

**EXH. CLS-4  
DOCKET UE-191037  
COLSTRIP UNIT 4 SALE  
WITNESS: CINDY L. SONG**

**BEFORE THE  
WASHINGTON UTILITIES AND TRANSPORTATION COMMISSION**

**In the Matter of the Application of**

**PUGET SOUND ENERGY**

**For an Order Authorizing the Sale of  
All of Puget Sound Energy's Interests  
in Colstrip Unit 4 and Certain of Puget  
Sound Energy's Interests in the  
Colstrip Transmission System**

**Docket UE-191037**

**THIRD EXHIBIT (NONCONFIDENTIAL) TO THE  
PREFILED DIRECT TESTIMONY OF**

**CINDY L. SONG**

**ON BEHALF OF PUGET SOUND ENERGY**

**FEBRUARY 19, 2020**

**PSE Quantitative Analysis Comparing "Business  
as Usual" Scenario and the "Proposed Sale" Scenario  
(August 23, 2019)**

Line		Present Value	2020	2021	2022	2023	2024
1	<b>Cost (\$ in millions)</b>						
2	Colstrip unit 4 continuing operations	\$218	\$51	\$54	\$53	\$54	\$53
3	90MW PPA NWE + 95MW Mkt Purchase	\$159	\$38	\$40	\$38	\$39	\$39
4	<b>Proposed Sale Benefit</b>	<b>\$59</b>	<b>\$13</b>	<b>\$14</b>	<b>\$15</b>	<b>\$15</b>	<b>\$14</b>
5							
6	Hedging Cost (95MW Mkt Purchase)	<b>(\$34)</b>	<b>(\$8)</b>	<b>(\$9)</b>	<b>(\$9)</b>	<b>(\$9)</b>	<b>(\$6)</b>
7	<b>Proposed Sale Benefit Net of Hedging Cost</b>	<b>\$25</b>	<b>\$5</b>	<b>\$4</b>	<b>\$6</b>	<b>\$6</b>	<b>\$8</b>
8							
9	<b>Cost (\$/MWh)</b>	Average					
10	Colstrip unit 4 continuing operations	\$42 / MWh	\$41 / MWh	\$39 / MWh	\$41 / MWh	\$42 / MWh	\$45 / MWh
11	90MW PPA NWE + 95MW Mkt Purchase	\$32 / MWh	\$31 / MWh	\$29 / MWh	\$29 / MWh	\$30 / MWh	\$33 / MWh
12	Proposed Sale Benefit	\$10 / MWh	\$10 / MWh	\$10 / MWh	\$12 / MWh	\$12 / MWh	\$12 / MWh
13							
14	Hedging Cost (95MW Mkt Purchase)	<b>(\$6) / MWh</b>	<b>(\$6) / MWh</b>	<b>(\$7) / MWh</b>	<b>(\$7) / MWh</b>	<b>(\$7) / MWh</b>	<b>(\$5) / MWh</b>
15	Proposed Sale Benefit Net of Hedging Cost	\$4 / MWh	\$4 / MWh	\$3 / MWh	\$5 / MWh	\$5 / MWh	\$7 / MWh

## "Business as Usual" Scenario: Ongoing Operation Unit 4 2020-2035

Line	\$ in millions	2020	2021	2022	2023	2024	2025
1	Capacity	185 MW	185 MW	185 MW	185 MW	185 MW	185 MW
2	PSE's Take (MWh)	1,250,751	1,375,318	1,303,540	1,305,721	1,180,677	1,284,503
3	Net Capacity Factor	77%	85%	80%	81%	73%	79%
4							
5	<b>Colstrip 4 Operating Cost</b>						
6	Fixed Operating Expenses	\$14	\$14	\$12	\$12	\$12	\$13
7	Capital	\$4	\$3	\$2	\$3	\$3	\$3
8	Coal Fixed	\$14	\$14	\$15	\$15	\$15	\$16
9	Dispatch Costs	\$17	\$20	\$21	\$22	\$20	\$22
10	<b>Colstrip 4 Operating Cost</b>	<b>\$48</b>	<b>\$51</b>	<b>\$50</b>	<b>\$52</b>	<b>\$50</b>	<b>\$54</b>
11							
12	<b>PSE Expenses</b>						
13	Property Taxes	\$3	\$3	\$3	\$3	\$3	\$3
14	<b>Total PSE Expenses</b>	<b>\$3</b>	<b>\$3</b>	<b>\$3</b>	<b>\$3</b>	<b>\$3</b>	<b>\$3</b>
15							
16	<b>Total Cost (line 10 + 14)</b>	<b>\$51</b>	<b>\$54</b>	<b>\$53</b>	<b>\$54</b>	<b>\$53</b>	<b>\$57</b>
17							
18	Dispatch cost (\$/MWh)	\$14 / MWh	\$14 / MWh	\$16 / MWh	\$17 / MWh	\$17 / MWh	\$18 / MWh
19	Total Cost (\$/MWh)	\$41 / MWh	\$39 / MWh	\$41 / MWh	\$42 / MWh	\$45 / MWh	\$44 / MWh
20							
21	<b>NPV Ongoing Operations (line 16)</b>						<b>\$218</b>
22	<b>Average (line 19)</b>						<b>\$42 / MWh</b>

**"Proposed Sale" Scenario: 5-year PPA with NWE 2020-2024; 2025 Replacement Resource**

Line	\$ in millions	2020	2021	2022	2023	2024	2025
1	<b>NWE PPA</b>						
2	Capacity	90 MW	90 MW	90 MW	90 MW	90 MW	
3							
4	Energy (MWh)	608,474	669,073	634,155	635,216	574,383	
5	Mid-C Price (\$/MWh)	\$25 / MWh	\$24 / MWh	\$24 / MWh	\$24 / MWh	\$27 / MWh	
6	<b>PPA Cost</b>	<b>\$15</b>	<b>\$16</b>	<b>\$15</b>	<b>\$16</b>	<b>\$15</b>	
7							
8	<b>Replacement Capacity &amp; Energy</b>						
9	Capacity	95 MW	95 MW	95 MW	95 MW	95 MW	185 MW
10							
11	<b>Energy Replacement</b>						
12	Lost Energy (MWh)	642,278	706,244	669,385	670,505	606,294	1,284,503
13	Less Energy for Peaking Resource	(38,770)	(48,367)	(43,331)	(36,204)	(26,512)	(47,557)
14	Replacement Power	603,508	657,877	626,055	634,301	579,782	1,236,946
15	Mid-C Price (\$/MWh)	\$25 / MWh	\$24 / MWh	\$24 / MWh	\$24 / MWh	\$27 / MWh	\$28 / MWh
16	<b>Energy Replacement</b>	<b>\$15</b>	<b>\$16</b>	<b>\$15</b>	<b>\$15</b>	<b>\$16</b>	<b>\$34</b>
17							
18	<b>Replacement Capacity</b>						
19	Capacity Charge	\$85/kw-yr	\$85/kw-yr	\$85/kw-yr	\$85/kw-yr	\$85/kw-yr	\$85/kw-yr
20	<b>Capacity Replacement Cost</b>	<b>\$8</b>	<b>\$8</b>	<b>\$8</b>	<b>\$8</b>	<b>\$8</b>	<b>\$16</b>
21							
22	<b>Total Cost (line 6 + 16 + 20)</b>	<b>\$38</b>	<b>\$40</b>	<b>\$38</b>	<b>\$39</b>	<b>\$39</b>	<b>\$50</b>
23							
24	Total Capacity	185 MW	185 MW	185 MW	185 MW	185 MW	185 MW
25	Total Energy (MWh)	1,250,751	1,375,318	1,303,540	1,305,721	1,180,677	1,284,503
26	Total Cost (\$/MWh)	\$31 / MWh	\$29 / MWh	\$29 / MWh	\$30 / MWh	\$33 / MWh	\$39 / MWh
27							
28	<b>NPV 90MW PPA + 95MW Mkt Purchase</b>	<b>\$159</b>					
29	<b>Average</b>	<b>\$32 / MWh</b>					