Exh. RJB-1CT
UE-200115
Witness: Ronald J. Binz

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

REDACTED

RESPONSE TESTIMONY OF

RONALD J. BINZ

ON BEHALF OF

NW ENERGY COALITION AND

RENEWABLE NORTHWEST

October 2, 2020

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I. INTRODUCTION

Q. Please state your name and business address.

A. My name is Ronald J. Binz. I am a Principal with Public Policy Consulting, a firm specializing in energy policy and regulatory matters. My business address is 333 Eudora Street, Denver, Colorado 80220. I provide consulting services to a variety of public sector and private sector clients in the energy industries, primarily in the regulatory arena.

Q. Please describe your background and experience.

A. I have been involved in energy regulation since 1979. From 1995 to 2006 and from 2011 to the present, I have served as principal of Public Policy Consulting, consulting on energy policy and regulation in the energy and telecommunications markets. My focus in recent years has been on performance-based regulation and energy regulatory policy, including integrated resource planning, clean technology, smart grid, and climate issues.

From 2007 to 2011, I was Chairman of the Colorado Public Utilities Commission ("Colorado PUC"). In that capacity, I helped implement Colorado's vision for a "New Energy Economy" and its 30% Renewable Energy Portfolio Standard, participated in the Governor's Climate Action Plan, streamlined telecommunications regulation, promoted broadband telecommunications investment, and improved the Colorado PUC's operations.

As Colorado PUC Chair, I presided over implementation of the Colorado Clean Air-Clean Jobs Act, examining proposals of electric utilities to reduce pollutants from their fleets of coal-fired power plants.

I also presided over the modification and approval of an electric utility resource plan involving the addition of large amounts of new wind capacity, the early closure of two coal power plants to reduce carbon and other emissions, and substantial amounts of new energy efficiency savings.

From July 2011 to July 2013, I was Senior Policy Advisor at the Center for the New Energy Economy ("CNEE") at Colorado State University. CNEE provides policymakers, governors, regulators, and other decision-makers a roadmap to accelerate the nationwide development of a new energy economy.

From 1977 to date, I have participated in more than 150 regulatory proceedings before the Federal Energy Regulatory Commission ("FERC"), the Federal Communications Commission ("FCC"), State and Federal District Courts, the 8th Circuit, 10th Circuit and D.C. Circuit Courts of Appeal, the U.S. Supreme Court, and state regulatory commissions in California, Colorado, Georgia, Hawai'i, Idaho, Maine, Massachusetts, Missouri, Montana, New York, North Dakota, Rhode Island, South Dakota, Texas, Utah, Wyoming, and the District of Columbia. I have filed testimony in at least sixty proceedings before these bodies, addressing technical and policy issues in electricity, natural gas, telecommunications, and water regulation. I have also testified before U.S. House and Senate Committees sixteen times.

From 1996-2003, I served as President and Policy Director of the Competition Policy Institute, an independent non-profit organization based in Washington, D.C., advocating for state and federal policies to bring competition to energy and telecommunications markets for consumers' benefit.

From 1984 to 1995, I was director of the Colorado Office of Consumer Counsel, Colorado's state-funded utility consumer advocate office. During my tenure, the office was a party to more than two hundred legal cases before the Colorado PUC, FERC, FCC, and the courts. I negotiated rate settlement agreements with utilities, regularly testified before the Colorado general assembly, and presented to professional business and consumer organizations on utility rate matters.

My educational background includes an M.A. degree in Mathematics from the University of Colorado (1977), course requirements met for a Ph.D., graduate course work toward an M.A. in Economics from the University of Colorado (1981-1984), and a B.A. with Honors in Philosophy from St. Louis University (1971).

I have authored or co-authored numerous publications on energy and regulatory matters, including "Risk Aware Planning and a New Model for the Utility-Regulator Relationship" (July 2012). A copy of my professional resume, which includes my employment history, education, Congressional testimony, regulatory testimony, reports and publications, and professional associations and activities, is attached as Exh. RJB-02 to this Testimony.

Q. On whose behalf are you testifying?

A. NW Energy Coalition ("NWEC") and Renewable Northwest ("RNW").

Q. What is the purpose of this response testimony?

A. I was asked by NWEC and RNW to review the application of Puget Sound Energy ("PSE" or "Puget") to sell its 25% share of Colstrip Unit 4 ("CU4") to NorthWestern Energy ("NWE" or "NorthWestern") and Talen Montana ("Talen") and to enter into a Power Purchase Agreement ("PPA") with each of the same

entities (referred to herein as the "Sale and Purchase"). NWEC/RNW asked me to determine the impact on consumer bills of Puget customers in Washington in both the short run and in the long run. I have completed that examination and now offer recommendations that I hope will assist the Washington Utilities and Transportation Commission ("WUTC" or "Commission") as it considers this important matter.

Q. Please summarize your testimony and your recommendations.

A. Here are my conclusions and recommendations to the Commission:

- The sale of its Colstrip 4 interests to NorthWestern and Talen is intended to help Puget meet its obligations under the 2019 Washington Clean Energy Transformation Act ("CETA"). However, it will also enable NWE and Talen to continue to operate Puget's 185-megawatt ("MW") share of Colstrip 4 for many years, possibly until 2042. This makes Puget's chosen method to comply with CETA look somewhat hollow. Puget's action will enable its divorce from coal generation, but it will not reduce carbon emissions (anywhere in the world). While I am not a lawyer, this appears to be contrary to the spirit, if not the letter of CETA.

- The most recent analysis presented by Puget to justify the sale of Colstrip and the associated PPAs concludes that the 5-year net present value of the benefit of the proposed transaction is between $6 million and $33 million, depending on whether Puget hedges its market purchases. My analysis concludes that the benefit is smaller: about $27 million in the no-hedge case and ***negative*** $8 million in the hedge case.

- Ownership of the physical generation facility is itself a hedge against higher market prices. Thus, maintaining Colstrip ownership is less costly for Puget customers than the combination of the asset sale, two PPAs and hedged market purchases, assuming the goal is to secure power at stable prices in the 2020-2025 timeframe.

- The cost or benefit of the sale and PPA to Washington consumers is small in absolute terms – in the range of -$2 million to +8 million annually. Assuming Puget would hedge its market purchases, the savings or costs would be only about ±7 cents per month for residential customers. If the Commission is inclined to reject the Sale and Purchase due to CETA or other concerns, it may do so without risking harm to Washington consumers.

Q. Please describe the materials you reviewed in preparation for your testimony.

A. I reviewed Puget's Application, Testimony, and Exhibits in this docket; the Commission's orders; all pleadings; and the discovery requests and responses, including confidential material. In addition, I am a witness on behalf of NWEC/RNW in the Montana proceeding where the Montana Public Service Commission ("MPSC") is reviewing NWE's application to acquire an additional 92.5 MW of Colstrip 4 capacity from Puget and enter into a 45 MW PPA with Puget.[1] The purchase of transmission assets is not part of the Montana case.

II. OVERVIEW

Q. What is PSE seeking in this case?

A. PSE seeks WUTC approval to sell its 25% share (185 MW) of Colstrip Unit 4 capacity to NorthWestern and Talen for $1.00. In addition, PSE seeks to obtain WUTC approval for 5-year[2] PPAs with NWE and Talen.

Following Talen's assertion of the right of first refusal under the Colstrip Project Owners and Operation Agreement, NWE and Talen each will purchase 92.5 MW from PSE for $0.50 and will each provide 45 MW of power to PSE under the 5-year PPAs. In addition, PSE is seeking WUTC approval of the sale of certain transmission to NWE. Talen has claimed a right of first refusal to acquire a portion of the

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[1] *Northwestern Energy's Application for Approval of Capacity Resource Acquisition*, MPSC Docket No. 2019.12.101.

[2] Roberts, Exh. RJR-09T. The PPAs are 258 weeks in length, two weeks short of five years to ensure that the delivery of coal-based electric generation ends by December 31, 2025 in conformance with CETA.

transmission assets as well. That claim is disputed by NWE and the matter has gone to arbitration.

Q. Why does Puget wish to sell its share of Colstrip Unit 4?

A. As this Commission is well aware, Puget is subject to Washington's CETA, signed into law on May 7, 2019. Among its many provisions, the new law requires Washington's electric utilities to stop charging their Washington customers for coal-generated electricity by December 31, 2025.[3] The prohibition applies to all electricity generated by or purchased by Washington utilities, both in-state and out-of-state.[4] Puget is proposing to sell its coal-generation assets in Colstrip 4 in 2020, ahead of the statutory deadline, and purchase about half of the foregone energy from the new owners, NorthWestern and Talen, via a PPA. In its filing, Puget justifies undertaking the Sale and Purchase because the company claims the economics of Colstrip Unit 4 are declining and becoming more costly to the company's customers.

The agreement between Puget and NWE also provides for the transfer of certain transmission assets. That matter is addressed in testimony by Mr. Michael Goggin on behalf of NWEC/RNW,[5] and I will not refer to the transmission issue in this testimony.

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3 RCW 19.405-030(1)(a).
4 *Id.*
5 Goggin, Exh. MSG-1T.

Q. Does Puget's sale of its Colstrip capacity comply with the requirements of CETA?

A. I will respond not as an attorney, but as a former commission chairman with much experience with interpreting statutory requirements during my tenure.

Removing Colstrip Unit 4 from ownership and terminating the sale back PPAs by December 31, 2025 enables Puget to eliminate the coal generation from Colstrip Unit 4 from its portfolio. After December 31, 2025, Washington customers will no longer be charged for generation at this unit.

But that may not be the end of the matter. According to NWE, it intends to continue running Colstrip Unit 4 past 2025, possibly until 2042, the end of the Unit's depreciation life.[6] This means that the 185 MW slice of the unit being sold by Puget will continue to generate electricity and emit greenhouse gases for up to 17 years after Puget moves the plant out of its generation portfolio in a sale. In my view, even if Puget's resolution of the matter might comply with the letter of the law, it certainly doesn't serve the spirit of CETA.

To see why, consider the legislative preamble to the new law, which contains several references to the need to eliminate generation that produces greenhouse emissions. Here are two quotes from Section 1 of the new law:

> *It is the policy of the state to eliminate coal-fired electricity, transition the state's electricity supply to one hundred percent carbon-neutral by 2030, and one hundred percent carbon-free by 2045.*[7]

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6 *Electric General Rate Review of Northwestern Energy*, MPSC Docket No. D2018.2.12, Response to Data Request MCC-178(a).

7 RCW 19.405.010(2).

* * *

Absent significant and swift reductions in greenhouse gas emissions, climate change poses immediate significant threats to our economy, health, safety, and national security.[8]

While I am not a lawyer, from the second quote, it seems clear that the legislation was intended to eliminate greenhouse gas emissions, not merely move them around. Selling Puget's share of Colstrip Unit 4 to NWE will not reduce greenhouse gas emissions.[9] In fact, it will likely ***increase*** greenhouse gas emissions compared to other courses of action. By selling its share of CU4 to NWE and Talen for $1.00 and then removing itself from governance of the unit it previously jointly owned, Puget is clearing the way for NWE and Talen to use Puget's former 185 MW share to generate 21.5 million megawatt-hours ("MWh") of electricity, emitting 25.8 million tons of CO_2 (plus other greenhouse gases) between 2025 and 2042.[10]

This result does not meet either the "net benefit" or the "no harm" public interest standard as discussed by Nancy Hirsh in her testimony.[11] While I am not opining on what the correct standard should be, it is my opinion that the transaction will cause rates to increase, increase risks to ratepayers, make it more difficult for PSE to preserve affordable service, and will not protect the interests of Washington ratepayers.

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8 RCW 19.405.010(3).

9 Hirsh, Exh. NEH-04 (PSE Response to NWEC Data Request No. 001).

10 185 MW times 78% capacity factor times 8760 hours/year times 17 years equals 21.5M MWh. 21.5M MWh times 2400 lbs. CO_2/MWh equals 25.8M tons of CO_2.

11 Hirsh, Exh. NEH-1T.

III. THE COMMISSION'S OPTIONS

Q. What action can the Commission take to make Puget's course of action more consistent with the spirit of CETA?

A. If the Commission wishes to make Puget's course of action more consistent with the spirit of CETA, it can reject the application, denying Puget the ability to sell its Colstrip Unit 4 capacity to NWE and Talen.

Q. What would happen if the Commission rejects this application?

A. Puget would maintain its ownership share of CU4 and take energy from the unit until December 31, 2025, much like it would do under the proposed PPA. The difference is that Puget would take more energy than under the PPA, and thereby obtain capacity, as well as eliminate any new market purchases of energy or capacity. Further, owning the physical asset eliminates the need for a hedge against market price increases, something Puget models in this application.

Importantly, Puget would retain its voting prerogative concerning the closure of Colstrip Units 3 and 4. As discussed further below, the cost of power from CU4 up until 2025 is likely to be acceptable to Puget. It is difficult to speculate how Puget's continued role in decision-making would affect the status of CU4, but Puget's influence with respect to that unit would be zero if the sale were allowed.[12]

[12] Roberts, Exh. RJR-09T at 47.

Q. If Puget maintains pressure on NWE to close CU4, why might NWE and Talen be willing to agree to closure of CU4 by 2025?

A. It might sound fanciful to assume that NWE and Talen would agree to close the plant on a 2025 time frame. On the other hand, NWE and Talen both want to see this Sale and Purchase transaction close: it is valuable to each of them. If Puget does not get approval now, the parties could come back with a proposal that involves closing CU4.

Meanwhile, the economics of Colstrip Unit 4 continue to decline, as argued in my testimony in Montana[13] and by Puget in this case.[14] NWE seems to understand this, because it notes several times in its Montana testimony that the Sale and Purchase is valuable to NWE even if it lasts only five years.[15] The costs at Colstrip Unit 4 will likely increase sharply after 2025, given the need to overhaul the superheater, the increase in coal prices, and especially if Colstrip Unit 3 is decommissioned by 2025.[16] While NWEC/RNW do not support the Sale and Purchase in Montana, they are asking the MPSC to require NWE to develop a near-term closure and transition plan.[17]

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[13] *Electric General Rate Review of Northwestern Energy*, Direct Testimony of Ronald J. Binz, MPSC Docket No. 2019.12.101 (Sept. 25, 2020).

[14] Roberts, Exh. RJR-01T.

[15] *Electric General Rate Review of Northwestern Energy*, Direct Testimony of Ronald J. Binz, Exh. RJB-9, MPSC Docket No. 2019.12.101 (Sept. 25, 2020).

[16] *Electric General Rate Review of Northwestern Energy*, Direct Testimony of Ronald J. Binz, MPSC Docket No. 2019.12.101 (Sept. 25, 2020).

[17] *Id*.

IV. MERITS OF THE PROPOSED SALE AND PURCHASE FOR PUGET

Q. Puget claims that the acquisition is beneficial for customers. Do you agree?

A. I carefully examined the financial analysis presented by Puget witness Cindy L. Song in her testimony. As I will discuss further below, I modified the assumptions she used in her analysis, but maintained the same analytical structure as she employed. My results differ from hers, showing that the sale and PPA are not as advantageous as her analysis indicates and may, in fact, be more expensive for Washington consumers.

Q. What are Ms. Song's conclusions about the benefits of the sale and PPA?

A. In Confidential Exhibit CLS-09C, Ms. Song compares the cost of continued ownership with the estimated cost of the PPA until 2025, supplemented with energy purchased at Mid-C and seasonal capacity purchased in the market. In her non-confidential supplemental testimony filed on August 20, 2020, Ms. Song concludes that the net present value of savings from the transaction ranges from $6 million to $33 million, depending on whether Puget hedges its market purchases.[18]

As the Commission probably knows, Ms. Song's calculations of the net present value ("NPV") of savings from the proposed transaction have changed several times since her original analysis was presented to the Puget board of directors in July 2019. The changes were not caused by any errors, but by updates in the assumptions and inputs and modifications to the method of analysis.

The following table lists the date of the estimate and the series of values for the NPV of savings with and without hedging market purchases:

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[18] Song, Exh. CLS-08T at 8-9.

Analyses of Cindy L. Song		
Date of Analysis	**Savings -- No Hedge**	**Savings -- Hedge**
July 22, 2019[19]	$25 million	
August 23, 2019[20]	$59 million	$25 million
August 29, 2019[21]	$94 million	$61 million
September 11, 2019[22]	$58 million	$37 million
October 21, 2019[23]	$46 million	$25 million
August 20, 2020[24]	$33 million	$6 million

Q. What results did you obtain in your analysis?

A. After modifying a single input assumption, and making changes to a few conforming spreadsheet formulas, I repeated the analysis used in Ms. Song's most recent testimony. I conclude that the savings are smaller than her results, even negative. Here is a parallel table to the previous:

Analysis of Ron Binz		
Date of Analysis	**Savings -- No Hedge**	**Savings -- Hedge**
September 22, 2020	$27 million	($8 Million)

19 Song, Exh. CLS-03 at 1.
20 Song, Exh. CLS-04 at 1.
21 Song, Exh. CLS-05 at 1.
22 Song, Exh. CLS-06 at 1.
23 Song, Exh. CLS-07 at 1.
24 Song, Exh. CLS-08T at 8-9.

Q. Please explain the adjustments you made to the assumptions used in Ms. Song's analysis.

A. To review, Ms. Song's analysis compared two quantities:

(1) The cost of maintaining PSE's ownership of Colstrip Unit 4 for the period December 17, 2020 to December 31, 2025.

and

(2) The cost of the 258-week PPA with NWE and Talen from December 17, 2020 to December 2, 2025, plus the cost of replacement power purchased in the market sufficient to match the energy not taken at Colstrip Unit 4, plus the purchase of required seasonal capacity. A subcase was created in which Puget purchases a hedge for the market energy purchases.

The difference between my analysis and Ms. Song's concerns the costs of maintaining ownership of the Colstrip unit. I believe that her analysis understated the amount of energy that would be taken from Colstrip Unit 4 from December 17, 2020 to December 2, 2025 under the ownership assumption. Understating the MWh reduces the cost of ownership case in total but raises the cost of ownership per MWh. Since case (2) is assumed to match the number of MWh in case (1), understating the MWh taken makes the total cost of ownership more expensive than the suite of energy and demand services in case (2), leading to a claim of savings.

Q. How does Puget's assumption about the energy taken annually from Colstrip Unit 4 in the ownership case compare with Puget's actual historic take?

A. Using Puget's annual Greenhouse Inventory publications for the years 2015 to 2019, we know that Puget's average energy take from Colstrip Unit 4 was 1,264,203 MWh,

equivalent to a 78% capacity factor (percentage of maximum output).[25] However, in her modeling analysis, Ms. Song assumes that the average annual take falls to 1,019,326 MWh, equivalent to a 63% average capacity factor for years 2021 to 2025.[26]

Q. Why is this important to understanding the analysis?

A. Costs at a power plant can be divided into fixed costs and variable costs. Variable costs vary with the number of MWhs produced. Fixed costs do not vary with output. Logically, if more MWhs are produced, the average cost per MWh goes down since the fixed costs will be spread over more MWhs. By assuming only 63% of potential MWh are taken, Ms. Song's analysis raises the average cost of each MWh. To illustrate,

(1) 1,019,326 MWh would cost [redacted] [Song]
while
(2) 1,264,203 MWh would cost [redacted] [Binz]
This means that the additional
(3) 244,877 MWh would cost only [redacted]

Thus, the 244,877 MWh "left on the table" by the assumption of a lower take at CU4 during the ownership can be had for $[redacted]/MWh, a cost that is much less than the cost of the PPA and less than the cost of market purchases.

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[25] Puget Sound Energy, 2019 Greenhouse Inventory, (June 2020) available at https://www.pse.com/pages/greenhouse-gas-policy. The reports for years 2015-2018 are available at the same URL.

[26] Song, Exh.CLS-09C at 3.

By understating the MWh take from CU4, Ms. Song's analysis overstates the relative merits of the Sale and Purchase arrangement. I have re-run her analysis using a MWh level from CU4 that matches PSE's average historic take. My analysis shows that the Sale and Purchase option, when the take assumption is corrected, has a lower NPV of savings, and is actually *more* costly when Puget is assumed to hedge their market purchase.

Q. Have you prepared an exhibit showing your calculation of the net benefits or net costs of the proposed sale and PPA?

A. Yes. I have prepared several exhibits explaining how my analysis was developed.

Q. Do you have an exhibit that shows Puget's historic level of generation taken from Colstrip Unit 4?

A. Yes. The following table shows the year-to-year energy takes by Puget from CU4 and the other Colstrip units. The data are taken from Puget's series of Greenhouse Gas Inventory reports[27] and are included in the following table.

[27] Puget Sound Energy, 2019 Greenhouse Inventory, (June 2020) available at https://www.pse.com/pages/greenhouse-gas-policy. The reports for years 2015-2018 are available at the same URL.

Annual Energy Take by Puget Sound Electric from Colstrip Units											
Colstrip Unit	MW	Max Gen	PSE Share	2014	2015	2016	2017	2018	2019	Average	Capacity Factor
Unit 1	307	2,689,320	1,344,660	1,048,364	941,355	841,044	856,480	841,150	738,901	877,882	65.29%
Unit 2	307	2,689,320	1,344,660	1,065,682	815,503	969,335	1,051,852	925,969	898,946	954,548	70.99%
Unit 3	740	6,482,400	1,620,600	1,136,670	1,363,087	1,272,211	1,195,618	1,151,150	1,354,739	1,245,579	76.86%
Unit 4	740	6,482,400	1,620,600	1,258,851	1,375,087	1,166,248	1,359,755	1,166,627	1,258,653	1,264,203	78.01%

As can be seen by inspection, Puget's energy take from CU4 over the past 6 years ranges from 1,166,248 MWh to 1,375,087 MWh per year. The average is 1,264,203 MWh and the average capacity factor is 78.01% of the maximum capacity of Colstrip Unit 4. The table is also included as Exh. RJB-03.

Q. Have you prepared an exhibit that shows the projected number of MWh taken from Colstrip Unit 4 assumed by Ms. Song in her analysis?

Yes. Exh. RJB-04 contains a table, copied from the redacted version of Ms. Song's Exhibit CLS-09C, showing her estimate of Puget's MWh take for each year in the Continued Ownership case that is used in the comparison to the Sale and Purchase case. For ease of access, I included the table below. As one can see, the estimate of annual MWh take from Colstrip Unit 4 used by Ms. Song varies from 995,692 to 1,051,979. The average is 1,019,326 and the average capacity factor is 62.9%.

Compare this to the 6-year average in the previous table. Ms. Song's assumed take is 19% lower than the 6-year average of 2014 to 2019 shown in Exh. RJB-03.

Similarly, the capacity factor in Exhibit CLS-09(C) is 19% lower than the average over these six years.

$ in millions	12/31/2021	12/31/2022	12/31/2023	12/31/2024	12/31/2025	Average
PSE's share of unit 4 capacity	185 MW	185 MW	185 MW	185 MW	185 MW	185MW
PSE's take (MWh)	1,043,373	999,978	1,005,609	995,692	1,051,979	1,019,326

Capacity Factor: 1,019,326/(185 x 8760) = 62.9%

Q. What effect does changing the assumed energy take from Colstrip Unit 4 have on the relative value of the proposed Sale and Purchase agreement?

A. By using PSE's historic average energy take from Colstrip Unit 4, the relative costs and benefits of the "Maintain Ownership" and "Sale and Purchase" options change. The NPV of benefits from the Sale and Purchase option shrinks from the $33 million reported by Ms. Song to $27 million. In the subcase where PSE employs a hedge for the needed market purchases, the advantage of the Sale and Purchase option shrinks from $6 million to (negative) -$8 million. In other words, it would be more expensive to sell Puget's ownership of CU4 to NWE for 50 cents, buy back 90 MW in two PPAs with NWE and Talen and make hedged market purchases, compared to maintaining ownership of CU4 until 2025.

Q. How did you calculate the reduced savings that arise from the changes to the assumptions you made?

A. I used the same spreadsheet model – Exhibit CLS-09C – used by Ms. Song to estimate savings. I replaced the assumed MWh take and made required changes to other relationships among the data. The result is shown in Exh. RJB-05C, an

adaptation of Ms. Song's spreadsheet file submitted with her revised supplemental testimony.

Ms. Song's spreadsheet model is relatively complicated. To show my changes and their effects, I added a new worksheet to her original workbook called "Legend."[28] That new worksheet explains two conventions for shading cell entries to show the changes I made to her original worksheets.[29] One color designates the new data and changes to formulas that I added to her worksheets.[30] The other color designates the cells that change in value due to spreadsheet calculations and data relationships that were put into the original spreadsheet by Ms. Song.[31] I maintained all other shading of confidential material put in by Puget.

Q. Please repeat your results.

A. My analysis shows that the NPV "savings" due to the Sale and Purchase Agreement are between $27 million and ($8.0) million over 5 years, depending on whether Puget hedges the market purchases required to replace the energy lost in the sale of CU4.[32]

Q. Does this mean that the hedged case might cost customers more?

Yes, by an average of $8 million per year for five years. However, the absolute change in customer bills will be relatively small in all cases, including the two cases from Ms. Song and two from my analysis.

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28 Binz, Exh. RJB-05C.
29 *Id.*
30 *Id.*
31 *Id.*
32 *Id.*

On its website, Puget illustrates a typical residential bill. For monthly usage of 1000 kWh, Puget calculates the bill to be about $102.82.[33] We know that Puget's electric revenues in 2018 were $2,443 million.[34] The following table shows the impact on an average residential customer bill of the various (nominal) net savings or net costs of the Sale and Purchase plan, relative to maintaining Colstrip Unit 4 ownership. (Total revenues for Puget updated to 2020 would yield virtually the same results.)

Total 2018 Revenues (Millions)	Hedge?	5-year NPV Savings/Costs (Millions)	Nominal Annual Savings/Costs (Millions)	Nominal Pct Savings/Costs	Average Monthly Bill	Monthly Bill Impact
$2,443	No	$33	8.23	0.34%	102.82	$0.35
$2,443	No	$27	6.84	0.28%	102.82	$0.29
$2,443	Yes	$6	1.68	0.07%	102.82	$0.07
$2,443	Yes	($8)	(1.69)	-0.07%	102.82	($0.07)

Q. What's the bottom-line lesson from these numbers?

A. As one can see by inspection, the customer bill impact of accepting or rejecting the proposed Sale and Purchase will be small. I recommend the Commission focus on the two "hedging" options since maintaining Colstrip Unit 4 physical ownership is more like hedging than not. Depending on the assumptions, this means that the

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[33] Puget Sound Energy, Summary of Total Current Prices – Electric, available at https://www.pse.com/pages/rates/schedule-summaries#sort=%40fdocumentdate43883%20descending.

[34] Washington Utilities and Transportation Commission, Financial Data for Regulated Electric Companies, available at https://www.utc.wa.gov/regulatedIndustries/utilities/energy/Pages/financialDataForElectricCompanies.aspx.

decision to accept the Sale and Purchase would benefit the average residential customer by about 7 cents per month or, following my analysis, cost the average residential customer about 7 cents per month. While this may not amount to a significant addition to customer bills, it does not appear to pass the WUTC's "no harm" test.

V. CONCLUSION

Q. In conclusion, what is your recommendation to the Commission?

A. As I have shown in this testimony, the possible benefits or costs of the proposed Sale and Purchase Agreement of the generation assets in terms of customer bills are small. For the average residential consumer, the change in monthly bills would be a few pennies either way. If the Commission is inclined to reject the Sale and Purchase Agreement, it can do so without being concerned about the impact on customers' bills.

Q. Do you think the Commission would be justified in rejecting this Sale and Purchase Agreement?

A. Yes, I do. As a former commissioner, I am troubled that Puget is not fulfilling the purposes of CETA by selling its 25% interest in Colstrip Unit 4 to parties who say they will try to keep the unit running until 2042. I doubt that is what the Washington State Legislature and Governor had in mind when passing and signing CETA into law. The proposed transaction is only marginally beneficial or harmful from a customer cost perspective, depending on which analysis you accept – mine or Ms. Song's – so the Commission's decision need not turn on the impact on utility rates. From a greenhouse gas emissions perspective, at best, the Sale and Purchase merely moves the emissions around; at worst, it increases greenhouse gas

emissions. In this regard, I consider the Sale and Purchase to be inconsistent with the WUTC's public interest standard.

A final consideration is an aspect of the transaction that I did not address: the sale of transmission assets. Mr. Michael Goggin is testifying on behalf of NWEC/RNW on this topic.[35] His recommendation may help the Commission decide how to rule on the package of proposals.

Q. Does this complete your testimony at this time?

A. Yes.

[35] Goggin, Exh. MSG-1T.