49,848         |
| <b>Total</b>  |                             |                                |                              |                                      |                     |                        | \$967,061        |

\*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.

**Puget Sound Energy  
Distillate Fuel Incremental Costs  
2019 GRC Rebuttal Power Cost Update**

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 3.31.19 (\$/gal) | Gallons burnt per hour (gal) | BTU content of #2 Fuel oil (Btu/gallons) | Reliability run (hrs) | 48hr reliability run (gal) | *Minimum fill level 116" from tank base (gal) | Sufficiency test exceeds | Oil need (gal) | Oil Cost @ market (\$) | New cost of oil inventory (\$/gal) |
|--------------------|----------------------------|--------------------------------|------------------------------|--|-----------------------|----------------------------|---|--------------------------|----------------|------------------------|------------------------------------|
| Frederickson 1 & 2 | 148                        | XXXXXX                         | XXXXXX                       | 140,000                                  | 48                    | XXXXXX                     | 83,202  | Yes                      | (33,469)       | \$0                    | XXXXXX                             |
| Fredonia 1 & 2     | 208                        | XXXXXX                         | XXXXXX                       | 140,000                                  | 48                    | XXXXXX                     | 147,588                                       | Yes                      | (45,395)       | \$0                    | XXXXXX                             |
| Fredonia 3 & 4     | 108                        | XXXXXX                         | XXXXXX                       | 140,000                                  | 48                    | XXXXXX                     | 147,588                                       | Yes                      | (45,395)       | \$0                    | XXXXXX                             |
| Ferdale            | 245                        | XXXXXX                         | XXXXXX                       | 140,000                                  | 48                    | XXXXXX                     | 60,000  | No                       | -              | \$0                    | XXXXXX                             |
| Whitehorn 2 & 3    | 148                        | XXXXXX                         | XXXXXX                       | 140,000                                  | 48                    | XXXXXX                     | 23,184  | Yes                      | (55,292)       | \$0                    | XXXXXX                             |
| Encogen            | 165                        | XXXXXX                         | XXXXXX                       | 140,000                                  | 48                    | XXXXXX                     | 18,774  | Yes                      | (138,168)      | \$0                    | XXXXXX                             |
| <b>Total</b>       |                            |                                |                              |  |                       |                            |   |                          |                |                        |                                    |

\*Minimum fill level 116" is the minimum measure that diesel can be extracted to from each tank until mandatory refill must take place

**SUMMARY OF OIL INVENTORY  
31-Mar-19**

| Gallons          | Price  | Amount   | SAP Account |
|------------------|--------|----------|-------------|
| Crystal Mountain | XXXXXX | \$XXXXXX | 15100061    |
| Encogen          | XXXXXX | \$XXXXXX | 15100091    |
| Ferdale          | XXXXXX | \$XXXXXX | 15100101    |
| Frederickson     | XXXXXX | \$XXXXXX | 15100271    |
| Fredonia         | XXXXXX | \$XXXXXX | 15100081    |
| Whitehorn        | XXXXXX | \$XXXXXX | 15111001    |
| Books            | XXXXXX | \$XXXXXX |             |

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

Rate year: May 2020 through April 2021  
Gas price date: 12/05/2019