

Exh. JL-3
Dockets UE-170033/UG-170034
Witness: Jing Liu

**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**

Jing Liu

**STAFF OF
WASHINGTON UTILITIES AND
TRANSPORTATION COMMISSION**

Calculation of Temperature Normalization Adjustment

June 30, 2017

Calculation of Electric Temperature Normalization Adjustment

Number of Customers by Rate Schedule

Rate Schedule	Oct-15	Nov-15	Dec-15	Jan-16	Feb-16	Mar-16	Apr-16	May-16	Jun-16	Jul-16	Aug-16	Sen-16
Schedule 7, 17, 27, 37 & 47	973,096	975,038	976,579	977,562	978,353	979,711	980,335	982,766	985,020	985,347	986,331	987,781
Schedule 8	29,007	29,516	29,558	29,543	29,511	29,569	29,599	29,667	29,748	29,766	29,741	29,742
Schedule 24 & 24L	87,422	87,496	87,582	87,778	87,893	88,069	88,166	88,413	88,906	89,078	89,316	89,528
Schedule 11	312	308	305	309	308	310	313	312	313	309	308	309
Schedule 25, 25L & 7A	6,768	6,772	6,760	6,761	6,767	6,756	6,753	6,755	6,752	6,732	6,707	6,698
Schedule 12	13	13	12	12	11	11	11	11	11	11	12	12
Schedule 26 & 26L	767	769	771	774	768	773	774	776	775	775	777	781
Schedule 10	13	13	13	13	13	13	13	13	13	13	13	13
Schedule 31	461	463	462	463	462	463	464	463	464	465	465	466
Schedule 29	556	518	501	496	493	500	496	493	500	500	493	466
Schedule 43	159	158	158	158	158	158	158	158	157	157	157	157
Schedule 40-25	38	37	39	39	39	39	41	39	39	40	39	43
Schedule 40-26	62	63	61	61	61	61	60	61	61	60	61	57
Schedule 40-31	31	31	31	31	31	31	30	31	31	31	31	31
Result	8	8	8	8	8	8	8	8	8	8	8	8

Temperature Deviation

	Oct-15	Nov-15	Dec-15	Jan-16	Feb-16	Mar-16	Apr-16	May-16	Jun-16	Jul-16	Aug-16	Sen-16
Normal HDD65	384.3	586.8	744.0	719.2	636.3	589.0	456.3	301.6	162.0	62.5	48.7	140.7
Actual HDD65	259.7	635.5	693.8	664.3	516.2	510.1	287.5	188.8	123.0	33.6	32.2	137.4
Difference	124.7	-48.7	50.2	55.0	120.1	78.8	168.8	112.8	39.1	28.9	16.5	3.3
Normal HDD60	231.5	436.8	589.0	564.2	491.3	454.1	308.8	165.9	57.0	8.8	3.8	44.3
Actual HDD60	108.1	485.5	538.8	509.3	371.2	355.1	161.3	78.0	34.9	0.7	0.0	23.9
Difference	123.4	-48.7	50.2	55.0	120.1	78.9	147.5	87.9	22.2	8.1	3.8	20.5
Normal HDD55	100.0	288.1	434.2	409.3	346.4	280.5	171.1	60.4	8.0	0.1	0.0	4.6
Actual HDD55	18.9	335.5	383.8	354.3	226.2	205.5	54.3	6.9	2.8	0.0	0.0	0.4
Difference	81.1	-47.5	50.4	55.0	120.2	75.0	116.8	53.5	5.2	0.1	0.0	4.2
Normal HDD45	2.8	55.6	145.7	128.4	92.3	41.5	9.1	0.4	0.0	0.0	0.0	0.0
Actual HDD45	0.0	91.5	107.3	79.9	16.3	7.3	0.0	0.0	0.0	0.0	0.0	0.0
Difference	2.8	-36.0	38.5	48.4	76.0	34.2	9.1	0.4	0.0	0.0	0.0	0.0
Normal CDD60	2.2	0.0	0.0	0.0	0.0	0.1	2.7	25.6	70.2	172.5	174.4	71.2
Actual CDD60	3.5	0.0	0.0	0.0	0.0	0.0	36.1	58.8	111.7	178.2	249.4	36.8
Difference	-1.2	0.0	0.0	0.0	0.0	0.1	-33.3	-33.2	-41.5	-5.7	-75.0	34.4

Temperature Adjustment to Sales (KW/E)

	Oct-15	Nov-15	Dec-15	Jan-16	Feb-16	Mar-16	Apr-16	May-16	Jun-16	Jul-16	Aug-16	Sep-16	Test Year Total Adjustments
Schedule 7	57,607,337.22	(38,220,347)	33,830,925	35,254,689	75,718,512	44,582,448	73,304,023	24,337,280	(7,668,865)	(1,581,621)	(13,581,492)	7,724,015	291,310,493
Schedule 8	980,633	(462,906)	606,305	478,261	1,571,708	563,668	1,147,091	-	-	(394,216)	(332,460)	163,858	4,696,760
Schedule 24	4,126,347	(4,518,560)	3,816,276	3,890,199	9,180,484	4,767,833	5,356,678	-	(3,072,253)	(123,731)	(3,513,370)	1,962,820	21,001,954
Schedule 11	287,291	(286,479)	-	289,883	656,383	291,786	448,151	-	(2,691,488)	(16,340)	(192,249)	57,862	1,726,172
Schedule 25 and 7A	-	(2,367,161)	2,324,776	3,295,968	3,444,688	1,603,463	4,481,151	-	(2,691,488)	(325,197)	(4,488,919)	1,443,272	2,329,342
Schedule 12	59,758	(57,468)	49,354	52,335	92,557	82,144	82,144	25,480	(15,195)	(19,587)	(15,195)	316,442	316,442
Schedule 26	-	(440,878)	412,847	455,890	1,575,370	483,987	483,987	-	(1,557,700)	(189,094)	(2,795,891)	1,203,574	(851,894)
Schedule 10	-	(62,412)	65,722	43,558	130,062	51,369	88,278	-	(22,498)	(4,209)	(40,571)	298,380	298,380
Schedule 31	-	(561,533)	281,524	-	1,147,163	656,954	-	-	(541,230)	(93,677)	(1,107,855)	584,552	365,798
Schedule 29	-	-	-	-	-	-	-	-	-	-	-	-	-
Schedule 43	713,841	(550,210)	692,694	660,564	1,360,247	685,703	786,657	-	(11,119)	(1,992)	(21,692)	6,363	4,349,496
Schedule 40-25	27,224	(28,091)	22,836	22,836	28,528	16,051	46,237	-	(197,940)	(22,731)	(354,764)	168,680	135,054
Schedule 40-26	-	(154,451)	196,249	134,054	339,636	-	-	-	(266,947)	(24,428)	(419,537)	266,722	(247,272)
Schedule 40-31	-	(142,580)	-	-	339,498	-	-	-	-	-	-	-	-
Resale	29,205	(20,499)	20,063	17,200	37,360	25,199	45,834	21,314	(16,109,408)	(4,656,028)	(28,858,387)	13,582,404	306,855,802
Total	63,831,627	(47,873,575)	44,615,050	44,595,418	95,686,078	53,802,877	81,307,292	24,432,456	(16,109,408)	(4,656,028)	(28,858,387)	13,582,404	19,714,216,853

1.66%

Applicable Rates

Rate Schedule	Oct-15	Nov-15	Dec-15	Jan-16	Feb-16	Mar-16	Apr-16	May-16	Jun-16	Jul-16	Aug-16	Sep-16
Schedule 7	\$ 0.104157	\$ 0.104157	\$ 0.104157	\$ 0.104157	\$ 0.104157	\$ 0.104157	\$ 0.104157	\$ 0.104157	\$ 0.104157	\$ 0.104157	\$ 0.104157	\$ 0.104157
Schedule 8 and 24	\$ 0.089457	\$ 0.089457	\$ 0.089457	\$ 0.089457	\$ 0.089457	\$ 0.089457	\$ 0.089457	\$ 0.089457	\$ 0.089457	\$ 0.089457	\$ 0.089457	\$ 0.089457
Schedule 11 and 25	\$ 0.064072	\$ 0.064072	\$ 0.064072	\$ 0.064072	\$ 0.064072	\$ 0.064072	\$ 0.064072	\$ 0.064072	\$ 0.064072	\$ 0.064072	\$ 0.064072	\$ 0.064072
Schedule 12 and 26	\$ 0.056733	\$ 0.056733	\$ 0.056733	\$ 0.056733	\$ 0.056733	\$ 0.056733	\$ 0.056733	\$ 0.056733	\$ 0.056733	\$ 0.056733	\$ 0.056733	\$ 0.056733
Schedule 29	\$ 0.068036	\$ 0.068036	\$ 0.068036	\$ 0.068036	\$ 0.068036	\$ 0.068036	\$ 0.068036	\$ 0.068036	\$ 0.068036	\$ 0.068036	\$ 0.068036	\$ 0.068036
Schedule 10 and 31	\$ 0.054347	\$ 0.054347	\$ 0.054347	\$ 0.054347	\$ 0.054347	\$ 0.054347	\$ 0.054347	\$ 0.054347	\$ 0.054347	\$ 0.054347	\$ 0.054347	\$ 0.054347
Schedule 43	\$ 0.055894	\$ 0.055894	\$ 0.055894	\$ 0.055894	\$ 0.055894	\$ 0.055894	\$ 0.055894	\$ 0.055894	\$ 0.055894	\$ 0.055894	\$ 0.055894	\$ 0.055894
Schedule 40 Med See Voltage	\$ 0.056638	\$ 0.056638	\$ 0.056638	\$ 0.056638	\$ 0.056638	\$ 0.056638	\$ 0.056638	\$ 0.056638	\$ 0.056638	\$ 0.056638	\$ 0.056638	\$ 0.056638
Schedule 40 Large See Voltage	\$ 0.055191	\$ 0.055191	\$ 0.055191	\$ 0.055191	\$ 0.055191	\$ 0.055191	\$ 0.055191	\$ 0.055191	\$ 0.055191	\$ 0.055191	\$ 0.055191	\$ 0.055191
Schedule 40 Primary Voltage	\$ 0.035140	\$ 0.035140	\$ 0.035140	\$ 0.035140	\$ 0.035140	\$ 0.035140	\$ 0.035140	\$ 0.035140	\$ 0.035140	\$ 0.035140	\$ 0.035140	\$ 0.035140
Firm Resale	\$ 0.035140	\$ 0.035140	\$ 0.035140	\$ 0.035140	\$ 0.035140	\$ 0.035140	\$ 0.035140	\$ 0.035140	\$ 0.035140	\$ 0.035140	\$ 0.035140	\$ 0.035140

Effective September 30, 2015

End-Step Base Rates Only

Revenue Adjustment

	Oct-15	Nov-15	Dec-15	Jan-16	Feb-16	Mar-16	Apr-16	May-16	Jun-16	Jul-16	Aug-16	Sep-16	Test Year
Schedule 7	\$ 6,000,206	(3,980,917)	3,732,042	3,672,023	7,886,613	4,643,887	7,695,190	2,534,898	(798,766)	(164,737)	(1,622,922)	804,510	\$ 30,342,027
Schedule 8	87,725	(41,410)	54,238	42,784	140,600	50,424	99,113	-	-	-	(30,438)	14,511	\$ 417,187
Schedule 24	369,131	(404,217)	341,323	348,006	821,259	426,516	462,597	-	(265,341)	(34,044)	(303,411)	169,507	\$ 1,931,395
Schedule 11	18,407	(18,355)	18,695	18,573	42,056	20,107	28,714	-	(7,928)	(1,060)	(12,318)	3,707	\$ 110,599
Schedule 25 and 7A	-	(131,669)	148,933	211,179	220,708	102,737	282,714	-	(168,609)	(20,836)	(285,692)	92,473	\$ 149,246
Schedule 12	3,390	(3,260)	2,800	2,969	5,251	2,802	4,660	-	(862)	(132)	(1,111)	-	\$ 17,953
Schedule 26	-	(25,012)	23,422	25,864	89,375	27,458	-	-	(68,273)	(10,728)	(158,619)	68,282	\$ (48,330)
Schedule 29	-	-	-	-	-	-	-	-	-	-	-	-	\$ -
Schedule 10	-	(3,392)	3,572	2,367	7,068	2,792	4,836	-	(1,223)	(229)	(2,205)	-	\$ 16,216
Schedule 31	-	(30,518)	15,300	-	62,345	35,703	-	-	(29,420)	(5,091)	(60,209)	31,769	\$ 19,880
Schedule 43	39,899	(30,753)	38,717	36,922	76,030	38,327	43,969	-	-	-	-	-	\$ 243,111
Schedule 40-25	1,542	(1,591)	1,503	1,293	2,968	909	2,636	-	(630)	(113)	(1,229)	360	\$ 7,649
Schedule 40-26	-	(8,748)	11,115	7,591	21,502	-	-	-	(11,211)	(1,287)	(20,093)	9,554	\$ 8,493
Schedule 40-31	-	(7,869)	-	604	18,737	-	-	-	(14,733)	(1,348)	(23,155)	14,721	\$ (13,647)
Resale	1,026	(720)	705	604	1,313	885	1,611	749	-	-	-	-	\$ 6,197
Total	6,418,358	(4,820,912)	4,595,007	4,511,557	9,654,316	5,500,309	8,511,414	2,534,898	(798,766)	(164,737)	(1,622,922)	804,510	\$ 33,207,905