

BEFORE THE
WASHINGTON UTILITIES AND TRANSPORTATION COMMISSION

WASHINGTON UTILITIES AND
TRANSPORTATION COMMISSION,

Complainant,

v.

AVISTA CORPORATION, D/B/A
AVISTA UTILITIES,

Respondent

DOCKETS UE-240006
& UG-240007

EXHIBIT LDK-4
COST OF SERVICE STUDY

UTILITY COMPANY
Summary of Results
Service territory : Washington
Service: Electric
Time period : Twelve Months ended June 30, 2023, Pro Forma Rate Year 1

Line No.		Residential Service Sch 1	General Service Sch 11-12	Large Gen Service Sch 21-22	Extra Large Gen Service Sch 25	Pumping Service Sch 31-32	Street & Area Lights Sch 41-48	General Service EV Sch 13	Large Gen Service EV Sch 23	Total
1	Rate Base	1,326,314,880	315,219,844	447,643,239	122,335,641	53,544,212	41,794,808	839,028	2,125,348	2,309,817,000
2	Proposed Rate of Return	7.61%	7.61%	7.61%	7.61%	7.61%	7.61%	7.61%	7.61%	7.61%
3	Return Requirement	100,933,093	23,988,356	34,065,830	9,309,791	4,074,736	3,180,602	63,850	161,740	175,777,998
4	Total Operating Expenses (net of non-rate revenues)	253,223,272	61,923,299	89,849,296	31,754,171	10,119,363	4,423,646	111,629	268,325	451,673,000
5	Present Revenue from Rates	279,948,547	89,664,262	132,450,374	46,296,167	13,579,033	7,407,959	48,212	64,445	569,459,000
6	Net Income From Present Rates	26,725,275	27,740,963	42,601,078	14,541,997	3,459,670	2,984,314	(63,417)	(203,880)	117,786,000
7	Net Income Deficiency (Sufficiency)	73,943,644	(3,817,852)	(8,658,480)	(5,288,340)	604,237	198,300	127,293	365,701	57,474,503
8	Incremental Revenue Related Expenses	4,221,754	(166,512)	(271,786)	(229,633)	52,316	25,806	7,511	21,545	3,661,000
9	Incremental Income Taxes	14,130,079	598,544	436,323	(254,874)	263,270	168,882	19,302	54,473	15,416,000
10	Total Cost/Revenue Requirement at Unity	372,144,080	86,255,000	123,923,000	40,514,000	14,495,000	7,798,000	202,000	506,000	645,837,080
11	Revenue-to-Cost Ratio at Present Rates	0.75	1.04	1.07	1.14	0.94	0.95	0.24	0.13	0.88
12	Parity Ratio at Present Rates	0.85	1.18	1.21	1.30	1.06	1.08	0.27	0.14	1.00
13	Proposed Rate Revenue Increase	54,682,011	8,775,727	8,642,226	1,510,384	1,772,031	966,721	12,583	16,820	76,378,503
14	Proposed Revenue from Rates	334,630,558	98,439,989	141,092,600	47,806,551	15,351,064	8,374,680	60,795	81,265	645,837,503
15	Variance from Unity	(37,513,522)	12,184,989	17,169,600	7,292,551	856,064	576,680	(141,205)	(424,735)	422
					(3,241,151.5)					
16	Revenue-to Cost Ratio at Proposed Rates	0.90	1.14	1.14	1.18	1.06	1.07	0.30	0.16	1.00
17	Parity Ratio at Proposed Rates	0.90	1.14	1.14	1.18	1.06	1.07	0.30	0.16	1.00

Washington Electric											
Meter, Services, Meter Reading & Billing Costs by Schedule at Proposed Rate of Return											
			Total	Sch 1	Sch 11-12	Sch 21-22	Sch 25	Sch 30-32	Sch 41-48	Sch 13	Sch 23
5	369	Services	\$ 143,160,000	\$ 118,568,971	\$ 20,783,153	\$ 2,682,820	\$ -	\$ 1,125,031	\$ -	20	\$ 5
6	369	Services Accum. Depr.	\$ (57,493,000)	\$ (47,617,252)	\$ (8,346,506)	\$ (1,077,419)	\$ -	\$ (451,812)	\$ -	(8)	\$ (2)
7		Total Services	\$ 85,667,000	\$ 70,951,718	\$ 12,436,647	\$ 1,605,400	\$ -	\$ 673,219	\$ -	12	\$ 3
9	370	Meters	\$ 62,327,000	\$ 51,732,807	\$ 9,156,841	\$ 600,330	\$ 81,344	\$ 744,761	\$ -	6,650	\$ 4,267
10	370	Meters Accum. Depr.	\$ (14,756,000)	\$ (12,247,811)	\$ (2,167,894)	\$ (142,129)	\$ (19,258)	\$ (176,323)	\$ -	(1,574)	\$ (1,010)
11		Total Meters	\$ 47,571,000	\$ 39,484,997	\$ 6,988,947	\$ 458,201	\$ 62,085	\$ 568,438	\$ -	5,076	\$ 3,257
13	303.12	AMI/MDM Software	\$ 29,856,000	\$ 25,448,761	\$ 3,873,183	\$ 189,692	\$ 2,342	\$ 284,649	\$ 55,616	1,413	\$ 344
14	303.12	AMI/MDM Software Accum Amortization	\$ (20,632,000)	\$ (17,586,376)	\$ (2,676,564)	\$ (131,087)	\$ (1,619)	\$ (196,707)	\$ (38,433)	(976)	\$ (238)
15		Total Meters	\$ 9,224,000	\$ 7,862,385	\$ 1,196,618	\$ 58,605	\$ 724	\$ 87,942	\$ 17,182	\$ 436	\$ 106
17		Total Rate Base	\$ 142,462,000	\$ 118,299,100	\$ 20,622,212	\$ 2,122,207	\$ 62,809	\$ 1,329,599	\$ 17,182	\$ 5,524	\$ 3,366
19		Return on Rate Base @ 7.61%	\$ 10,841,358	\$ 9,002,562	\$ 1,569,350	\$ 161,500	\$ 4,780	\$ 101,183	\$ 1,308	420	\$ 256
20		Tax Benefit of Interest Expense	\$ (768,864)	\$ (638,457)	\$ (111,298)	\$ (11,453)	\$ (339)	\$ (7,176)	\$ (93)	(30)	\$ (18)
21		Revenue Conversion Factor	\$ <u>0.75248</u>	\$ 0.75248	\$ 0.75248	\$ 0.75248	\$ 0.75248	\$ 0.75248	\$ 0.75248	\$ 0.75248	\$ 0.75248
22		Rate Base Revenue Requirement	\$ 13,385,733	\$ 11,115,387	\$ 1,937,664	\$ 199,403	\$ 5,902	\$ 124,929	\$ 1,614	519	\$ 316
24	369	Services Depr Exp	\$ 2,896,000	\$ 2,398,545	\$ 420,425	\$ 54,271	\$ -	\$ 22,758	\$ -	0	\$ 0
25	370	Meters Depr Exp	\$ 4,038,000	\$ 3,351,631	\$ 593,247	\$ 38,894	\$ 5,270	\$ 48,251	\$ -	431	\$ 276
26	303.12	AMI/MDM Software Amort Exp	\$ 4,298,000	\$ 3,663,544	\$ 557,574	\$ 27,308	\$ 337	\$ 40,977	\$ 8,006	203	\$ 50
27	587-OP	Services Exp	\$ 855,000	\$ 708,134	\$ 124,124	\$ 16,023	\$ -	\$ 6,719	\$ -	0	\$ 0
28	586-OP	Meters Exp	\$ 2,831,000	\$ 2,349,793	\$ 415,920	\$ 27,268	\$ 3,695	\$ 33,828	\$ -	302	\$ 194
29	597-MT	Meters Exp	\$ 62,000	\$ 51,461	\$ 9,109	\$ 597	\$ 81	\$ 741	\$ -	7	\$ 4
30	902-OP	Meter Reading	\$ 715,000	\$ 592,182	\$ 103,800	\$ 13,399	\$ -	\$ 5,619	\$ -	0	\$ 0
31	903-OP	Billing Exp	\$ 5,630,000	\$ 4,798,919	\$ 730,373	\$ 35,771	\$ 442	\$ 53,677	\$ 10,488	266	\$ 65
32		Total Expenses	\$ 21,325,000	\$ 17,914,210	\$ 2,954,571	\$ 213,530	\$ 9,825	\$ 212,571	\$ 18,494	\$ 1,210	\$ 589
33		Revenue Conversion Factor	\$ <u>0.95251</u>	\$ 0.952506	\$ 0.952506	\$ 0.952506	\$ 0.952506	\$ 0.952506	\$ 0.952506	\$ 0.952506	\$ 0.952506
34		Expense Revenue Requirement	\$ 22,388,307	\$ 18,807,449	\$ 3,101,892	\$ 224,177	\$ 10,314	\$ 223,170	\$ 19,416	1,270	\$ 618
36		Total Customer Costs	\$ 35,774,040	\$ 29,922,835	\$ 5,039,556	\$ 423,580	\$ 16,216	\$ 348,099	\$ 21,030	\$ 1,789	\$ 935
38		Total Customers Bills	3,212,371	2,738,172	416,737	20,410	252	30,627	5,984	152	37
40		Avg Unit Cost	\$ 11.14	\$ 10.93	\$ 12.09	\$ 20.75	\$ 64.35	\$ 11.37	\$ 3.51	\$ 11.77	\$ 25.26
44		Total Customer Related Cost	\$92,674,601	\$72,686,414	\$11,916,424	\$846,784	\$36,576	\$856,379	\$6,324,999	\$4,781	\$2,243
45		Customer Related Unit Cost per Month	\$28.85	\$26.55	\$28.59	\$41.49	\$145.14	\$27.96	\$1,056.99	\$31.46	\$60.62
42		Total Demand Related Cost	\$426,046,508	\$237,750,302	\$58,173,032	\$92,470,440	\$25,598,878	\$10,281,563	\$1,090,664	\$188,636	\$492,994
43		Demand Related Cost per Month	\$132.63	\$86.83	\$139.59	\$4,530.64	\$101,582.85	\$335.70	\$182.26	\$1,241.03	\$13,324.15
45		Total Customer and Demand per Month	\$161.48	\$113.37	\$168.19	\$4,572.13	\$101,727.99	\$363.66	\$1,239.25	\$1,272.48	\$13,384.77

<u>Lithium Ion Battery Storage (8 MWh)</u>				Montana	NW Wind	Average	
1	Fixed Cost per kW	245.63		245.63			
2	Cost per MWh Charge	40.38		40.38			
3	Hours of Operation	200		200			
4	Storage Efficiency	88%		88%			
5	Total Fuel & VOM Cost	9.18		9.18		Line 2 / 1000 / Line 4 X Line 3	
6	ELCC	0.98		0.98			
7	Total Cost 1 kW, 200 Hours	259.82		259.82	259.82	Line 1 / Line 6 + Line 5	

<u>Wind Turbine (100% PTC-PPA, 44% CF)</u>				Montana	NW Wind	Average	
	Weighting	60%		40%			
8	Fixed Cost per kW	125.31		119.46	122.97		
9	Average Output Requirement @ 60.9% Load Factor	5,335		5,335	5,334.84	8,760 X 0.609	
10	Capacity Factor	43.8%		32%	0.39		
11	Output	3,833		2,821	3,428	8,760 X Line 10	
12	Total kW Capacity Required	1.39		1.89	1.56	Line 9 / Line 10	
13	Total Fixed Costs	174.39		225.93	191.35	Line 8 X Line 11	
14	4-month ELCC	21%		14%	0.18		
15	Demand Related cost @ 5.6% Capacity Contribution	74.13		70.02	72.78	Line 10 X 23% X Line 1	
16	Total Energy Related Cost	100.27		155.91	118.58	Line 12 - Line 13	
17	Demand Component	72.2%		62.5%	68.7%	Line 7 / (Line 7 + Line 14)	
18	Energy Component	27.8%		37.5%	31.3%	100% - Line 15	

AVISTA UTILITIES
Distribution Substation Direct Assignment
Washington Electric Cost Study
June 30, 2023

WASHINGTON SUBSTATION	ACCOUNT 361	ACCOUNT 362	SCHEDULE 25 PERCENTAGE	ACCOUNT 361 DIRECT ASSIGN	ACCOUNT 362 DIRECT ASSIGN	
ARDEN SUBSTA	9,900	342,489	41%	4,076	141,002	
COLLEGE & WALNT SUBSTA	1,530,032	1,466,567				
COLLEGE & WALNT ELEC R	50,747	437,641				
College & Walnut	1,580,779	1,904,207	10%	150,726	181,565	
COLVILLE 115 KVSUBSTA	98,795	1,339,801				
COLVILLE RADIO SUB	0	303				
COLVILLE STEPDWN	0	23,087				
Colville	98,795	1,363,191	10%	9,401	129,713	
EAST FARMS SUBSTA	168,779	765,280	21%	34,952	158,478	
FORT WRIGHT 115 KV SUBS	41,160	888,554	10%	4,049	87,408	
GREENWOOD SUBSTA	18,839	627,918	13%	2,414	80,447	
HALLET & WHITE SUBSTA	260,734	3,784,389	23%	60,536	878,639	
INLAND EMPIRE PAPER SUB	18,086	224,402	100%	18,086	224,402	
KETTLE FALLS SUBSTATION	382	294,853	24%	91	69,990	
OTHELLO 115 KV SUBSTA	532,282	3,222,663				
OTHELLO SW STA	0	0				
Othello	532,282	3,222,663	39%	206,729	1,251,628	
TURNER 115 KV SUBSTATIO	1,965,193	1,243,732	17%	343,370	217,312	
PULLMAN WSU SUBSTA	97	497,062	68%	66	338,582	
ROSS PARK 115 KV SUBSTA	1,334,982	1,335,470				
ROSS PARK 13 KV SUBSTA	0	0				
Ross Park	1,334,982	1,335,470	10%	135,292	135,342	
SOUTH PULLMAN SUBSTA	292,551	1,352,990	46%	135,186	625,207	
SPOKANE INDUSTRIAL PARI	63,290	767,012	22%	13,947	169,024	
THIRD & HATCH SUBSTA	753,661	2,475,154	8%	57,067	187,418	
TERRE VIEW 115/13 KV SUB	551,340	1,009,825	52%	286,806	525,309	
WSU EAST CAMPUS SUBSTA	154	166,191	100%	154	166,191	
IEP SPARE TRANSFORMER	0.00	206,488	100%	0	206,488	
				1,462,948	5,774,145	7,237,093
				Account 361	Account 362	Total
Total WA Ending Balance 6/23 of Accounts				21,318,032	113,515,733	134,833,765
Less: Directly Assigned Plant Sch 25				-1,444,862	-5,343,255	-6,788,117
Less: Directly Assigned Plant Sch 25I				-18,086	-430,890	-448,976
Assignment Demand NCP-2				19,855,084	107,741,589	127,596,673

-5%

WASHINGTON SCHEDULE 25 ACCOUNT 361 ACCOUNT 362
SUBSTATION ACCOUNT 361 ACCOUNT 362 PERCENTAGE DIRECT ASSIGN DIRECT ASSIGN

		12ME 6.2023						
Customer	Substation	Peak KVA	Peak mo.	Ded. Feeders?	fraction	Capacity	% of Capacity	
	HALLET & WHITE SUBSTA	7,369	Feb/23	1&22 share 1 of 2	26%	60,000	12%	
	KETTLE FALLS SUBSTATION	5,317	Apr/23			22,400	24%	
	GREENWOOD SUBSTA	2,870	Dec/22			22,400	13%	
	FORT WRIGHT 115 KV SUBST	4,407	Mar/23			44,800	10%	
	College & Walnut	3,635	Sep/22			67,200	5%	
	Ross Park	6,121	Aug/22			60,400	10%	
	SPOKANE INDUSTRIAL PARK	4,208	Aug/22			49,100	9%	
	EAST FARMS SUBSTA	4,639	Mar/23			22,400	21%	
	INLAND EMPIRE PAPER SUBS	64,580	Aug/22	yes	100%		100%	
	Othello	8,733	Jun/23	1 of 4		60,000	15%	
	Othello	14,570	May/23	1 of 4		60,000	24%	
	THIRD & HATCH SUBSTA	7,633	Jul/22			100,800	8%	
	College & Walnut	2,773	Jul/22			67,200	4%	
	SPOKANE INDUSTRIAL PARK	6,612	Dec/22	1 of 5	20%	49,100	13%	
	Colville	4,758	Jan/23	1 of 5	20%	50,000	10%	
9	TURNER 115 KV SUBSTATION	4,108	Nov/22	1 of 6	17%	60,000	7%	
9	SOUTH PULLMAN SUBSTA	10,404	Jul/22	1 of 5	20%	50,000	21%	
9	WSU EAST CAMPUS SUBSTA	10,404	Jul/22	1 of 2	50%	Note 1	50%	
9	TERRE VIEW 115/13 KV SUB	10,404	Jul/22	1 of 2	50%	20,000	52%	
9	SOUTH PULLMAN SUBSTA	5,453	Dec/22	1 of 5	20%	50,000	11%	
9	WSU EAST CAMPUS SUBSTA	5,453	Dec/22	1 of 2	50%	Note 1	50%	
9	PULLMAN WSU SUBSTA	6,376	Dec/22	1 of 2	50%	20,000	32%	
9	TURNER 115 KV SUBSTATION	6,376	Dec/22	1 of 6	17%	60,000	11%	
9	SOUTH PULLMAN SUBSTA	7,247	May/23	1 of 5	20%	50,000	14%	
9	PULLMAN WSU SUBSTA	7,247	May/23	1 of 2	50%	20,000	36%	
	HALLET & WHITE SUBSTA	6,562	Jan/23	1&22 share 1 of 2	24%	60,000	11%	
	ARDEN SUBSTA	4,117	Mar/23	1 of 2	50%	10,000	41%	