

Appendix M

Irrigation Power Cost Calculations for the Similar Projects

Boise Project

Irrigation Power Cost Calculations

USBR/Klamath Project - AWIA Power Cost Benchmark Analysis

Boise Project Average Irrigation/Drainage Power Cost Calculations

Average Project Area Power Cost for CY 2017 and CY 2018

Category	Total Annual Load (Mwh)	Total Annual Power Costs (\$)	Average Cost (\$/Mwh)	Average Cost (cents/Kwh)
Combined Electric Utility Power	138,369	11,266,261	81.42	8.142
Federal Project-use Power	39,083	1,236,967	31.65	3.165
Overall Boise Project	177,452	12,503,228	70.46	7.046

USBR/Klamath Project - AWIA Power Cost Benchmark Analysis

Boise Project Average Irrigation/Drainage Power Cost Calculations

Estimated Boise Project Area Total Irrigation/Drainage Loads for CY 2017 and CY 2018

Klamath Project Irrigation/Drainage Loads

1992 - 2013 On-Project Average Load (Mwh/Yr)	74,000
2017 - 2018 USBR Average Load (Mwh/Yr)	807.2
Non - USBR Project Area Load (Mwh/Yr)	73,193
Klamath Project Total Area (Acres)	210,000
Non - USBR Klamath Project Area Load (Mwh/Acre/Yr)	0.349

Boise Project Estimated Irrigation/Drainage Loads

2017 - 2018 Project-use Power Average Load (Mwh/Yr)	39,083
Boise Project Total Area (Acres)	397,000
Total Electric Utility Load (Mwh/Yr)	138,369
Total Boise Project Area Load (Mwh/Yr)	177,452
Total Boise Project Area Load (aMW)	20.257

USBR/Klamath Project - AWIA Power Cost Benchmark Analysis

Boise Project Average Irrigation/Drainage Power Cost Calculations

Electric Utility Service Territory Area Ratios and Combined Boise Project Power Price

Electric Utility	Boise Project Area Ratio	2017/2018 Average Power Cost (\$/Mwh)	2017/2018 Ratioed Power Cost (\$/Mwh)
Idaho Power - ID Rates	1.000	81.42	81.42
Combined Electric Utility	1.000		81.42

USBR/Klamath Project - AWIA Power Cost Benchmark Analysis

Boise Project Average Irrigation/Drainage Power Cost Calculations

Electric Utility Power Costs for CY 2017 and CY 2018

Idaho Power Company - Idaho Rates

	2017	2018	2017/2018 Average
Total Cost (Mwh)	143,512,368	151,137,090	147,324,729
Total Usage (Mwh)	1,710,410	1,908,397	1,809,403
Per Unit Cost (\$/Mwh)	83.91	79.20	81.42

USBR/Klamath Project - AWIA Power Cost Benchmark Analysis

Boise Project Average Irrigation/Drainage Power Cost Calculations

Federal Project-use Power Data for CY 2017 and CY 2018

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Total Boise Project Federal Project-use Power

	2017	2018	2017/2018 Average
Total Usage (Mwh)	36,667.8	41,497.4	39,082.6
Base Rate (\$/Mwh)	27.00	27.00	27.0
Total Base Cost (\$)	990,030.3	1,120,429.6	1,055,229.9
Wheeling Costs (\$)	182,270.7	181,203.0	181,736.8
Total Project-use Power Cost (\$)	1,172,300.9	1,301,632.6	1,236,966.8
Total Project-use Power Cost (\$/Mwh)	31.97	31.37	31.650

Project-use Power - USBR

	2017	2018	Average
Total Usage (Mwh)	18,333.9	20,748.7	19,541.3
Base Rate (\$/Mwh)	27.00	27.00	27.0
Total Base Cost (\$)	495,015	560,215	527,615
Wheeling Costs (\$)	99,856	100,596	100,226
Total Project-use Power Cost (\$)	594,871	660,811	627,841
Total Project-use Power Cost (\$/Mwh)	32.45	31.85	32.13

Project-use Power - Black Canyon ID

	2017	2018	Average
Total Usage (Mwh)	17,485.3	19,995.6	18,740.4
Base Rate (\$/Mwh)	27.00	27.00	27.0
Total Base Cost (\$)	472,102	539,881	505,992
Wheeling Costs (\$)	82,415	80,607	81,511
Total Project-use Power Cost (\$)	554,517	620,488	587,503
Total Project-use Power Cost (\$/Mwh)	31.71	31.03	31.35

Project-use Power - Emmett ID

	2017	2018	Average
Total Usage (Mwh)	848.6	753.1	800.9
Base Rate (\$/Mwh)	27.00	27.00	27.0
Total Base Cost (\$)	22,913	20,334	21,623
Wheeling Costs (\$)	0	0	0
Total Project-use Power Cost (\$)	22,913	20,334	21,623
Total Project-use Power Cost (\$/Mwh)	27.00	27.00	27.00

Columbia Basin Project

Irrigation Power Cost Calculations

USBR/Klamath Project - AWIA Power Cost Benchmark Analysis

Columbia Basin Project Average Irrigation/Drainage Power Cost Calculations

Average Project Area Power Cost for CY 2017 and CY 2018

Category	Total Annual Load (Mwh)	Total Annual Power Costs (\$)	Average Cost (\$/Mwh)	Average Cost (cents/Kwh)
Combined Electric Utility Power	233,868	12,026,585	51.42	5.142
Federal Project-use Power	164,530	1,077,805	6.55	0.655
Overall Columbia Basin Project	398,398	13,104,390	32.89	3.289

USBR/Klamath Project - AWIA Power Cost Benchmark Analysis
Columbia Basin Project Average Irrigation/Drainage Power Cost Calculations
Estimated Columbia Basin Project Area Total Irrigation/Drainage Loads for CY 2017 and CY 2018

Klamath Project Irrigation/Drainage Loads

1992 - 2013 On-Project Average Load (Mwh/Yr)	74,000
2017 - 2018 USBR Average Load (Mwh/Yr)	807.2
Non - USBR Project Area Load (Mwh/Yr)	73,193
Klamath Project Total Area (Acres)	210,000
Non - USBR Klamath Project Area Load (Mwh/Acre/Yr)	0.349

Columbia Basin Project Estimated Irrigation/Drainage Loads

2017 - 2018 Project-use Power Average Load (Mwh/Yr)	164,530
Columbia Basin Project Total Area (Acres)	671,000
Total Electric Utility Load (Mwh/Yr)	233,868
Total Columbia Basin Project Area Load (Mwh/Yr)	398,398
Total Columbia Basin Project Area Load (aMW)	45.479

USBR/Klamath Project - AWIA Power Cost Benchmark Analysis
Columbia Basin Project Average Irrigation/Drainage Power Cost Calculations
Electric Utility Service Territory Area Ratios and Combined Columbia Basin Project Power Price

Electric Utility	Columbia Basin Project Area Ratio	2017/2018 Average Power Cost (\$/Mwh)	2017/2018 Ratioed Power Cost (\$/Mwh)
Avista Corporation - WA Rates	0.0327	86.82	2.84
Big Bend Electric Coop	0.2927	62.08	18.17
Columbia REA - WA Rates	0.0068	79.22	0.54
Franklin County PUD	0.0637	74.71	4.76
Grant County PUD	0.6040	41.58	25.12
Combined Electric Utility	0.9999		51.42

Note: The Columbia Basin Project Area Ratios for each Electric Utility were derived from the Columbia Basin Project power-cost sub-area analysis.

USBR/Klamath Project - AWIA Power Cost Benchmark Analysis

Columbia Basin Project Average Irrigation/Drainage Power Cost Calculations

Electric Utility Power Costs for CY 2017 and CY 2018

Avista Corporation - Washington Rates

	2017	2018	2017/2018 Average
Total Cost (Mwh)	12,659,000	12,659,000	12,659,000
Total Usage (Mwh)	145,808	145,808	145,808
Per Unit Cost (\$/Mwh)	86.82	86.82	86.82

Big Bend Electric Cooperative

	2017	2018	2017/2018 Average
Total Cost (Mwh)	25,521,000	27,322,000	26,421,500
Total Usage (Mwh)	416,470	434,740	425,605
Per Unit Cost (\$/Mwh)	61.28	62.85	62.08

Columbia REA - Washington Rates

	2017	2018	2017/2018 Average
Total Cost (Mwh)	21,431,000	22,710,500	22,070,750
Total Usage (Mwh)	276,042	281,166	278,604
Per Unit Cost (\$/Mwh)	77.64	80.77	79.22

Franklin County PUD

	2017	2018	2017/2018 Average
Total Cost (Mwh)	7,860,126	8,558,680	8,209,403
Total Usage (Mwh)	119,716	100,061	109,889
Per Unit Cost (\$/Mwh)	65.66	85.54	74.71

Grant County PUD

	2017	2018	2017/2018 Average
Total Cost (Mwh)	24,080,000	25,785,000	24,932,500
Total Usage (Mwh)	599,556	599,556	599,556
Per Unit Cost (\$/Mwh)	40.16	43.01	41.58

USBR/Klamath Project - AWIA Power Cost Benchmark Analysis

Columbia Basin Project Average Irrigation/Drainage Power Cost Calculations

Federal Project-use Power Data for CY 2017 and CY 2018

Total Columbia Basin Project Federal Project-use Power

	2017	2018	2017/2018 Average
Total Usage (Mwh)	162,819.9	166,239.2	164,529.6
Base Rate (\$/Mwh)	27.00	27.00	27.0
Total Base Cost (\$)	588,756.6	601,121.1	594,938.9
Wheeling Costs (\$)	341,122.5	624,608.8	482,865.7
Total Project-use Power Cost (\$)	929,879.1	1,225,729.9	1,077,804.5
Total Project-use Power Cost (\$/Mwh)	5.71	7.37	6.55

Federal Project-use Power - USBR

	2017	2018	Average
Total Usage (Mwh)	162,819.9	166,239.2	164,529.6
Base Rate (\$/Mwh)	3.62	3.62	3.6
Total Base Cost (\$)	588,757	601,121	594,939
Wheeling Costs (\$)	341,123	624,609	482,866
Total Project-use Power Cost (\$)	929,879	1,225,730	1,077,805
Total Project-use Power Cost (\$/Mwh)	5.71	7.37	6.55

Minidoka Project

Irrigation Power Cost Calculations

USBR/Klamath Project - AWIA Power Cost Benchmark Analysis

Minidoka Project Average Irrigation/Drainage Power Cost Calculations

Average Project Area Power Cost for CY 2017 and CY 2018

Category	Total Annual Load (Mwh)	Total Annual Power Costs (\$)	Average Cost (\$/Mwh)	Average Cost (cents/Kwh)
Combined Electric Utility Power	370,146	31,038,860	83.86	8.386
Federal Project-use Power	315,365	11,029,572	34.97	3.497
Overall Minidoka Project	685,511	42,068,432	61.37	6.137

USBR/Klamath Project - AWIA Power Cost Benchmark Analysis

Minidoka Project Average Irrigation/Drainage Power Cost Calculations

Estimated Minidoka Project Area Total Irrigation/Drainage Loads for CY 2017 and CY 2018

Klamath Project Irrigation/Drainage Loads

1992 - 2013 On-Project Average Load (Mwh/Yr)	74,000
2017 - 2018 USBR Average Load (Mwh/Yr)	807.2
Non - USBR Project Area Load (Mwh/Yr)	73,193
Klamath Project Total Area (Acres)	210,000
Non - USBR Klamath Project Area Load (Mwh/Acre/Yr)	0.349

Minidoka Project Estimated Irrigation/Drainage Loads

2017 - 2018 Project-use Power Average Load (Mwh/Yr)	315,365
Minidoka Project Total Area (Acres)	1,062,000
Total Electric Utility Load (Mwh/Yr)	370,146
Total Minidoka Project Area Load (Mwh/Yr)	685,511
Total Minidoka Project Area Load (aMW)	78.255

USBR/Klamath Project - AWIA Power Cost Benchmark Analysis
Minidoka Project Average Irrigation/Drainage Power Cost Calculations
Electric Utility Service Territory Load Ratios and Combined Minidoka Project Power Price

Electric Utility	Minidoka Project Load Ratios	2017/2018 Average Power Cost (\$/Mwh)	2017/2018 Ratioed Power Cost (\$/Mwh)
Fall River Electric Coop - ID Rates	0.1227	80.47	9.87
Idaho Power - ID Rates	0.6911	81.42	56.27
PacifiCorp - ID Rates	0.1862	95.12	17.71
Combined Electric Utility	1.0000		83.86

Note: The Minidoka Project Area Ratios for each Electric Utility were derived from the Minidoka Project power-cost sub-area analysis.

USBR/Klamath Project - AWIA Power Cost Benchmark Analysis

Minidoka Project Average Irrigation/Drainage Power Cost Calculations

Electric Utility Power Costs for CY 2017 and CY 2018

Fall River Electric Cooperative - Idaho Rates

	2017	2018	2017/2018 Average
Total Revenue (\$)	7,903,000	8,870,000	8,386,500
Total Usage (Mwh)	104,207	104,225	104,216
Per Unit Cost (\$/Mwh)	75.84	85.10	80.47

Idaho Power Company - Idaho Rates

	2017	2018	2017/2018 Average
Total Revenue (\$)	143,512,368	151,137,090	147,324,729
Total Usage (Mwh)	1,710,410	1,908,397	1,809,403
Per Unit Cost (\$/Mwh)	83.91	79.20	81.42

PacifiCorp/Rocky Mountain Power - Idaho Rates

	2017	2018	2017/2018 Average
Total Revenue (\$)	51,412,838	50,081,912	50,747,375
Total Usage (Mwh)	533,516	533,516	533,516
Per Unit Cost (\$/Mwh)	96.37	93.87	95.12

USBR/Klamath Project - AWIA Power Cost Benchmark Analysis

Minidoka Project Average Irrigation/Drainage Power Cost Calculations

Federal Project-use Power Data for CY 2017 and CY 2018

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Total Minidoka Project Federal Project-use Power

	2017	2018	2017/2018 Average
Total Usage (Mwh)	300,079.2	330,650.3	315,364.8
Base Rate (\$/Mwh)	27.00	27.00	27.0
Total Base Cost (\$)	8,102,138.7	8,927,558.4	8,514,848.6
Wheeling Costs (\$)	2,453,690.1	2,575,756.5	2,514,723.3
Total Project-use Power Cost (\$)	10,555,828.8	11,503,314.9	11,029,571.8
Total Project-use Power Cost (\$/Mwh)	35.18	34.79	34.97

Federal Project-use Power - USBR

	2017	2018	Average
Total Usage (Mwh)	161,629.3	179,328.2	170,478.7
Base Rate (\$/Mwh)	27.00	27.00	27.0
Total Base Cost (\$)	4,363,991	4,841,861	4,602,926
Wheeling Costs (\$)	1,408,240	1,434,120	1,421,180
Total Project-use Power Cost (\$)	5,772,231	6,275,981	6,024,106
Total Project-use Power Cost (\$/Mwh)	35.71	35.00	35.34

Federal Project-use Power - A&B Irrigation District

	2017	2018	Average
Total Usage (Mwh)	100,341.8	113,125.2	106,733.5
Base Rate (\$/Mwh)	27.00	27.00	27.0
Total Base Cost (\$)	2,709,228	3,054,380	2,881,804
Wheeling Costs (\$)	927,874	1,022,056	974,965
Total Project-use Power Cost (\$)	3,637,102	4,076,436	3,856,769
Total Project-use Power Cost (\$/Mwh)	36.25	36.04	36.13

Federal Project-use Power - Burley Irrigation District

	2017	2018	Average
Total Usage (Mwh)	26,447.4	28,227.8	27,337.6
Base Rate (\$/Mwh)	27.00	27.00	27.0
Total Base Cost (\$)	714,079	762,151	738,115
Wheeling Costs (\$)	117,381	119,386	118,383
Total Project-use Power Cost (\$)	831,460	881,537	856,498
Total Project-use Power Cost (\$/Mwh)	31.44	31.23	31.33

USBR/Klamath Project - AWIA Power Cost Benchmark Analysis
Minidoka Project Average Irrigation/Drainage Power Cost Calculations
Federal Project-use Power Data for CY 2017 and CY 2018

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Federal Project-use Power - Milner Irrigation District

	2017	2018	Average
Total Usage (Mwh)	9,779.7	8,385.6	9,082.6
Base Rate (\$/Mwh)	27.00	27.00	27.0
Total Base Cost (\$)	264,051	226,412	245,231
Wheeling Costs (\$)	195	195	195
Total Project-use Power Cost (\$)	264,246	226,607	245,426
Total Project-use Power Cost (\$/Mwh)	27.02	27.02	27.02

Federal Project-use Power - Minidoka Irrigation District

	2017	2018	Average
Total Usage (Mwh)	1,881.1	1,583.5	1,732.3
Base Rate (\$/Mwh)	27.00	27.00	27.0
Total Base Cost (\$)	50,790	42,756	46,773
Wheeling Costs (\$)	0	0	0
Total Project-use Power Cost (\$)	50,790	42,756	46,773
Total Project-use Power Cost (\$/Mwh)	27.00	27.00	27.00

Owyhee Project

Irrigation Power Cost Calculations

USBR/Klamath Project - AWIA Power Cost Benchmark Analysis

Owyhee Project Average Irrigation/Drainage Power Cost Calculations

Average Project Area Power Cost for CY 2017 and CY 2018

Category	Total Annual Load (Mwh)	Total Annual Power Costs (\$)	Average Cost (\$/Mwh)	Average Cost (cents/Kwh)
Combined Electric Utility Power	36,596	3,572,396	97.62	9.762
Federal Project-use Power	60,541	1,908,685	31.53	3.153
Overall Owyhee Project	97,137	5,481,081	56.43	5.643

USBR/Klamath Project - AWIA Power Cost Benchmark Analysis

Owyhee Project Average Irrigation/Drainage Power Cost Calculations

Estimated Owyhee Project Area Total Irrigation/Drainage Loads for CY 2017 and CY 2018

Klamath Project Irrigation/Drainage Loads

1992 - 2013 On-Project Average Load (Mwh/Yr)	74,000
2017 - 2018 USBR Average Load (Mwh/Yr)	807.2
Non - USBR Project Area Load (Mwh/Yr)	73,193
Klamath Project Total Area (Acres)	210,000
Non - USBR Klamath Project Area Load (Mwh/Acre/Yr)	0.349

Owyhee Project Estimated Irrigation/Drainage Loads

2017 - 2018 Project-use Power Average Load (Mwh/Yr)	60,541
Owyhee Project Total Area (Acres)	105,000
Total Electric Utility Load (Mwh/Yr)	36,596
Total Owyhee Project Area Load (Mwh/Yr)	97,137
Total Owyhee Project Area Load (aMW)	11.089

USBR/Klamath Project - AWIA Power Cost Benchmark Analysis

Owyhee Project Average Irrigation/Drainage Power Cost Calculations

Electric Utility Service Territory Area Ratios and Combined Owyhee Project Power Price

Electric Utility	Owyhee Project Load Ratio	2017/2018 Average Power Cost (\$/Mwh)	2017/2018 Ratioed Power Cost (\$/Mwh)
Idaho Power - ID Rates	0.2948	81.42	24.00
Idaho Power - OR Rates	0.7052	104.39	73.61
Combined Electric Utility	1.0000		97.62

Note: The OwyheeProject Area Ratios for each Electric Utility were derived from the Owyhee Project power-cost sub-area analysis.

USBR/Klamath Project - AWIA Power Cost Benchmark Analysis

Owyhee Project Average Irrigation/Drainage Power Cost Calculations

Electric Utility Power Costs for CY 2017 and CY 2018

Idaho Power Company - Idaho Rates

	2017	2018	2017/2018 Average
Total Cost (Mwh)	143,512,368	151,137,090	147,324,729
Total Usage (Mwh)	1,710,410	1,908,397	1,809,403
Per Unit Cost (\$/Mwh)	83.91	79.20	81.42

Idaho Power Company - Oregon Rates

	2017	2018	2017/2018 Average
Total Cost (Mwh)	6,517,632	6,863,910	6,690,771
Total Usage (Mwh)	60,590	67,603	64,097
Per Unit Cost (\$/Mwh)	107.57	101.53	104.39

USBR/Klamath Project - AWIA Power Cost Benchmark Analysis

Owyhee Project Average Irrigation/Drainage Power Cost Calculations

Federal Project-use Power Data for CY 2017 and CY 2018

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Total Owyhee Project Federal Project-use Power

	2017	2018	2017/2018 Average
Total Usage (Mwh)	54,970.7	66,111.5	60,541.1
Base Rate (\$/Mwh)	27.00	27.00	27.0
Total Base Cost (\$)	1,484,207.6	1,785,011.4	1,634,609.5
Wheeling Costs (\$)	269,003.8	279,146.5	274,075.2
Total Project-use Power Cost (\$)	1,753,211.3	2,064,157.9	1,908,684.6
Total Project-use Power Cost (\$/Mwh)	31.89	31.22	31.53

Federal Project-use Power - USBR

	2017	2018	Average
Total Usage (Mwh)	27,485.3	33,055.8	30,270.5
Base Rate (\$/Mwh)	27.00	27.00	27.0
Total Base Cost (\$)	742,104	892,506	817,305
Wheeling Costs (\$)	148,221	156,019	152,120
Total Project-use Power Cost (\$)	890,325	1,048,525	969,425
Total Project-use Power Cost (\$/Mwh)	32.39	31.72	32.03

Federal Project-use Power - Old Owyhee Ditch Co

	2017	2018	Average
Total Usage (Mwh)	137.5	335.4	236.5
Base Rate (\$/Mwh)	27.00	27.00	27.0
Total Base Cost (\$)	3,713	9,055	6,384
Wheeling Costs (\$)	754	842	798
Total Project-use Power Cost (\$)	4,468	9,897	7,182
Total Project-use Power Cost (\$/Mwh)	32.48	29.51	30.37

Federal Project-use Power - Owyhee Irrigation District

	2017	2018	Average
Total Usage (Mwh)	8,724.3	11,150.2	9,937.3
Base Rate (\$/Mwh)	27.00	27.00	27.0
Total Base Cost (\$)	235,556	301,056	268,306
Wheeling Costs (\$)	42,344	40,609	41,477
Total Project-use Power Cost (\$)	277,900	341,665	309,782
Total Project-use Power Cost (\$/Mwh)	31.85	30.64	31.17

USBR/Klamath Project - AWIA Power Cost Benchmark Analysis

Owyhee Project Average Irrigation/Drainage Power Cost Calculations

Federal Project-use Power Data for CY 2017 and CY 2018

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Federal Project-use Power - South Board of Control

	2017	2018	Average
Total Usage (Mwh)	18,623.5	21,570.2	20,096.8
Base Rate (\$/Mwh)	27.00	27.00	27.0
Total Base Cost (\$)	502,834	582,395	542,615
Wheeling Costs (\$)	77,685	81,676	79,680
Total Project-use Power Cost (\$)	580,519	664,071	622,295
Total Project-use Power Cost (\$/Mwh)	31.17	30.79	30.96

Yakima Project

Irrigation Power Cost Calculations

USBR/Klamath Project - AWIA Power Cost Benchmark Analysis

Yakima Project Average Irrigation/Drainage Power Cost Calculations

Average Project Area Power Cost for CY 2017 and CY 2018

Category	Total Annual Load (Mwh)	Total Annual Power Costs (\$)	Average Cost (\$/Mwh)	Average Cost (cents/Kwh)
Combined Electric Utility Power	163,505	12,368,021	75.64	7.564
Federal Project-use Power	31,648	705,950	22.31	2.231
Overall Yakima Project	195,153	13,073,971	66.99	6.699

USBR/Klamath Project - AWIA Power Cost Benchmark Analysis

Yakima Project Average Irrigation/Drainage Power Cost Calculations

Estimated Yakima Project Area Total Irrigation/Drainage Loads for CY 2017 and CY 2018

Klamath Project Irrigation/Drainage Loads

1992 - 2013 On-Project Average Load (Mwh/Yr)	74,000
2017 - 2018 USBR Average Load (Mwh/Yr)	807.2
Non - USBR Project Area Load (Mwh/Yr)	73,193
Klamath Project Total Area (Acres)	210,000
Non - USBR Klamath Project Area Load (Mwh/Acre/Yr)	0.349

Yakima Project Estimated Irrigation/Drainage Loads

2017 - 2018 Project-use Power Average Load (Mwh/Yr)	31,648
Yakima Project Total Area (Acres)	464,000
Total Electric Utility Load (Mwh/Yr)	163,505
Total Yakima Project Area Load (Mwh/Yr)	195,153
Total Yakima Project Area Load (aMW)	22.278

USBR/Klamath Project - AWIA Power Cost Benchmark Analysis

Yakima Project Average Irrigation/Drainage Power Cost Calculations

Electric Utility Service Territory Area Ratios and Combined Yakima Project Power Price

Electric Utility	Yakima Project Area Ratio	2017/2018 Average Power Cost (\$/Mwh)	2017/2018 Ratioed Power Cost (\$/Mwh)
Benton County PUD	0.0688	54.60	3.76
Benton REA	0.3614	64.54	23.32
Kittitas County PUD	0.0471	103.40	4.87
Pacificorp - WA Rates	0.4256	85.75	36.50
Puget Sound Energy	0.0971	74.11	7.20
Combined Electric Utility	1.000		75.643

Note: The Yakima Project Area Ratios for each Electric Utility were derived from the Yakima Project power-cost sub-area analysis.

USBR/Klamath Project - AWIA Power Cost Benchmark Analysis

Yakima Project Average Irrigation/Drainage Power Cost Calculations

Electric Utility Power Costs for CY 2017 and CY 2018

Benton County PUD

	2017	2018	2017/2018 Average
Total Cost (Mwh)	21,825,000	23,517,000	22,671,000
Total Usage (Mwh)	405,805	424,610	415,208
Per Unit Cost (\$/Mwh)	53.78	55.39	54.60

Benton County REA

	2017	2018	2017/2018 Average
Total Cost (Mwh)	20,839,000	21,628,000	21,233,500
Total Usage (Mwh)	320,299	337,691	328,995
Per Unit Cost (\$/Mwh)	65.06	64.05	64.54

Kittitas County PUD

	2017	2018	2017/2018 Average
Total Cost (Mwh)	796,703	796,703	796,703
Total Usage (Mwh)	7,705	7,705	7,705
Per Unit Cost (\$/Mwh)	103.40	103.40	103.40

Pacificorp - Washington Rates

	2017	2018	2017/2018 Average
Total Cost (Mwh)	12,565,183	12,944,847	12,755,015
Total Usage (Mwh)	148,745	148,745	148,745
Per Unit Cost (\$/Mwh)	84.47	87.03	85.75

Puget Sound Energy

	2017	2018	2017/2018 Average
Total Cost (Mwh)	1,186,443	1,186,443	1,186,443
Total Usage (Mwh)	16,009	16,009	16,009
Per Unit Cost (\$/Mwh)	74.11	74.11	74.11

USBR/Klamath Project - AWIA Power Cost Benchmark Analysis

Yakima Project Average Irrigation/Drainage Power Cost Calculations

Federal Project-use Power Data for CY 2017 and CY 2018

Total Yakima Project Federal Project-use Power

	2017	2018	2017/2018 Average
Total Usage (Mwh)	30,360.1	32,936.7	31,648.4
Base Rate (\$/Mwh)	27.00	27.00	27.0
Total Base Cost (\$)	587,164.8	824,734.9	705,949.8
Wheeling Costs (\$)	0.0	0.0	0.0
Total Project-use Power Cost (\$)	587,164.8	824,734.9	705,949.8
Total Project-use Power Cost (\$/Mwh)	19.34	25.04	22.31

Federal Project-use Power - Roza Irrigation District

	2017	2018	Average
Total Usage (Mwh)	30,360.1	32,936.7	31,648.4
Base Rate (\$/Mwh)	19.34	25.04	22.2
Total Base Cost (\$)	587,165	824,735	705,950
Wheeling Costs (\$)	0	0	0
Total Project-use Power Cost (\$)	587,165	824,735	705,950
Total Project-use Power Cost (\$/Mwh)	19.34	25.04	22.31