Exh. JL-5C Docket UE-200115 Witness: Jing Liu REDACTED VERSION

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-200115**

EXHIBIT TO TESTIMONY OF

Jing Liu

STAFF OF WASHINGTON UTILITIES AND TRANSPORTATION COMMISSION

Cost-Benefit Analysis with Staff's Alternative Cost Assumptions and the Assumption of High Market Prices

October 2, 2020

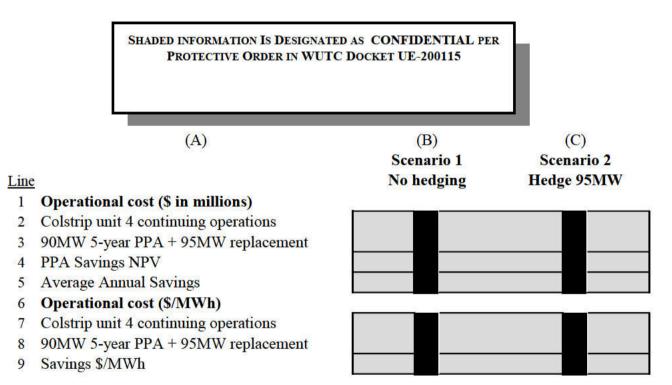
CONFIDENTIAL PER PROTECTIVE ORDER – REDACTED VERSION

Exh. JL-5C Docket UE-200115 Page 1 of 15 REDACTED VERSION

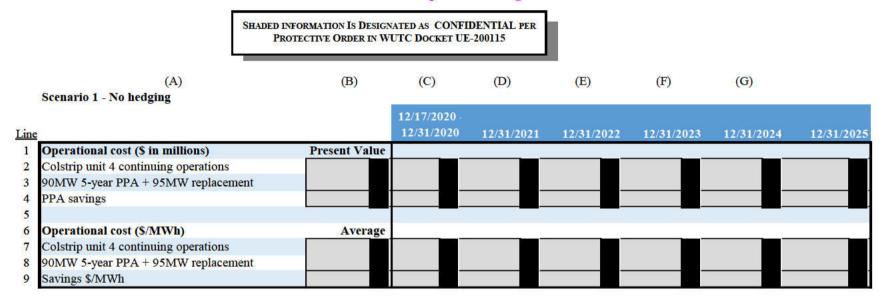
Shaded information is designated as CONFIDENTIAL per Protective Order in Docket UE-200115

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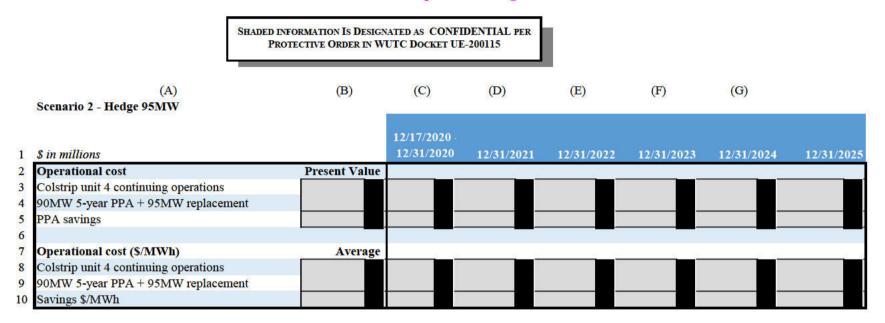
Quantitative Analysis Comparing "Business as Usual" Scenario and the "Proposed Sale" Scenario with UTC Staff Alternative Cost Assumptions and High Market Price



Quantitative Analysis Comparing "Business as Usual" Scenario and the "Proposed Sale" Scenario Five-Year Comparison



Quantitative Analysis Comparing "Business as Usual" Scenario and the "Proposed Sale" Scenario Five-Year Comparison



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Colstrip Unit 4 - Continuing Operations

with UTC Staff Alternative Cost Assumptions and High Market Price

SHADED INFORMATION IS DESIGNATED AS CONFIDENTIAL PER PROTECTIVE ORDER IN WUTC DOCKET UE-200115

		1						
		12/17/2020-						
Line	\$ in millions	12/31/2020	12/31/2021	12/31/2022	12/31/2023	12/31/2024	12/31/2025	Average
1	PSE's share of unit 4 capacity	185 MW	185 MW	185 MW	185 MW	185 MW	185 MW	185 MW
2	PSE's take (MWh)							
3								
4	Net capacity factor							
5								
6	Colstrip unit 4 operating cost			17 B				
7	Fixed operating expenses							
8	Overhaul							
9	Capital							
10	Dispatch cost							
11	Colstrip unit 4 operating cost							
12								
13	Property Tax							
14			24 - 10.	200 421 - 163	16 - 10 28 - 15			
15	Total cost (line 11 +13)							
16								
17	Dispatch cost (line 10 / 2)							
18	Cost \$/MWh (line 15 / 2)							
19								
20	Total cost NPV (line 15)							
21	Cost \$/MWh (5-year average)							

Based on Attachment A to PSE's Second Revised Response to WUTC Staff Data Request No. 021

Tab: Continuing Operations (C)

Scenario 1 - No Hedging



		w. a					
		12/17/2020-					1/1/2025
Line	\$ in millions	12/31/2020	12/31/2021	12/31/2022	12/31/2023	12/31/2024	12/2/2023
1	90 MW NEW PPA						
2	NW + Talen PPA capacity	90 MW	90 MW	90 MW	90 MW	90 MW	90 MW
3							
4	Energy (MWh)						
5	PPA price (\$/MWh)						
6	PPA cost	2.					
7	Base O&M						
8	Total PPA (line 6+7)						
9			187	70	92	13 m	8
		12/17/2020-					
10	95 MW Replacement	12/31/2020	12/31/2021	12/31/2022	12/31/2023	12/31/2024	12/31/202
11	Replacement energy post PPA		72 - 12				
12	Replacement energy (MWh)						
13	Mid-C price (\$/MWh)						
14	Energy replacement						
15		a an					
16	Replacement capacity winter only						
17	Capacity (MW)	95 MW	95 MW	95 MW	95 MW	95 MW	95 MV
18	Capacity charge \$/KW-yr						
19	Capacity replacement cost						
20							

Scenario 1 - No Hedging

with UTC Staff Alternative Cost Assumptions and High Market Price

SHADED INFORMATION IS DESIGNATED AS CONFIDENTIAL PER PROTECTIVE ORDER IN WUTC DOCKET UE-200115

							12/3/2020-
21	90 MW Replacement after PPA Ends						12/31/2020
22	Replacement energy post PPA	-					
23	Replacement energy (MWh)						
24	Mid-C price (\$/MWh)						
25	Energy replacement						
26							
27	Replacement capacity winter only						
28	Capacity (MW)						90 MW
29	Capacity charge \$/KW-yr	S					
30	Capacity replacement cost						
31		- 					
32	Total cost (line 8+14+19+25+30)						
33						10	0. <u> </u>
34	Total capacity	185 MW					
35	Total energy MWh						
36	Cost \$/MWh (line 32 / 35)						
37							
38	Total cost NPV (line 32)						
39	Cost \$/MWh (5-year average)						

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Scenario 2 - Hedging

	SHADED INFORMATION IS DESIGNATED AS CONFIDENTIAL PER PROTECTIVE ORDER IN WUTC DOCKET UE-200115					
Line \$ in millions	12/17/2020- 12/31/2020	12/31/2021	12/31/2022	12/31/2023	12/31/2024	1/1/2025- 12/2/2025
1 90 MW NEW PPA						
2 NW + Talen PPA capacity	90 MW	90 MW	90 MW	90 MW	90 MW	90 MW
3						
4 Energy (MWh)						
5 PPA price (\$/MWh)						
6 PPA cost						
7 Base O&M						
8 Total PPA (line 6+7)						
9			neter Neter	75 4	12 A.	
	12/17/2020-					
0 95 MW Replacement	12/31/2020	12/31/2021	12/31/2022	12/31/2023	12/31/2024	12/31/202
1 Replacement energy post PPA	<u>.</u>					
2 Replacement energy (MWh)						
3 Mid-C price (\$/MWh)						
4 Energy replacement						
5						
16 Replacement capacity winter only						
17 Capacity (MW)	95 MW	95 MW	95 MW	95 MW	95 MW	95 MV
18 Capacity charge \$/KW-yr						
19 Capacity replacement cost						
20						

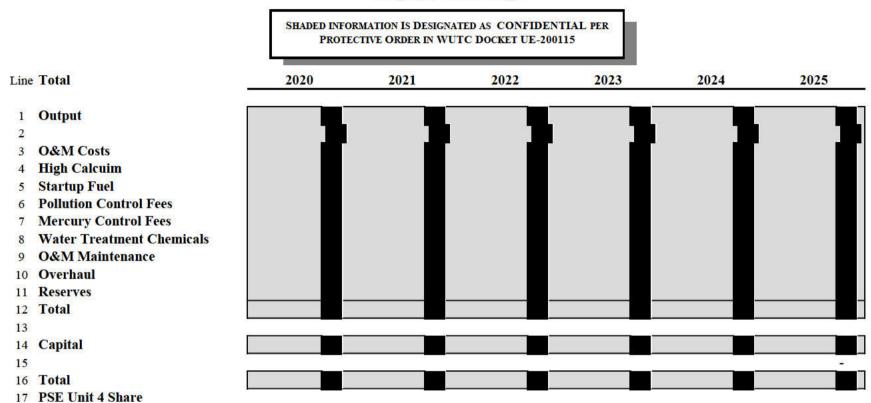
Scenario 2 - Hedging

with UTC Staff Alternative Cost Assumptions and High Market Price

SHADED INFORMATION IS DESIGNATED AS CONFIDENTIAL PER PROTECTIVE ORDER IN WUTC DOCKET UE-200115

							12/3/2020-
21	90 MW Replacement after PPA Ends						12/31/2020
22	Replacement energy post PPA	1.					
23	Replacement energy (MWh)	5					
24	Mid-C price (\$/MWh)						
25	Energy replacement						
26							
27	Replacement capacity winter only						
28	Capacity (MW)						90 MW
29	Capacity charge \$/KW-yr						
30	Capacity replacement cost						
31	6 DA 22	· · · · · · · · · · · · · · · · · · ·	2				
32	Total cost (line 8+14+19+25+30)	1					
33		X 60	a) ()	78		(8 107	() <u> </u>
34	Total capacity	185 MW	<u>185 MW</u>	185 MW	185 MW	185 MW	185 MW
35	Total energy MWh						
36	Cost \$/MWh (line 32 / 35)						
37				18	10	31 <u>7</u> 8	10 10
38	Total cost NPV (line 32)	3					
39	Cost \$/MWh (5-year average)						

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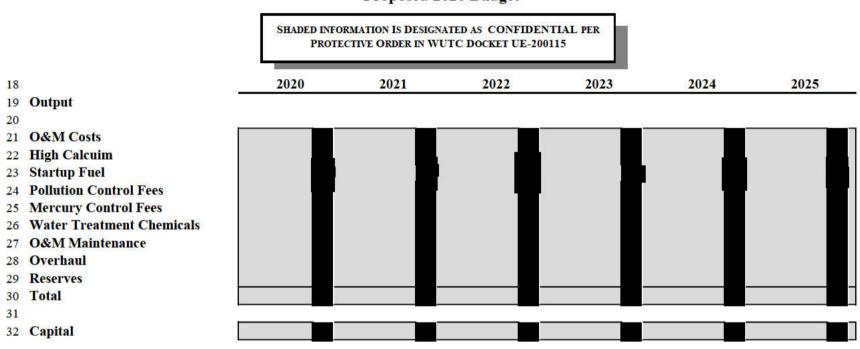


Proposed 2020 Budget

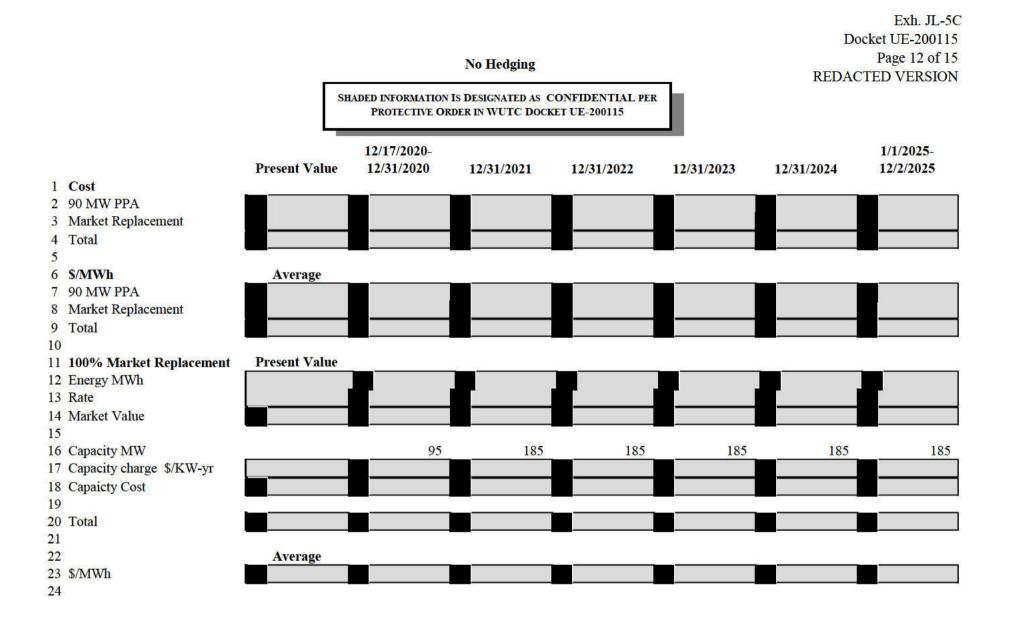
Based on Attachment A to PSE's Second Revised Response to WUTC Staff Data Request No. 021

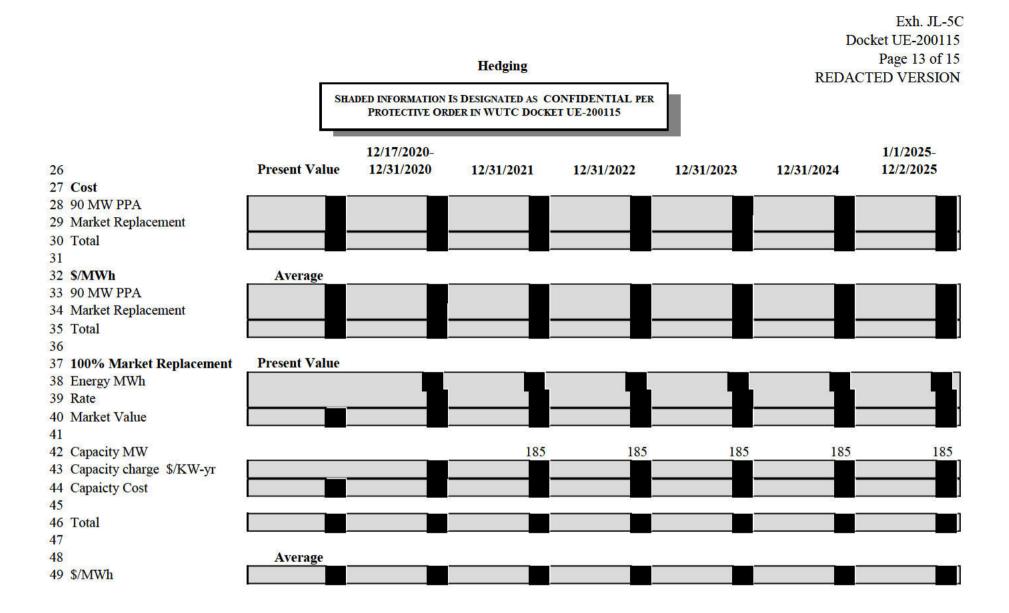
Tab: 2020 Budget (C)

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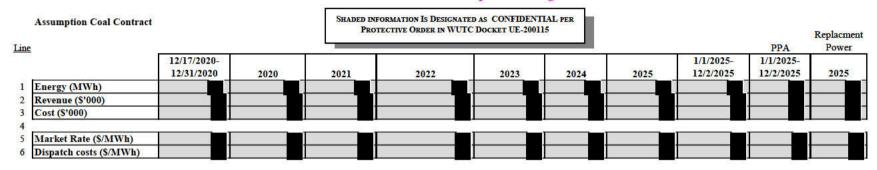


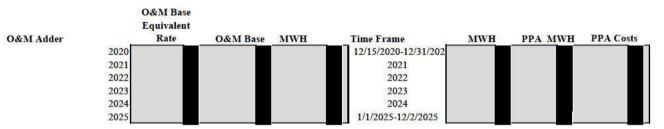
Proposed 2020 Budget





Colstrip Unit 4 Dispatch Assumptions with UTC Staff Alternative Cost Assumptions and High Market Price





PSE's Weighted Average Cost of Capital

Line

1

2	Capital Structure	Ratio	Cost	Weighted Cost	Tax Rate	After-tax Weighted Cost
3	Debt	51.5%	5.50%	2.83%	21.00%	2.24%
4	Equity	48.5%	9.40%	4.56%		4.56%
5	Total	100.0%		7.39%		6.80%