

Exh. JLB-2r
Dockets UE-170033/UG-170034
Witness: Jason L. Ball

**BEFORE THE WASHINGTON
UTILITIES AND TRANSPORTATION COMMISSION**

**WASHINGTON UTILITIES AND
TRANSPORTATION COMMISSION,**

Complainant,

v.

PUGET SOUND ENERGY,

Respondent.

**DOCKETS UE-170033 and
UG-170034 (*Consolidated*)**

**EXHIBIT TO
TESTIMONY OF**

Jason L. Ball

**STAFF OF
WASHINGTON UTILITIES AND
TRANSPORTATION COMMISSION**

*Comparison of Staff and Company Electric Cost of Service Study Results
and Rate Design Proposals*

**June 30, 2017
Revised August 22, 2017**

Comparison of COSS Results - Parity Ratios

	Company (Supplemental)	Staff	
Staff Primary Proposal	Residential	95%	95%
	General Service, < 51 kW	109%	108%
	General Service, 51 – 350 kW	108%	107%
	General Service, >350 kW	108%	107%
	Primary Service, Gen & Irr.	109%	106%
	Primary Service, Schools	104%	101%
	Campus Rate	95%	99%
	High Voltage	109%	111%
	Lighting Service	97%	97%
	Choice/Retail Wheeling	65%	66%
	Firm Resale	47%	47%

	Results	Difference from Company	Difference from Staff Primary Proposal	
Staff Alternative Analysis (No Transformers in Basic Charge)	Residential	95%	0.440%	0.000%
	General Service, < 51 kW	108%	-0.605%	0.000%
	General Service, 51 – 350 kW	107%	-0.981%	0.000%
	General Service, >350 kW	107%	-0.946%	0.000%
	Primary Service, Gen & Irr.	106%	-2.546%	0.000%
	Primary Service, Schools	101%	-2.992%	0.000%
	Campus Rate	99%	3.551%	0.000%
	High Voltage	111%	1.597%	0.000%
	Lighting Service	97%	-0.088%	0.000%
	Choice/Retail Wheeling	66%	1.415%	0.000%
	Firm Resale	47%	-0.197%	0.000%

	Results	Difference from Company	Difference from Staff Primary Proposal	
Staff Alternative Analysis (Schedule 40 Removed)	Residential	95%	0.178%	-0.262%
	General Service, < 51 kW	108%	-0.855%	-0.250%
	General Service, 51 – 350 kW	107%	-1.092%	-0.111%
	General Service, >350 kW	110%	2.300%	3.247%
	Primary Service, Gen & Irr.	106%	-2.686%	-0.140%
	Campus Rate		REMOVED	
	High Voltage	96%	-12.647%	-14.244%
	Lighting Service	97%	-0.492%	-0.404%
	Choice/Retail Wheeling	63%	-2.471%	-3.886%
	Firm Resale	47%	-0.304%	-0.107%

Customer Class	Company (Supplemental)	Staff Primary Proposal	Staff Alternative Analysis (No Transformers in Basic Charge)	Staff Alternative Analysis (Third Block)	Staff Alternative Analysis (Third Block with No Transformers in Basic charge)
<u>Residential Service</u>					
Basic Charge (\$ / Month) - One Phase	\$ 9.00	\$ 7.87	\$ 7.80	\$ 10.88	\$ 7.80
Basic Charge (\$ / Month) - Three Phase	\$ 21.60	\$ 18.90	\$ 18.70	\$ 26.10	\$ 18.70
Minimum Bill (\$ / Month) - 35 kWh's	\$ -	\$ 3.01	\$ -	\$ -	\$ -
Summer Energy Charge (\$ / kWh) - First 600 kWh	\$ 0.091770	\$ 0.086107	\$ 0.086216	\$ 0.086216	\$ 0.086216
Summer Energy Charge (\$ / kWh) - Over 600 kWh	\$ 0.111693	\$ 0.100917	\$ 0.101045	\$ 0.101045	\$ 0.101045
Winter Energy Charge (\$ / kWh) - First 600 kWh	\$ 0.091770	\$ 0.086107	\$ 0.086216	\$ 0.086216	\$ 0.086216
Winter Energy Charge (\$ / kWh) - Over 600 kWh	\$ 0.111693	\$ 0.109528	\$ 0.109667	\$ 0.109667	\$ 0.109667
Energy Charge (\$ / kWh) - First Block 800 kWh					
Energy Charge (\$ / kWh) - Second Block Next 1000 kWh					
Energy Charge (\$ / kWh) - Third Block Over 1800 kWh					
<u>General Service (Secondary Voltage, Demand 50 kW and less)</u>					
Basic Charge (\$ / Month) - One Phase	\$ 10.26	\$ 9.81		\$ 0.082148	\$ 0.085841
Basic Charge (\$ / Month) - Three Phase	\$ 26.08	\$ 24.92		\$ 0.105271	\$ 0.108453
Energy Charge (\$ / kWh) - Oct to Mar - All kWh	\$ 0.095044	\$ 0.090819		\$ 0.127174	\$ 0.130216
Energy Charge (\$ / kWh) - Apr to Sep - All kWh	\$ 0.091749	\$ 0.087671			
<u>General Service (Secondary Voltage, Demand > 50 kW and <= 350 kW)</u>					
Basic Charge (\$ / Month)	\$ 54.90	\$ 52.45			
Energy Charge (\$ / kWh) - Oct to Mar - First 20,000 kWh	\$ 0.095164	\$ 0.090933			
Energy Charge (\$ / kWh) - Apr to Sep - First 20,000 kWh	\$ 0.086513	\$ 0.082667			
Energy Charge (\$ / kWh) - All Over 20,000 kWh	\$ 0.068071	\$ 0.065045			
Demand Charge (\$ / kW) - All - First 50 kW	\$ -	\$ -			
Demand Charge (\$ / kW) - Oct to Mar - Over 50 kW	\$ 9.57	\$ 9.15			
Demand Charge (\$ / kW) - Apr to Sep - Over 50 kW	\$ 6.39	\$ 6.10			
Reactive Power Charge (\$ / kVarh)	\$ 0.00301	\$ 0.00287			
<u>General Service (Secondary Voltage, Demand > 350 kW)</u>					
Basic Charge (\$ / Month)	\$ 110.98	\$ 106.05			
Energy Charge (\$ / kWh) - all kWh	\$ 0.060011	\$ 0.057344			
Demand Charge (\$ / kW) - Oct to Mar	\$ 12.50	\$ 11.94			
Demand Charge (\$ / kW) - Apr to Sep	\$ 8.34	\$ 7.96			
Reactive Power Charge (\$ / kVarh)	\$ 0.00132	\$ 0.00126			

Staff Alternative Analysis
(No Transformers in Basic Charge)

Staff Alternative Analysis
(Third Block)

Staff Alternative Analysis
(Third Block with No Transformers in Basic charge)

Company (Supplemental)	Staff Primary Proposal
\$ 249.72	\$ 238.62
\$ (0.41)	\$ (0.39)
\$ 3.93%	\$ 3.93%
\$ 360.70	\$ 344.67
\$ 12.09	\$ 11.55
\$ 7.93	\$ 7.57
\$ 0.057653	\$ 0.055090
\$ 0.00127	\$ 0.00121

Customer Class	Company (Supplemental)	Staff Primary Proposal
Primary Voltage Adjustment		
Basic Charge (in addition to Secondary Voltage Rate)	\$ 249.72	\$ 238.62
Demand Charge (credit per kW to all Demand Rates)	\$ (0.41)	\$ (0.39)
Energy & Reactive Power Credit (% reduction to all base rates)	\$ 3.93%	\$ 3.93%
Effective Basic Charge	\$ 360.70	\$ 344.67
Effective Demand Charge - Winter	\$ 12.09	\$ 11.55
Effective Demand Charge - Summer	\$ 7.93	\$ 7.57
Effective Energy Charge	\$ 0.057653	\$ 0.055090
Effective Reactive Power Charge	\$ 0.00127	\$ 0.00121

General Service (Secondary Voltage, Demand > 50 kW and <= 350 kW)	Company (Supplemental)	Staff Primary Proposal
Basic Charge (\$ / Month) - One Phase	\$ 10.16	\$ 9.71
Basic Charge (\$ / Month) - Three Phase	\$ 25.80	\$ 24.65
Energy Charge (\$ / kWh) - Oct to Mar - First 20,000 kWh	\$ 0.095175	\$ 0.090944
Energy Charge (\$ / kWh) - Oct to Mar - Over 20,000 kWh	\$ 0.072283	\$ 0.069070
Energy Charge (\$ / kWh) - Apr to Sep - First 20,000 kWh	\$ 0.065951	\$ 0.063019
Energy Charge (\$ / kWh) - Apr to Sep - Over 20,000 kWh	\$ 0.056509	\$ 0.053997
Demand Charge (\$ / kW) - All - First 50 kW	\$ -	\$ -
Demand Charge (\$ / kW) - Oct to Mar - Over 50 kW	\$ 9.38	\$ 8.96
Demand Charge (\$ / kW) - Apr to Sep - Over 50 kW	\$ 4.62	\$ 4.42
Reactive Power Charge (\$ / kVarh)	\$ 0.00299	\$ 0.00285

\$ 360.70	\$ 344.67
\$ 0.057735	\$ 0.055169
\$ 12.03	\$ 11.49
\$ 8.02	\$ 7.66
\$ 0.00113	\$ 0.00108

General Service (Primary Voltage)	Company (Supplemental)	Staff Primary Proposal
Basic Charge (\$ / Month)	\$ 360.70	\$ 344.67
Energy Charge (\$ / kWh) - All kWh	\$ 0.057735	\$ 0.055169
Demand Charge (\$ / kW) - Oct to Mar	\$ 12.03	\$ 11.49
Demand Charge (\$ / kW) - Apr to Sep	\$ 8.02	\$ 7.66
Reactive Power Charge (\$ / kVarh)	\$ 0.00113	\$ 0.00108

\$ 360.70	\$ 344.67
\$ 0.051631	\$ 0.049336
\$ 4.77	\$ 4.56
\$ 3.18	\$ 3.04
\$ 0.00115	\$ 0.00110

Seasonal Irrigation & Drainage Service (Primary Voltage)	Company (Supplemental)	Staff Primary Proposal
Basic Charge (\$ / Month)	\$ 360.70	\$ 344.67
Energy Charge (\$ / kWh) - All kWh	\$ 0.051631	\$ 0.049336
Demand Charge (\$ / kW) - Oct to Mar - All kW	\$ 4.77	\$ 4.56
Demand Charge (\$ / kW) - Apr to Sep - All kW	\$ 3.18	\$ 3.04
Reactive Power Charge (\$ / kVarh)	\$ 0.00115	\$ 0.00110

Staff Alternative Analysis
(No Transformers in Basic Charge)

Staff Alternative Analysis
(Third Block)

Staff Alternative Analysis
(Third Block with No Transformers in Basic charge)

Customer Class

Company (Supplemental)

Staff Primary Proposal

Customer Class	Company (Supplemental)	Staff Primary Proposal	Staff Alternative Analysis (No Transformers in Basic Charge)	Staff Alternative Analysis (Third Block)	Staff Alternative Analysis (Third Block with No Transformers in Basic charge)
<u>Interruptible Service for All Electric Schools (Primary Voltage)</u>					
Basic Charge (\$ / Month)	\$ 360.70	\$ 344.67			
Energy Charge (\$ / kWh) - All kWh	\$ 0.061162	\$ 0.057189			
Demand Charge (\$ / kW) - All kW	\$ 5.05	\$ 4.82			
Critical Demand Charge (\$ / kW) - All kW (Sch 43 vs. Winter 31)	\$ 6.98	\$ 6.67			
Reactive Power Charge (\$ / kVarh)	\$ 0.00319	\$ 0.00305			
<u>Interruptible Service (High Voltage)</u>					
Energy Charge (\$ / kWh) - All kWh	\$ -0.057812	\$ 0.050886			
Demand Charge (\$ / kVa)	\$ 2.22	\$ 3.09			
Minimum Charge - Demand	\$ 26.64	\$ 37.05			
Minimum Charge - Energy	\$ 0.052031	\$ 0.045797			
<u>General Service (High Voltage)</u>					
Energy Charge (\$ / kWh) - All kWh	\$ 0.057812	\$ 0.050886			
Demand Charge (\$ / kVa)	\$ 3.93	\$ 5.47			
<u>Power Supplier Choice & Back Up Distribution Service</u>					
Primary Voltage					
Customer Charge (\$ / Month)	\$ 2,165.00	\$ 2,165.00			
Distribution Charge (\$ / kVa Month)	\$ -	\$ -			
High Voltage					
Customer Charge (\$ / Month)	\$ 2,165.00	\$ 2,165.00			
Distribution Charge (\$ / kVa Month)	\$ -	\$ -			
<u>Retail Wheeling Service & Back Up Distribution Service</u>					
Primary Voltage					
Customer Charge (\$ / Month)	\$ 2,165.00	\$ 2,165.00			
Distribution Charge (\$ / kVa Month)	\$ -	\$ -			
High Voltage					
Customer Charge (\$ / Month)	\$ 2,165.00	\$ 2,165.00			
Distribution Charge (\$ / kVa Month)	\$ -	\$ -			

Customer Class

Campus Rate For Large Loads

Basic Charge (\$ / Month)

Secondary Voltage - Medium Demand
Secondary Voltage - Large Demand
Primary Voltage

Prod/Trans Energy Charge (\$ / kWh) - All kWh

Secondary Voltage - Medium Demand
Secondary Voltage - Large Demand
Primary Voltage
High Voltage

Prod/Trans Non Coincident Demand Charge (\$ / kW)

Secondary Voltage
Primary Voltage
High Voltage

Reactive Power Charge (\$ / kVarh)

Secondary Voltage
Primary Voltage

Substation O&M Rate

Substation A&G OH Rate
Substation A&G Rate
Overhead Feeder O&M Rate
Underground Feeder O&M Rate

Substation Land Fixed Charge Rate (FCR)

Interim Distribution Charge:

Primary Voltage Consumption
Secondary Voltage Consumption (> 350 kW Peak Demand)
Secondary Voltage Consumption (<= 350 kW Peak Demand)

Staff COSS with
Schedule 40

Staff COSS without
Schedule 40

Difference

\$	52.45	\$	-	-100.0000%
\$	106.05	\$	-	-100.0000%
\$	344.67			-100.0000%
\$	0.054004			-100.0000%
\$	0.054004			-100.0000%
\$	0.051879			-100.0000%
\$	0.050886			-100.0000%
\$	6.11			-100.0000%
\$	5.86			-100.0000%
\$	5.75			-100.0000%
\$	0.00126			-100.0000%
\$	0.00108			-100.0000%
	6.0210%			-100.0000%
	44%			-100.0000%
	2.6492%			-100.0000%
	22.73%			-100.0000%
	4.93%			-100.0000%
	10.6819%			-100.0000%
\$	0.011737			-100.0000%
\$	0.009893			-100.0000%
\$	0.014947			-100.0000%

Customer Class	Staff COSS <i>with</i> <i>Schedule 40</i>	Staff COSS <i>without</i> <i>Schedule 40</i>	Difference
<u>Residential Service</u>			
Basic Charge (\$ / Month) - One Phase	\$ 7.87	\$ 7.86	-0.107%
Basic Charge (\$ / Month) - Three Phase	\$ 18.90	\$ 18.90	0.000%
Minimum Bill (\$ / Month) - 35 kWh's	\$ 3.01	\$ 3.01	0.000%
Summer Energy Charge (\$ / kWh) - First 600 kWh	\$ 0.086107	\$ 0.086301	0.224%
Summer Energy Charge (\$ / kWh) - Over 600 kWh	\$ 0.100917	\$ 0.101144	0.224%
Winter Energy Charge (\$ / kWh) - First 600 kWh	\$ 0.086107	\$ 0.086301	0.224%
Winter Energy Charge (\$ / kWh) - Over 600 kWh	\$ 0.109528	\$ 0.109774	0.224%
<u>General Service (Secondary Voltage, Demand 50 kW and less)</u>			
Basic Charge (\$ / Month) - One Phase	\$ 9.81	\$ 9.82	0.102%
Basic Charge (\$ / Month) - Three Phase	\$ 24.92	\$ 24.97	0.200%
Energy Charge (\$ / kWh) - Oct to Mar - All kWh	\$ 0.090819	\$ 0.090955	0.150%
Energy Charge (\$ / kWh) - Apr to Sep - All kWh	\$ 0.087671	\$ 0.087802	0.149%
<u>General Service (Secondary Voltage, Demand > 50 kW and <= 350 kW)</u>			
Basic Charge (\$ / Month)	\$ 52.45	\$ 52.55	0.190%
Energy Charge (\$ / kWh) - Oct to Mar - First 20,000 kWh	\$ 0.090933	\$ 0.091069	0.149%
Energy Charge (\$ / kWh) - Apr to Sep - First 20,000 kWh	\$ 0.082667	\$ 0.082791	0.150%
Energy Charge (\$ / kWh) - All Over 20,000 kWh	\$ 0.065045	\$ 0.065143	0.150%
Demand Charge (\$ / kW) - All - First 50 kW	\$ -	\$ -	
Demand Charge (\$ / kW) - Oct to Mar - Over 50 kW	\$ 9.15	\$ 9.16	0.109%
Demand Charge (\$ / kW) - Apr to Sep - Over 50 kW	\$ 6.10	\$ 6.11	0.164%
Reactive Power Charge (\$ / kVarh)	\$ 0.00287	\$ 0.00288	0.347%
<u>General Service (Secondary Voltage, Demand > 350 kW)</u>			
Basic Charge (\$ / Month)	\$ 106.05	\$ 106.21	0.151%
Energy Charge (\$ / kWh) - all kWh	\$ 0.057344	\$ 0.057429	0.148%
Demand Charge (\$ / kW) - Oct to Mar	\$ 11.94	\$ 11.96	0.167%
Demand Charge (\$ / kW) - Apr to Sep	\$ 7.96	\$ 7.98	0.251%
Reactive Power Charge (\$ / kVarh)	\$ 0.00126	\$ 0.00126	0.000%

Customer Class

Staff COSS with
Schedule 40

Staff COSS without
Schedule 40

Difference

Primary Voltage Adjustment

Basic Charge (in addition to Secondary Voltage Rate)	\$ 238.62	\$ 238.97	0.146%
Demand Charge (credit per kW to all Demand Rates)	\$ (0.39)	\$ (0.39)	0.000%
Energy & Reactive Power Credit (% reduction to all base rates)	\$ 3.93%	\$ 3.93%	0.000%
Effective Basic Charge	\$ 344.67	\$ 345.18	0.148%
Effective Demand Charge - Winter	\$ 11.55	\$ 11.57	0.173%
Effective Demand Charge - Summer	\$ 7.57	\$ 7.59	0.264%
Effective Energy Charge	\$ 0.055090	\$ 0.055172	0.149%
Effective Reactive Power Charge	\$ 0.00121	\$ 0.00121	0.000%

General Service (Secondary Voltage, Demand > 50 kW and <= 350 kW)

Basic Charge (\$ / Month) - One Phase	\$ 9.71	\$ 9.72	0.103%
Basic Charge (\$ / Month) - Three Phase	\$ 24.65	\$ 24.69	0.162%
Energy Charge (\$ / kWh) - Oct to Mar - First 20,000 kWh	\$ 0.090944	\$ 0.091080	0.149%
Energy Charge (\$ / kWh) - Oct to Mar - Over 20,000 kWh	\$ 0.069070	\$ 0.069173	0.149%
Energy Charge (\$ / kWh) - Apr to Sep - First 20,000 kWh	\$ 0.063019	\$ 0.063113	0.149%
Energy Charge (\$ / kWh) - Apr to Sep - Over 20,000 kWh	\$ 0.053997	\$ 0.054078	0.150%
Demand Charge (\$ / kW) - All - First 50 kW	\$ -	\$ -	
Demand Charge (\$ / kW) - Oct to Mar - Over 50 kW	\$ 8.96	\$ 8.98	0.223%
Demand Charge (\$ / kW) - Apr to Sep - Over 50 kW	\$ 4.42	\$ 4.42	0.000%
Reactive Power Charge (\$ / kVarh)	\$ 0.00285	\$ 0.00286	0.350%

General Service (Primary Voltage)

Basic Charge (\$ / Month)	\$ 344.67	\$ 345.18	0.148%
Energy Charge (\$ / kWh) - All kWh	\$ 0.055169	\$ 0.055251	0.148%
Demand Charge (\$ / kW) - Oct to Mar	\$ 11.49	\$ 11.51	0.174%
Demand Charge (\$ / kW) - Apr to Sep	\$ 7.66	\$ 7.68	0.260%
Reactive Power Charge (\$ / kVarh)	\$ 0.00108	\$ 0.00108	0.000%

Customer Class

Seasonal Irrigation & Drainage Service (Primary Voltage)

	Staff COSS with Schedule 40	Staff COSS without Schedule 40	Difference
Basic Charge (\$ / Month)	\$ 344.67	\$ 345.18	0.148%
Energy Charge (\$ / kWh) - All kWh	\$ 0.049336	\$ 0.049410	0.150%
Demand Charge (\$ / kW) - Oct to Mar - All kW	\$ 4.56	\$ 4.57	0.219%
Demand Charge (\$ / kW) - Apr to Sep - All kW	\$ 3.04	\$ 3.04	0.000%
Reactive Power Charge (\$ / kVarh)	\$ 0.00110	\$ 0.00110	0.000%

Interruptible Service for All Electric Schools (Primary Voltage)

Basic Charge (\$ / Month)	\$ 344.67	\$ 345.18	0.148%
Energy Charge (\$ / kWh) - All kWh	\$ 0.057189	\$ 0.057306	0.204%
Demand Charge (\$ / kW) - All kW	\$ 4.82	\$ 4.83	0.207%
Critical Demand Charge (\$ / kW) - All kW (Sch 43 vs. Winter 31)	\$ 6.67	\$ 6.68	0.150%
Reactive Power Charge (\$ / kVarh)	\$ 0.00305	\$ 0.00305	0.000%

Interruptible Service (High Voltage)

Energy Charge (\$ / kWh) - All kWh	\$ 0.050886	\$ 0.050886	0.000%
Demand Charge (\$ / kVa)	\$ 3.09	\$ 3.09	0.000%
Minimum Charge - Demand	\$ 37.05	\$ 37.05	0.000%
Minimum Charge - Energy	\$ 0.045797	\$ 0.045797	0.000%
General Service (High Voltage)			
Energy Charge (\$ / kWh) - All kWh	\$ 0.050886	\$ 0.050886	0.000%
Demand Charge (\$ / kVa)	\$ 5.47	\$ 5.47	0.000%

Customer Class

Power Supplier Choice & Back Up Distribution Service

Primary Voltage

Customer Charge (\$ / Month)
Distribution Charge (\$ / kVa Month)
High Voltage
Customer Charge (\$ / Month)
Distribution Charge (\$ / kVa Month)

	Staff COSS with Schedule 40	Staff COSS without Schedule 40	Difference
Customer Charge (\$ / Month)	\$ 2,165.00	\$ 2,165.00	0.000%
Distribution Charge (\$ / kVa Month)	\$ -	\$ -	0.000%
High Voltage			
Customer Charge (\$ / Month)	\$ 2,165.00	\$ 2,165.00	0.000%
Distribution Charge (\$ / kVa Month)	\$ -	\$ -	0.000%

Retail Wheeling Service & Back Up Distribution Service

Primary Voltage

Customer Charge (\$ / Month)
Distribution Charge (\$ / kVa Month)
High Voltage
Customer Charge (\$ / Month)
Distribution Charge (\$ / kVa Month)

	Staff COSS with Schedule 40	Staff COSS without Schedule 40	Difference
Customer Charge (\$ / Month)	\$ 2,165.00	\$ 2,165.00	0.000%
Distribution Charge (\$ / kVa Month)	\$ -	\$ -	0.000%
High Voltage			
Customer Charge (\$ / Month)	\$ 2,165.00	\$ 2,165.00	0.000%
Distribution Charge (\$ / kVa Month)	\$ -	\$ -	0.000%