

October 1, 2021

***VIA ELECTRONIC FILING***

Public Utility Commission of Oregon  
Attn: Filing Center  
201 High Street SE, Suite 100  
Salem, OR 97301-3398

**RE: UM 1729(5)—Standard Avoided Cost Purchases from Eligible Qualifying Facilities**

In compliance with ORS 758.525 and Order No. 14-058 in Docket No. UM 1610, PacifiCorp d/b/a Pacific Power (PacifiCorp or Company) hereby submits the enclosed update to its standard avoided cost schedule (formerly known as Schedule 37) to the Public Utility Commission of Oregon (Commission).

Oregon avoided cost filing requirements as listed in OAR 860-029-0040 and 860-029-0080 require the Company to file updated avoided costs at least every two years. The Commission Order No. 14-058 requires the Oregon investor-owned utilities to update avoided cost prices annually on May 1 of each year and within 30-days of Integrated Resource Plan (IRP) acknowledgment. Annual updates, filed on May 1 of each year, are required to update the following data inputs: (1) natural gas prices; (2) on-peak and off-peak forward looking electricity market prices; (3) production tax credit status; and (4) any other action or change in an acknowledged IRP relevant to the calculation of avoided costs. The Company's annual update to standard avoided cost rates for 2021 was moved to October 1, 2021 by Commission Order No. 21-120. The Company respectfully requests an effective date of November 1, 2021.

The Company's current standard avoided cost prices were approved in docket UM 1729 Order No. 20-292.

In support of this filing, PacifiCorp submits Appendix 1- Avoided Cost Study and Appendix 2- Method Write-up and Minimum Filing Requirements. Also provided are the supporting documentation in both "pdf" and original formats.

PacifiCorp respectfully requests that all communications related to this filing be addressed to:

Oregon Dockets  
PacifiCorp  
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Please direct questions on this filing to Cathie Allen at (503) 813-5934.

Sincerely,

A handwritten signature in blue ink that reads "Shelley McCoy". The signature is written in a cursive, flowing style.

Shelley McCoy  
Director, Regulation

Enclosure

**PACIFIC POWER  
AVOIDED COST CALCULATION**

**STANDARD RATES FOR AVOIDED COST PURCHASES FROM  
ELIGIBLE QUALIFYING FACILITIES**

**OREGON – OCTOBER 2021**

**Monthly Payments (Continued)**
**Firm Market Indexed and Non-Firm Market Index Avoided Cost Prices**

In accordance with the terms of a contract with a Qualifying Facility, the Company shall pay for all separately metered kilowatt-hours of On-Peak and Off-Peak generation at the market prices calculated at the time of delivery. On-Peak and Off-Peak are defined in the definitions section of this schedule.

**Avoided Cost Prices**
**Standard Fixed Avoided Cost Prices for Base Load and Wind QF (¢/kWh)**

Deliveries During Calendar Year	Base Load QF (1)		Wind QF (1,2)		Wind Integration
	On-Peak Energy Price	Off-Peak Energy Price	On-Peak Energy Price	Off-Peak Energy Price	All hours Energy Charge
	(a)	(b)	(c)	(d)	(e)
2021	5.04	4.09	5.02	4.07	0.19
2022	5.10	3.37	5.08	3.34	0.27
2023	4.54	3.26	4.51	3.23	0.29
2024	4.15	3.05	4.11	3.02	0.35
2025	3.48	2.75	3.42	2.69	0.61
2026	5.64	3.60	6.55	3.56	0.45
2027	5.83	3.74	6.73	3.67	0.69
2028	6.06	3.92	6.96	3.83	0.93
2029	6.36	4.18	7.25	4.05	1.29
2030	6.54	4.31	7.43	4.15	1.61
2031	6.72	4.44	7.63	4.28	1.63
2032	6.84	4.51	7.76	4.34	1.74
2033	7.07	4.68	8.00	4.50	1.79
2034	7.18	4.74	8.14	4.56	1.75
2035	7.28	4.79	8.28	4.61	1.72
2036	7.43	4.87	8.46	4.71	1.58
2037	7.61	5.00	8.67	4.84	1.62
2038	7.78	5.11	8.86	4.94	1.66
2039	8.05	5.32	9.16	5.15	1.70
2040	8.32	5.53	9.45	5.35	1.74

(1) Standard Resource Sufficiency Period ends December 31, 2025 and Standard Resource Deficiency Period begins January 1, 2026.

(2) The avoided cost price has been reduced by wind or solar integration charges applicable to QF resources located in PacifiCorp's Balancing Area Authority (BAA) (in-system). If wind or solar QF resource is not in PacifiCorp's BAA, prices will be increased by the applicable integration charge.

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**Avoided Cost Prices (Continued)**
**Standard Fixed Avoided Cost Prices for Fixed and Tracking Solar QF (¢/kWh)**

Deliveries During Calendar Year	Fixed Solar QF (1,2)		Tracking Solar QF (1,2)		Solar Integration
	On-Peak Energy Price	Off-Peak Energy Price	On-Peak Energy Price	Off-Peak Energy Price	All hours Energy Charge
	(f)	(g)	(h)	(i)	(j)
2021	5.02	4.07	5.02	4.07	0.15
2022	5.08	3.34	5.08	3.34	0.22
2023	4.52	3.23	4.52	3.23	0.24
2024	4.12	3.02	4.12	3.02	0.29
2025	3.43	2.70	3.43	2.70	0.50
2026	4.17	3.57	4.27	3.57	0.37
2027	4.30	3.69	4.40	3.69	0.56
2028	4.48	3.85	4.58	3.85	0.76
2029	4.72	4.07	4.83	4.07	1.05
2030	4.84	4.18	4.95	4.18	1.31
2031	4.99	4.31	5.10	4.31	1.32
2032	5.06	4.37	5.17	4.37	1.42
2033	5.24	4.54	5.36	4.54	1.45
2034	5.32	4.59	5.44	4.59	1.42
2035	5.39	4.65	5.51	4.65	1.40
2036	5.50	4.74	5.62	4.74	1.28
2037	5.64	4.87	5.77	4.87	1.31
2038	5.76	4.97	5.89	4.97	1.34
2039	5.99	5.18	6.13	5.18	1.37
2040	6.21	5.39	6.35	5.39	1.40

- (1) Standard Resource Sufficiency Period ends December 31, 2025 and Standard Resource Deficiency Period begins January 1, 2026.
- (2) The avoided cost price has been reduced by wind or solar integration charges applicable to QF resources located in PacifiCorp's Balancing Area Authority (BAA) (in-system). If wind or solar QF resource is not in PacifiCorp's BAA, prices will be increased by the applicable integration charge.

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**Effective for service on and after November 1, 2021**

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**Avoided Cost Prices (continued)**
**Renewable Fixed Avoided Cost Prices for Base Load and Wind QF (¢/kWh)**

Deliveries During Calendar Year	Renewable Base Load QF (1)		Wind QF (1,2)		Wind Integration
	On-Peak Energy Price	Off-Peak Energy Price	On-Peak Energy Price	Off-Peak Energy Price	All hours Energy Charge
	(a)	(b)	(c)	(d)	(e)
2021	5.04	4.09	5.02	4.07	0.19
2022	5.10	3.37	5.08	3.34	0.27
2023	4.54	3.26	4.51	3.23	0.29
2024	4.08	1.80	4.48	1.76	0.35
2025	4.15	1.93	4.53	1.87	0.61
2026	4.22	1.97	4.62	1.93	0.45
2027	4.36	2.01	4.75	1.94	0.69
2028	4.44	2.13	4.82	2.04	0.93
2029	4.58	2.21	4.93	2.08	1.29
2030	4.71	2.29	5.04	2.13	1.61
2031	4.86	2.28	5.20	2.12	1.63
2032	4.98	2.34	5.33	2.16	1.74
2033	5.09	2.39	5.45	2.22	1.79
2034	5.19	2.46	5.56	2.28	1.75
2035	5.35	2.45	5.73	2.27	1.72
2036	5.45	2.48	5.87	2.32	1.58
2037	5.55	2.57	5.97	2.41	1.62
2038	5.70	2.60	6.13	2.44	1.66
2039	5.83	2.66	6.27	2.49	1.70
2040	5.99	2.70	6.44	2.53	1.74

(1) For the purpose of determining: (i) when the Renewable Qualifying Facility is entitled to renewable avoided cost prices; and (ii) the ownership of environmental attributes and the transfer of Green Tags to PacifiCorp, Renewable Sufficiency Period ends December 31, 2023 and Renewable Deficiency Period begins January 1, 2024.

(2) The avoided cost price has been reduced by wind or solar integration charges applicable to QF resources located in PacifiCorp's Balancing Area Authority (BAA) (in-system). If wind or solar QF resource is not in PacifiCorp's BAA, prices will be increased by the applicable integration charge.

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**Avoided Cost Prices (continued)**
**Renewable Fixed Avoided Cost Prices for Fixed and Tracking Solar QF (¢/kWh)**

Deliveries During Calendar Year	Fixed Solar QF (1,2)		Tracking Solar QF (1,2)		Solar Integration
	On-Peak Energy Price	Off-Peak Energy Price	On-Peak Energy Price	Off-Peak Energy Price	All hours Energy Charge
	(f)	(g)	(h)	(i)	(j)
2021	5.02	4.07	5.02	4.07	0.15
2022	5.08	3.34	5.08	3.34	0.22
2023	4.52	3.23	4.52	3.23	0.24
2024	2.21	1.77	2.40	1.77	0.29
2025	2.21	1.88	2.41	1.88	0.50
2026	2.25	1.93	2.45	1.93	0.37
2027	2.32	1.96	2.53	1.96	0.56
2028	2.34	2.06	2.55	2.06	0.76
2029	2.40	2.10	2.62	2.10	1.05
2030	2.46	2.16	2.68	2.16	1.31
2031	2.56	2.15	2.79	2.15	1.32
2032	2.63	2.20	2.86	2.20	1.42
2033	2.69	2.25	2.93	2.25	1.45
2034	2.73	2.32	2.98	2.32	1.42
2035	2.84	2.31	3.09	2.31	1.40
2036	2.91	2.35	3.16	2.35	1.28
2037	2.94	2.44	3.20	2.44	1.31
2038	3.03	2.47	3.30	2.47	1.34
2039	3.11	2.52	3.38	2.52	1.37
2040	3.20	2.56	3.48	2.56	1.40

(1) For the purpose of determining: (i) when the Renewable Qualifying Facility is entitled to renewable avoided cost prices; and (ii) the ownership of environmental attributes and the transfer of Green Tags to PacifiCorp, Renewable Sufficiency Period ends December 31, 2023 and Renewable Deficiency Period begins January 1, 2024.

(2) The avoided cost price has been reduced by wind or solar integration charges applicable to QF resources located in PacifiCorp's Balancing Area Authority (BAA) (in-system). If wind or solar QF resource is not in PacifiCorp's BAA, prices will be increased by the applicable integration charge.

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**Effective for service on and after November 1, 2021**

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**PACIFIC POWER  
AVOIDED COST CALCULATION**

**STANDARD RATES FOR AVOIDED COST PURCHASES FROM  
ELIGIBLE QUALIFYING FACILITIES**

**OREGON – OCTOBER 2021**



**Exhibit 1**  
**Standard Avoided Cost Prices for Base Load QF (1)**  
**\$/MWh**

Year	Standard Avoided Resource		Base Load QF Resource				
	Avoided Firm Capacity Costs	Energy Only Price	Capacity Contribution	QF Capacity Adder	Capacity Adder Allocated to On-Peak Hours	On-Peak	Off-Peak
	\$/kW-yr	\$/MWh		(\$/kW-yr)	(\$/MWh)	\$/MWh	\$/MWh
	(a)	(b)	(c)	(d) = (a) * (c)	(e) (d) * 1000 / (100.0% x 8760 x 56%)	(f) (e) + (b)	(g) = (b)
2021	Market Based Prices 2021 through 2025 <sup>(h)</sup>					\$50.35	\$40.86
2022						\$51.02	\$33.65
2023						\$45.41	\$32.57
2024						\$41.45	\$30.50
2025						\$34.77	\$27.49
2026	\$100.07	\$36.02	100.0%	100.07	\$20.38	\$56.41	\$36.02
2027	\$102.36	\$37.42	100.0%	102.36	\$20.85	\$58.27	\$37.42
2028	\$104.70	\$39.23	100.0%	104.70	\$21.32	\$60.55	\$39.23
2029	\$107.09	\$41.79	100.0%	107.09	\$21.81	\$63.60	\$41.79
2030	\$109.53	\$43.14	100.0%	109.53	\$22.31	\$65.44	\$43.14
2031	\$112.03	\$44.42	100.0%	112.03	\$22.82	\$67.24	\$44.42
2032	\$114.58	\$45.10	100.0%	114.58	\$23.34	\$68.44	\$45.10
2033	\$117.19	\$46.81	100.0%	117.19	\$23.87	\$70.67	\$46.81
2034	\$119.86	\$47.36	100.0%	119.86	\$24.41	\$71.78	\$47.36
2035	\$122.60	\$47.87	100.0%	122.60	\$24.97	\$72.84	\$47.87
2036	\$125.39	\$48.72	100.0%	125.39	\$25.54	\$74.26	\$48.72
2037	\$128.25	\$49.99	100.0%	128.25	\$26.12	\$76.11	\$49.99
2038	\$131.17	\$51.06	100.0%	131.17	\$26.72	\$77.77	\$51.06
2039	\$134.17	\$53.22	100.0%	134.17	\$27.33	\$80.55	\$53.22
2040	\$137.23	\$55.25	100.0%	137.23	\$27.95	\$83.20	\$55.25
2041	\$140.36	\$56.52	100.0%	140.36	\$28.59	\$85.11	\$56.52
2042	\$143.56	\$57.81	100.0%	143.56	\$29.24	\$87.05	\$57.81

Columns

- (a) Full fixed cost of a proxy CCCT less Capitalized Energy Cost
- (b) Fuel and Capitalized Energy Cost of the Proxy CCCT
- (c) Capacity Contribution of the Avoided Proxy and Base Load QF resources are assumed to be 100%.
- (e) 100.0% is the on-peak capacity factor of the Base Load QF resource  
56% is the percent of all hours that are on-peak
- (f) 2021-2025 On-Peak Blended Market Prices for QF resource
- (g) 2021-2025 Off-Peak Blended Market Prices for QF resource
- (h) Market prices for 2021 is based on average of prices for November 2021 and December 2021

**Exhibit 2**  
**Standard Avoided Cost Prices for Wind QF (1,2)**  
**\$/MWH**

Year	Standard Avoided Resource		Wind QF Resource				
	Avoided Firm Capacity Costs	Energy Only Price	Capacity Contribution	QF Capacity Adder	Capacity Adder Allocated to On-Peak Hours	On-Peak	Off-Peak
	\$/kW-yr	\$/MWh		(\$/kW-yr)	(\$/MWh)	\$/MWh	\$/MWh
	(a)	(b)	(c)	(d)	(e)	(f)	(g)
				= (a) * (c)	(d) *1000 / (37.2% x 8760 x 56%)	= (b) + (e) - Integration	= (b) - Integration

2021						\$50.16	\$40.67
2022	Market Based Prices					\$50.75	\$33.38
2023	2021 through 2025 <sup>(h)</sup>					\$45.12	\$32.28
2024	less Wind Integration (2)					\$41.10	\$30.15
2025						\$34.16	\$26.88
2026	\$100.07	\$36.02	54.5%	54.58	\$29.91	\$65.49	\$35.57
2027	\$102.36	\$37.42	54.5%	55.83	\$30.60	\$67.33	\$36.73
2028	\$104.70	\$39.23	54.5%	57.11	\$31.30	\$69.60	\$38.30
2029	\$107.09	\$41.79	54.5%	58.41	\$32.01	\$72.51	\$40.50
2030	\$109.53	\$43.14	54.5%	59.74	\$32.74	\$74.27	\$41.53
2031	\$112.03	\$44.42	54.5%	61.10	\$33.49	\$76.28	\$42.79
2032	\$114.58	\$45.10	54.5%	62.49	\$34.25	\$77.61	\$43.36
2033	\$117.19	\$46.81	54.5%	63.92	\$35.03	\$80.05	\$45.02
2034	\$119.86	\$47.36	54.5%	65.37	\$35.83	\$81.44	\$45.61
2035	\$122.60	\$47.87	54.5%	66.87	\$36.65	\$82.79	\$46.15
2036	\$125.39	\$48.72	54.5%	68.39	\$37.48	\$84.62	\$47.14
2037	\$128.25	\$49.99	54.5%	69.95	\$38.34	\$86.70	\$48.37
2038	\$131.17	\$51.06	54.5%	71.54	\$39.21	\$88.61	\$49.40
2039	\$134.17	\$53.22	54.5%	73.18	\$40.11	\$91.63	\$51.52
2040	\$137.23	\$55.25	54.5%	74.85	\$41.02	\$94.53	\$53.51
2041	\$140.36	\$56.52	54.5%	76.56	\$41.96	\$96.70	\$54.74
2042	\$143.56	\$57.81	54.5%	78.30	\$42.91	\$98.90	\$55.99

- (1) The avoided cost price is reduced by a wind integration charge from Table 11 for wind QF resources located in PacifiCorp's Balancing Area Authority (BAA) (in-system).  
If QF wind resource is not in PacifiCorp's BAA, prices will be increased by the integration charge from Table 11.
- (2) Wind Integration Cost from Table 11.

Columns

- (a) Full fixed cost of a proxy CCCT less Capitalized Energy Cost  
(b) Fuel and Capitalized Energy Cost of the Proxy CCCT  
(c) Capacity Contribution values for renewable QF (% of nameplate capacity), 2019 IRP  
Wind Capacity Contribution 54.5% Seasonal weighting of values from Table 14  
(e) 37.2% is the on-peak capacity factor of the Wind QF Resource  
56% is the percent of all hours that are on-peak  
(f) 2021-2025 On-Peak Blended Market Prices for QF resource  
(g) 2021-2025 Off-Peak Blended Market Prices for QF resource  
(h) Market prices for 2021 is based on average of prices for November 2021 and December 2021

**Exhibit 3**  
**Standard Avoided Cost Prices for Fixed Solar QF**  
**\$/MWh**

Year	Standard Avoided Resource		Fixed Solar QF				
	Capacity Price	Energy Only Price	Capacity Contribution	QF Capacity Adder	Capacity Adder Allocated to On-Peak Hours	On-Peak	Off-Peak
	\$/kW-yr	\$/MWh	(c)	(\$/kW-yr)	(\$/MWh)	\$/MWh	\$/MWh
	(a)	(b)		(d)	(e)	(f)	(g)
				= (a) * (c)	(d) * 1000 / (37.3% x 8760 x 56%)	= (b) + (e) - Integration	= (b) - Integration
2021						\$50.20	\$40.71
2022	Market Based Prices					\$50.80	\$33.43
2023	2021 through 2025 <sup>(h)</sup>					\$45.17	\$32.33
2024	less Solar Integration (2)					\$41.16	\$30.21
2025						\$34.27	\$26.99
2026	\$100.07	\$36.02	11.04%	\$11.05	\$6.03	\$41.68	\$35.65
2027	\$102.36	\$37.42	11.04%	\$11.30	\$6.17	\$43.03	\$36.86
2028	\$104.70	\$39.23	11.04%	\$11.56	\$6.31	\$44.78	\$38.47
2029	\$107.09	\$41.79	11.04%	\$11.82	\$6.45	\$47.19	\$40.74
2030	\$109.53	\$43.14	11.04%	\$12.09	\$6.60	\$48.43	\$41.83
2031	\$112.03	\$44.42	11.04%	\$12.37	\$6.75	\$49.85	\$43.10
2032	\$114.58	\$45.10	11.04%	\$12.65	\$6.90	\$50.58	\$43.68
2033	\$117.19	\$46.81	11.04%	\$12.93	\$7.06	\$52.42	\$45.36
2034	\$119.86	\$47.36	11.04%	\$13.23	\$7.22	\$53.16	\$45.94
2035	\$122.60	\$47.87	11.04%	\$13.53	\$7.39	\$53.85	\$46.47
2036	\$125.39	\$48.72	11.04%	\$13.84	\$7.55	\$54.99	\$47.44
2037	\$128.25	\$49.99	11.04%	\$14.16	\$7.73	\$56.41	\$48.68
2038	\$131.17	\$51.06	11.04%	\$14.48	\$7.90	\$57.62	\$49.72
2039	\$134.17	\$53.22	11.04%	\$14.81	\$8.08	\$59.93	\$51.85
2040	\$137.23	\$55.25	11.04%	\$15.15	\$8.27	\$62.12	\$53.85
2041	\$140.36	\$56.52	11.04%	\$15.49	\$8.46	\$63.55	\$55.09
2042	\$143.56	\$57.81	11.04%	\$15.85	\$8.65	\$65.00	\$56.35

- (1) The avoided cost price is reduced by a solar integration charge from Table 11 for solar QF resources located in PacifiCorp's Balancing Area Authority (BAA) (in-system).  
If QF solar resource is not in PacifiCorp's BAA, prices will be increased by the integration charge from Table 11.
- (2) Solar Integration Cost from Table 11

Columns

- (a) Full fixed cost of a proxy CCCT less Capitalized Energy Cost  
(b) Fuel and Capitalized Energy Cost of the Proxy CCCT  
(c) Capacity Contribution values for renewable QF (% of nameplate capacity), 2019 IRP  
Fixed Solar Capacity Contribution 11.0% Profile-specific value consistent with methodology used in Table 14  
(e) 37.3% is the on-peak capacity factor of the Fixed Solar QF Resource  
56% is the percent of all hours that are on-peak  
(f) 2021-2025 On-Peak Blended Market Prices for QF resource  
(g) 2021-2025 Off-Peak Blended Market Prices for QF resource  
(h) Market prices for 2021 is based on average of prices for November 2021 and December 2021

**Exhibit 4**  
**Standard Avoided Cost Prices for Tracking Solar QF**  
**\$/MWH**

Year	Standard Avoided Resource		Tracking Solar QF				
	Capacity Price	Energy Only Price	Capacity Contribution	QF Capacity Adder	Capacity Adder Allocated to On-Peak Hours	On-Peak	Off-Peak
	\$/kW-yr	\$/MWh		(\$/kW-yr)	(\$/MWh)	\$/MWh	\$/MWh
	(a)	(b)	(c)	(d)	(e)	(f)	(g)
				= (a) * (c)	(d) * 1000 / (43.0% x 8760 x 56%)	= (b) + (e) - Integration	= (b) - Integration
2021						\$50.20	\$40.71
2022	Market Based Prices					\$50.80	\$33.43
2023	2021 through 2025 <sup>(h)</sup>					\$45.17	\$32.33
2024	less Solar Integration (2)					\$41.16	\$30.21
2025						\$34.27	\$26.99
2026	\$100.07	\$36.02	14.80%	\$14.81	\$7.02	\$42.67	\$35.65
2027	\$102.36	\$37.42	14.80%	\$15.15	\$7.18	\$44.04	\$36.86
2028	\$104.70	\$39.23	14.80%	\$15.49	\$7.34	\$45.81	\$38.47
2029	\$107.09	\$41.79	14.80%	\$15.85	\$7.51	\$48.25	\$40.74
2030	\$109.53	\$43.14	14.80%	\$16.21	\$7.68	\$49.51	\$41.83
2031	\$112.03	\$44.42	14.80%	\$16.58	\$7.86	\$50.96	\$43.10
2032	\$114.58	\$45.10	14.80%	\$16.95	\$8.04	\$51.72	\$43.68
2033	\$117.19	\$46.81	14.80%	\$17.34	\$8.22	\$53.58	\$45.36
2034	\$119.86	\$47.36	14.80%	\$17.73	\$8.41	\$54.35	\$45.94
2035	\$122.60	\$47.87	14.80%	\$18.14	\$8.60	\$55.07	\$46.47
2036	\$125.39	\$48.72	14.80%	\$18.55	\$8.80	\$56.24	\$47.44
2037	\$128.25	\$49.99	14.80%	\$18.98	\$9.00	\$57.67	\$48.68
2038	\$131.17	\$51.06	14.80%	\$19.41	\$9.20	\$58.92	\$49.72
2039	\$134.17	\$53.22	14.80%	\$19.85	\$9.41	\$61.26	\$51.85
2040	\$137.23	\$55.25	14.80%	\$20.30	\$9.63	\$63.48	\$53.85
2041	\$140.36	\$56.52	14.80%	\$20.77	\$9.85	\$64.94	\$55.09
2042	\$143.56	\$57.81	14.80%	\$21.24	\$10.07	\$66.42	\$56.35

- (1) The avoided cost price is reduced by a solar integration charge from Table 11 for solar QF resources located in PacifiCorp's Balancing Area Authority (BAA) (in-system). If QF solar resource is not in PacifiCorp's BAA, prices will be increased by the integration charge from Table 11.
- (2) Solar Integration Cost from Table 11

Columns

- (a) Full fixed cost of a proxy CCCT less capitalized energy
- (b) Fuel and Capitalized Energy Cost of the Proxy CCCT
- (c) Peak Capacity Contribution values for renewables (% of nameplate capacity)  
Tracking Solar Capacity Contribution 14.8% Seasonal weighting of values from Table 14
- (e) 43.0% is the on-peak capacity factor of the Tracking Solar QF Resource  
56% is the percent of all hours that are on-peak
- (f) 2021-2025 On-Peak Blended Market Prices for QF resource
- (g) 2021-2025 Off-Peak Blended Market Prices for QF resource
- (h) Market prices for 2021 is based on average of prices for November 2021 and December 2021

**Exhibit 5**  
**Renewable Standard Avoided Cost Prices for Base Load QF**  
**\$/MWh**

Year	Renewable Wind Avoided Resource		Renewable Base Load QF Resource			On-Peak	Off-Peak
	On-Peak	Off-Peak	Avoided Firm Capacity Costs	QF Capacity Adder	Capacity Adder Allocated to On-Peak Hours		
	(\$/MWh)	(\$/MWh)	\$/kW-yr	(\$/kW-yr)	(\$/MWh)		
	(a)	(b)	(c)	(d)	(e)	(f)	(g)
				(c) x 86%	(d) *1000 / (100.0% x 8760 x 56%)	= (a) + (e) + Int	= (b) + Int
2021	Market Based Prices					\$50.35	\$40.86
2022	2021 through 2023					\$51.02	\$33.65
2023						\$45.41	\$32.57
2024	\$23.81	\$17.60	\$95.66	\$81.82	\$16.66	\$40.82	\$17.95
2025	\$23.83	\$18.67	\$97.84	\$83.68	\$17.04	\$41.48	\$19.28
2026	\$24.27	\$19.25	\$100.07	\$85.59	\$17.43	\$42.15	\$19.70
2027	\$25.03	\$19.44	\$102.36	\$87.55	\$17.83	\$43.55	\$20.13
2028	\$25.20	\$20.39	\$104.70	\$89.55	\$18.24	\$44.37	\$21.32
2029	\$25.81	\$20.76	\$107.09	\$91.59	\$18.66	\$45.76	\$22.05
2030	\$26.38	\$21.28	\$109.53	\$93.68	\$19.08	\$47.07	\$22.89
2031	\$27.44	\$21.19	\$112.03	\$95.82	\$19.52	\$48.59	\$22.82
2032	\$28.09	\$21.64	\$114.58	\$98.00	\$19.96	\$49.79	\$23.38
2033	\$28.73	\$22.15	\$117.19	\$100.23	\$20.41	\$50.93	\$23.94
2034	\$29.26	\$22.83	\$119.86	\$102.51	\$20.88	\$51.89	\$24.58
2035	\$30.38	\$22.73	\$122.60	\$104.86	\$21.36	\$53.46	\$24.45
2036	\$31.12	\$23.21	\$125.39	\$107.24	\$21.84	\$54.54	\$24.79
2037	\$31.54	\$24.08	\$128.25	\$109.69	\$22.34	\$55.50	\$25.70
2038	\$32.46	\$24.38	\$131.17	\$112.19	\$22.85	\$56.97	\$26.04
2039	\$33.27	\$24.86	\$134.17	\$114.75	\$23.37	\$58.34	\$26.56
2040	\$34.22	\$25.30	\$137.23	\$117.37	\$23.91	\$59.87	\$27.04
2041	\$34.83	\$25.90	\$140.36	\$120.05	\$24.45	\$61.06	\$27.68
2042	\$36.13	\$25.93	\$143.56	\$122.78	\$25.01	\$62.96	\$27.75

Columns

- (a) Table 13 Column (d)
- (b) Table 13 Column (e)
- (c) Full fixed cost of a proxy CCCT less Capitalized Energy Cost
- (d) Column (c) multiplied by difference in capacity contribution relative to renewable proxy wind resource
- (e) 100.0% is the on-peak capacity factor of the Proxy CCCT Resource  
56% is the percent of all hours that are on-peak
- (f) 2021-2023 On-Peak Blended Market Prices for QF resource
- (g) 2021-2023 Off-Peak Blended Market Prices for QF resource
- (h) Market prices for 2021 is based on average of prices for November 2021 and December 2021
- Int During the deficiency period, prices are increased by the avoided wind integration charge from Table 11

**Exhibit 6**  
**Renewable Standard Avoided Cost Prices for Wind QF (1)**  
**\$/MWH**

Year	Renewable Wind Avoided Resource		Wind QF Resource			Wind QF Resource	
	On-Peak	Off-Peak	Avoided Firm Capacity Costs	QF Capacity Adder	Capacity Adder Allocated to On-Peak Hours	On-Peak	Off-Peak
	(\$/MWh)	(\$/MWh)	\$/kW-yr	(\$/kW-yr)	(\$/MWh)	\$/MWh	\$/MWh
	(a)	(b)	(c)	(d)	(e)	(f)	(g)
				(c) x 40%	(d) *1000 / (37.2%x 8760 x 56%)	= (a) + (e) + Int	= (b) + Int
2021	Market Based Prices					\$50.16	\$40.67
2022	2021 through 2023					\$50.75	\$33.38
2023	less Wind Integration (2)					\$45.12	\$32.28
2024	\$23.81	\$17.60	\$95.66	\$38.33	\$21.01	\$44.82	\$17.60
2025	\$23.83	\$18.67	\$97.84	\$39.20	\$21.49	\$45.32	\$18.67
2026	\$24.27	\$19.25	\$100.07	\$40.10	\$21.98	\$46.25	\$19.25
2027	\$25.03	\$19.44	\$102.36	\$41.02	\$22.48	\$47.51	\$19.44
2028	\$25.20	\$20.39	\$104.70	\$41.95	\$22.99	\$48.19	\$20.39
2029	\$25.81	\$20.76	\$107.09	\$42.91	\$23.52	\$49.33	\$20.76
2030	\$26.38	\$21.28	\$109.53	\$43.89	\$24.05	\$50.43	\$21.28
2031	\$27.44	\$21.19	\$112.03	\$44.89	\$24.60	\$52.04	\$21.19
2032	\$28.09	\$21.64	\$114.58	\$45.91	\$25.16	\$53.25	\$21.64
2033	\$28.73	\$22.15	\$117.19	\$46.96	\$25.74	\$54.47	\$22.15
2034	\$29.26	\$22.83	\$119.86	\$48.03	\$26.32	\$55.58	\$22.83
2035	\$30.38	\$22.73	\$122.60	\$49.13	\$26.92	\$57.30	\$22.73
2036	\$31.12	\$23.21	\$125.39	\$50.24	\$27.54	\$58.66	\$23.21
2037	\$31.54	\$24.08	\$128.25	\$51.39	\$28.16	\$59.70	\$24.08
2038	\$32.46	\$24.38	\$131.17	\$52.56	\$28.81	\$61.27	\$24.38
2039	\$33.27	\$24.86	\$134.17	\$53.76	\$29.46	\$62.73	\$24.86
2040	\$34.22	\$25.30	\$137.23	\$54.99	\$30.14	\$64.36	\$25.30
2041	\$34.83	\$25.90	\$140.36	\$56.24	\$30.82	\$65.65	\$25.90
2042	\$36.13	\$25.93	\$143.56	\$57.53	\$31.53	\$67.66	\$25.93

- (1) If wind QF is not in PacifiCorp's BAA, prices in all years will be increased by the wind integration charge from Table 11.  
(2) Wind Integration Cost from Table 11

Columns

- (a) Table 13 Column (d)  
(b) Table 13 Column (e)  
(c) Full fixed cost of a proxy CCCT less Capitalized Energy Cost  
(d) Column (c) multiplied by difference in capacity contribution relative to renewable proxy wind resource  
(e) 37.2% is the on-peak capacity factor of the Wind QF resource  
56% is the percent of all hours that are on-peak  
(f) 2021-2023 On-Peak Blended Market Prices for QF resource  
(g) 2021-2023 Off-Peak Blended Market Prices for QF resource  
(h) Market prices for 2021 is based on average of prices for November 2021 and December 2021  
Int During the deficiency period, the stated avoided cost prices reflect the same integration costs for the avoided wind proxy and a wind QF in PacifiCorp's Balancing Area Authority (BAA).  
During the sufficiency period, the stated avoided cost prices are reduced by the integration charge from Table 11 applicable to wind QF resources located in PacifiCorp's BAA (in-system).

**Exhibit 7**

**Renewable Standard Avoided Cost Prices for Fixed Solar QF (1)  
\$/MWH**

Year	Renewable Wind Avoided Resource		Fixed Solar QF Resource			Fixed Solar QF	
	On-Peak	Off-Peak	Avoided Firm Capacity Costs	QF Capacity Adder	Capacity Adder Allocated to On-Peak Hours	On-Peak	Off-Peak
	(\$/MWh)	(\$/MWh)	\$/kW-yr	(\$/kW-yr)	(\$/MWh)	\$/MWh	\$/MWh
	(a)	(b)	(c)	(d) (c) x -3.4%	(e) (d) *1000 / (37.3%x 8760 x 56%)	(f) = (a) + (e) + Int	(g) = (b) + Int
2021	Market Based Prices					\$50.20	\$40.71
2022	2021 through 2023					\$50.80	\$33.43
2023	less Solar Integration (2)					\$45.17	\$32.33
2024	\$23.81	\$17.60	\$95.66	(\$3.29)	(\$1.79)	\$22.08	\$17.66
2025	\$23.83	\$18.67	\$97.84	(\$3.36)	(\$1.83)	\$22.11	\$18.78
2026	\$24.27	\$19.25	\$100.07	(\$3.44)	(\$1.88)	\$22.47	\$19.33
2027	\$25.03	\$19.44	\$102.36	(\$3.52)	(\$1.92)	\$23.24	\$19.57
2028	\$25.20	\$20.39	\$104.70	(\$3.60)	(\$1.96)	\$23.41	\$20.56
2029	\$25.81	\$20.76	\$107.09	(\$3.68)	(\$2.01)	\$24.04	\$21.00
2030	\$26.38	\$21.28	\$109.53	(\$3.76)	(\$2.05)	\$24.63	\$21.58
2031	\$27.44	\$21.19	\$112.03	(\$3.85)	(\$2.10)	\$25.65	\$21.50
2032	\$28.09	\$21.64	\$114.58	(\$3.94)	(\$2.15)	\$26.26	\$21.96
2033	\$28.73	\$22.15	\$117.19	(\$4.02)	(\$2.20)	\$26.87	\$22.49
2034	\$29.26	\$22.83	\$119.86	(\$4.12)	(\$2.25)	\$27.34	\$23.16
2035	\$30.38	\$22.73	\$122.60	(\$4.21)	(\$2.30)	\$28.40	\$23.05
2036	\$31.12	\$23.21	\$125.39	(\$4.31)	(\$2.35)	\$29.07	\$23.51
2037	\$31.54	\$24.08	\$128.25	(\$4.40)	(\$2.40)	\$29.45	\$24.39
2038	\$32.46	\$24.38	\$131.17	(\$4.50)	(\$2.46)	\$30.32	\$24.70
2039	\$33.27	\$24.86	\$134.17	(\$4.61)	(\$2.52)	\$31.08	\$25.19
2040	\$34.22	\$25.30	\$137.23	(\$4.71)	(\$2.57)	\$31.99	\$25.64
2041	\$34.83	\$25.90	\$140.36	(\$4.82)	(\$2.63)	\$32.55	\$26.25
2042	\$36.13	\$25.93	\$143.56	(\$4.93)	(\$2.69)	\$33.80	\$26.29

- (1) If solar QF is not in PacifiCorp's BAA, prices in all years will be increased by the solar integration charge from Table 11.
- (2) Solar Integration Cost from Table 11

Columns

- (a) Table 13 Column (d)
  - (b) Table 13 Column (e)
  - (c) Full fixed cost of a proxy CCCT less Capitalized Energy Cost
  - (d) Column (c) multiplied by difference in capacity contribution relative to renewable proxy wind resource
  - (e) 37.3% is the on-peak capacity factor of the Fixed Solar QF resource  
56% is the percent of all hours that are on-peak
  - (f) 2021-2023 On-Peak Blended Market Prices for QF resource
  - (g) 2021-2023 Off-Peak Blended Market Prices for QF resource
  - (h) Market prices for 2021 is based on average of prices for November 2021 and December 2021
- Int During the deficiency period, the stated avoided cost prices reflect the difference in integration costs for the avoided wind proxy and a solar QF in PacifiCorp's Balancing Area Authority (BAA).  
During the sufficiency period, the stated avoided cost prices are reduced by the integration charge from Table 11 applicable to solar QF resources located in PacifiCorp's BAA (in-system).

**Exhibit 8**

**Renewable Standard Avoided Cost Prices for Tracking Solar QF (1)  
\$/MWH**

Year	Renewable Wind Avoided Resource		Tracking Solar QF Resource			Tracking Solar QF	
	On-Peak	Off-Peak	Avoided Firm Capacity Costs	QF Capacity Adder	Capacity Adder Allocated to On-Peak Hours	On-Peak	Off-Peak
	(\$/MWh)	(\$/MWh)	\$/kW-yr	(\$/kW-yr)	(\$/MWh)	\$/MWh	\$/MWh
	(a)	(b)	(c)	(d) (c) x 0.3%	(e) (d) *1000 / (43.0% x 8760 x 56%)	(f) = (a) + (e) + Int	(g) = (b) + Int
2021	Market Based Prices					\$50.20	\$40.71
2022	2021 through 2023					\$50.80	\$33.43
2023	less Solar Integration (2)					\$45.17	\$32.33
2024	\$23.81	\$17.60	\$95.66	\$0.31	\$0.15	\$24.02	\$17.66
2025	\$23.83	\$18.67	\$97.84	\$0.32	\$0.15	\$24.09	\$18.78
2026	\$24.27	\$19.25	\$100.07	\$0.32	\$0.15	\$24.50	\$19.33
2027	\$25.03	\$19.44	\$102.36	\$0.33	\$0.16	\$25.32	\$19.57
2028	\$25.20	\$20.39	\$104.70	\$0.34	\$0.16	\$25.53	\$20.56
2029	\$25.81	\$20.76	\$107.09	\$0.35	\$0.16	\$26.21	\$21.00
2030	\$26.38	\$21.28	\$109.53	\$0.36	\$0.17	\$26.85	\$21.58
2031	\$27.44	\$21.19	\$112.03	\$0.36	\$0.17	\$27.92	\$21.50
2032	\$28.09	\$21.64	\$114.58	\$0.37	\$0.18	\$28.59	\$21.96
2033	\$28.73	\$22.15	\$117.19	\$0.38	\$0.18	\$29.25	\$22.49
2034	\$29.26	\$22.83	\$119.86	\$0.39	\$0.18	\$29.77	\$23.16
2035	\$30.38	\$22.73	\$122.60	\$0.40	\$0.19	\$30.89	\$23.05
2036	\$31.12	\$23.21	\$125.39	\$0.41	\$0.19	\$31.61	\$23.51
2037	\$31.54	\$24.08	\$128.25	\$0.42	\$0.20	\$32.05	\$24.39
2038	\$32.46	\$24.38	\$131.17	\$0.43	\$0.20	\$32.98	\$24.70
2039	\$33.27	\$24.86	\$134.17	\$0.44	\$0.21	\$33.81	\$25.19
2040	\$34.22	\$25.30	\$137.23	\$0.45	\$0.21	\$34.77	\$25.64
2041	\$34.83	\$25.90	\$140.36	\$0.46	\$0.22	\$35.40	\$26.25
2042	\$36.13	\$25.93	\$143.56	\$0.47	\$0.22	\$36.71	\$26.29

(1) If solar QF is not in PacifiCorp's BAA, prices in all years will be increased by the solar integration charge from Table 11.

(2) Solar Integration Cost from Table 11

**Columns**

- (a) Table 13 Column (d)
- (b) Table 13 Column (e)
- (c) Full fixed cost of a proxy CCCT less Capitalized Energy Cost
- (d) Column (c) multiplied by difference in capacity contribution relative to renewable proxy wind resource
- (e) 43.0% is the on-peak capacity factor of the Tracking Solar QF Resource  
56% is the percent of all hours that are on-peak
- (f) 2021-2023 On-Peak Blended Market Prices for QF resource
- (g) 2021-2023 Off-Peak Blended Market Prices for QF resource
- (h) Market prices for 2021 is based on average of prices for November 2021 and December 2021
- Int During the deficiency period, the stated avoided cost prices reflect the difference in integration costs for the avoided wind proxy and a solar QF in PacifiCorp's Balancing Area Authority (BAA).  
During the sufficiency period, the stated avoided cost prices are reduced by the integration charge from Table 11 applicable to solar QF resources located in PacifiCorp's BAA (in-system).



**Exhibit 9  
Market Price - Blending Matrix (1)**

Period	On-Peak				Off-Peak			
	COB	Mid Columbia	Palo Verde	Total	COB	Mid Columbia	Palo Verde	Total
1/1/21	0.0%	95.3%	4.7%	100.0%	3.3%	96.7%	0.0%	100.0%
2/1/21	26.6%	63.8%	9.6%	100.0%	29.4%	64.3%	6.2%	100.0%
3/1/21	0.8%	48.6%	50.6%	100.0%	4.5%	81.2%	14.4%	100.0%
4/1/21	0.0%	0.2%	99.8%	100.0%	10.3%	0.0%	89.7%	100.0%
5/1/21	2.5%	0.8%	96.7%	100.0%	0.0%	66.9%	33.1%	100.0%
6/1/21	54.8%	44.4%	0.8%	100.0%	30.8%	69.2%	0.0%	100.0%
7/1/21	2.8%	89.8%	7.5%	100.0%	2.3%	95.8%	1.8%	100.0%
8/1/21	5.7%	90.5%	3.9%	100.0%	0.0%	96.5%	3.5%	100.0%
9/1/21	5.5%	86.1%	8.4%	100.0%	0.0%	100.0%	0.0%	100.0%
10/1/21	0.0%	90.6%	9.4%	100.0%	0.0%	29.0%	71.0%	100.0%
11/1/21	0.0%	9.6%	90.4%	100.0%	0.0%	6.1%	93.9%	100.0%
12/1/21	0.0%	45.0%	55.0%	100.0%	0.0%	15.9%	84.1%	100.0%
1/1/22	0.0%	54.6%	45.4%	100.0%	0.0%	42.6%	57.4%	100.0%
2/1/22	3.3%	63.5%	33.1%	100.0%	3.7%	77.6%	18.7%	100.0%
3/1/22	0.0%	63.7%	36.3%	100.0%	0.0%	84.4%	15.6%	100.0%
4/1/22	0.0%	53.9%	46.1%	100.0%	0.0%	90.8%	9.2%	100.0%
5/1/22	0.0%	64.5%	35.5%	100.0%	8.5%	89.6%	2.0%	100.0%
6/1/22	4.0%	95.9%	0.1%	100.0%	14.6%	85.4%	0.0%	100.0%
7/1/22	4.1%	93.1%	2.8%	100.0%	0.0%	100.0%	0.0%	100.0%
8/1/22	8.2%	86.4%	5.4%	100.0%	0.0%	95.1%	4.9%	100.0%
9/1/22	3.1%	87.2%	9.6%	100.0%	0.0%	100.0%	0.0%	100.0%
10/1/22	0.0%	57.5%	42.5%	100.0%	0.0%	49.8%	50.2%	100.0%
11/1/22	0.0%	7.6%	92.4%	100.0%	0.0%	8.0%	92.0%	100.0%
12/1/22	0.0%	43.2%	56.8%	100.0%	0.0%	26.4%	73.6%	100.0%
1/1/23	0.0%	66.1%	33.9%	100.0%	0.0%	11.0%	89.0%	100.0%
2/1/23	0.0%	70.8%	29.2%	100.0%	25.6%	60.2%	14.1%	100.0%
3/1/23	0.0%	46.4%	53.6%	100.0%	0.0%	51.5%	48.5%	100.0%
4/1/23	0.0%	48.8%	51.2%	100.0%	0.0%	64.3%	35.7%	100.0%
5/1/23	0.0%	47.6%	52.4%	100.0%	2.3%	94.9%	2.8%	100.0%
6/1/23	0.6%	98.9%	0.5%	100.0%	6.2%	93.8%	0.0%	100.0%
7/1/23	4.1%	89.3%	6.6%	100.0%	0.0%	99.5%	0.5%	100.0%
8/1/23	6.4%	87.2%	6.4%	100.0%	11.8%	73.8%	14.4%	100.0%
9/1/23	3.9%	88.1%	8.0%	100.0%	0.0%	89.4%	10.6%	100.0%
10/1/23	0.0%	50.2%	49.8%	100.0%	0.0%	51.8%	48.2%	100.0%
11/1/23	0.0%	5.2%	94.8%	100.0%	0.0%	0.0%	100.0%	100.0%
12/1/23	0.0%	52.3%	47.7%	100.0%	0.0%	15.0%	85.0%	100.0%
1/1/24	0.0%	84.4%	15.6%	100.0%	0.0%	17.0%	83.0%	100.0%
2/1/24	4.0%	78.8%	17.2%	100.0%	2.3%	70.0%	27.7%	100.0%
3/1/24	0.0%	71.0%	29.0%	100.0%	0.0%	68.4%	31.6%	100.0%
4/1/24	0.0%	53.0%	47.0%	100.0%	0.0%	39.1%	60.9%	100.0%
5/1/24	0.0%	37.2%	62.8%	100.0%	0.0%	98.2%	1.8%	100.0%
6/1/24	0.0%	100.0%	0.0%	100.0%	0.0%	100.0%	0.0%	100.0%
7/1/24	11.9%	84.7%	3.3%	100.0%	4.5%	95.3%	0.2%	100.0%
8/1/24	9.2%	86.9%	3.8%	100.0%	0.0%	67.8%	32.2%	100.0%
9/1/24	5.9%	83.8%	10.3%	100.0%	0.0%	69.4%	30.6%	100.0%
10/1/24	0.0%	49.1%	50.9%	100.0%	0.0%	35.2%	64.8%	100.0%
11/1/24	0.0%	29.4%	70.6%	100.0%	0.0%	29.2%	70.8%	100.0%
12/1/24	0.0%	51.0%	49.0%	100.0%	0.0%	31.9%	68.1%	100.0%

1/1/37	0.0%	82.8%	17.2%	100.0%	5.8%	86.1%	8.0%	100.0%
2/1/37	6.2%	77.2%	16.7%	100.0%	16.2%	73.6%	10.2%	100.0%
3/1/37	11.6%	68.3%	20.1%	100.0%	25.0%	35.9%	39.1%	100.0%
4/1/37	28.1%	58.5%	13.4%	100.0%	59.6%	19.7%	20.7%	100.0%
5/1/37	30.1%	69.3%	0.6%	100.0%	70.7%	19.2%	10.1%	100.0%
6/1/37	40.3%	57.6%	2.1%	100.0%	61.7%	21.8%	16.5%	100.0%
7/1/37	4.6%	94.2%	1.2%	100.0%	40.9%	28.5%	30.5%	100.0%
8/1/37	4.6%	94.4%	1.0%	100.0%	9.7%	70.7%	19.6%	100.0%
9/1/37	6.1%	88.0%	5.9%	100.0%	0.1%	99.3%	0.6%	100.0%
10/1/37	0.1%	80.1%	19.9%	100.0%	17.3%	76.2%	6.5%	100.0%
11/1/37	10.1%	73.4%	16.4%	100.0%	15.7%	64.7%	19.5%	100.0%
12/1/37	1.1%	82.7%	16.2%	100.0%	0.9%	88.5%	10.5%	100.0%
1/1/38	0.1%	84.1%	15.9%	100.0%	11.5%	74.3%	14.2%	100.0%
2/1/38	6.5%	75.7%	17.9%	100.0%	19.0%	73.5%	7.5%	100.0%
3/1/38	20.3%	68.8%	10.9%	100.0%	25.6%	45.5%	28.9%	100.0%
4/1/38	30.2%	53.9%	15.9%	100.0%	79.6%	13.5%	6.9%	100.0%
5/1/38	27.9%	72.0%	0.2%	100.0%	65.4%	25.7%	8.9%	100.0%
6/1/38	52.4%	46.3%	1.3%	100.0%	61.5%	23.7%	14.8%	100.0%
7/1/38	6.7%	93.3%	0.0%	100.0%	51.9%	30.0%	18.1%	100.0%
8/1/38	5.6%	94.4%	0.0%	100.0%	33.6%	54.3%	12.1%	100.0%
9/1/38	3.6%	90.5%	5.9%	100.0%	0.9%	92.4%	6.6%	100.0%
10/1/38	0.8%	79.0%	20.2%	100.0%	18.8%	62.6%	18.6%	100.0%
11/1/38	11.6%	76.2%	12.3%	100.0%	20.1%	53.9%	26.1%	100.0%
12/1/38	5.0%	75.9%	19.1%	100.0%	12.1%	76.5%	11.3%	100.0%

(1) Blending weights are calculated using system balancing purchases and sales from GRID run using June 2021 Official Forward Price Curve

**Table 1**  
**2019 IRP Preferred Portfolio**

Resource	Capacity (MW)																			Resource Totals 1/			
	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	10-year	20-year	
<b>East</b>																							
<b>Expansion Resources</b>																							
CCCT - D.Johns - J 1x1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	505	-	-	505	
<b>Total CCCT</b>	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	505	-	-	505	
SCCT Frame NTN	-	-	-	-	-	-	-	185	-	-	-	370	-	-	-	-	-	-	-	-	-	185	555
SCCT Frame WYSW	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	370	-	-	370
<b>Total SCCT</b>	-	-	-	-	-	-	-	185	-	-	-	370	-	-	-	-	-	-	-	370	-	185	925
Wind, GO	-	-	-	-	-	-	-	-	-	-	-	1,040	-	-	-	-	-	-	-	-	-	-	1,040
Wind, UT	-	-	-	-	69	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	69	69
Wind, WYAE	-	-	-	-	-	1,920	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1,920	1,920
Wind+Storage, GO	-	-	-	-	-	-	-	-	-	-	-	-	-	60	-	-	-	-	-	-	-	-	60
<b>Total Wind</b>	-	-	-	-	69	1,920	-	-	-	-	-	1,040	-	60	-	-	-	-	-	-	-	1,989	3,089
Utility Solar+Storage - PV - Utah-S	-	-	-	-	-	231	-	-	-	-	-	500	-	-	-	-	-	-	-	-	-	231	731
Utility Solar+Storage - PV - Huntington	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	909	-	-	909
Utility Solar+Storage - PV - Utah-N	-	-	159	64	3	674	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	900
<b>Total Solar</b>	-	-	159	64	3	904	-	-	-	-	-	500	-	-	-	-	-	-	-	909	-	1,131	2,540
<b>Demand Response Total</b>	4.1	-	7.0	-	18.1	-	8.2	7.2	-	-	123.3	8.2	-	12.0	-	-	15.3	3.7	10.5	136.5	44.6	354.1	
<b>Energy Efficiency Total</b>	74	83	85	88	92	92	91	90	90	87	80	77	72	70	65	49	45	35	30	32	870	1,423	
Battery Storage - Utah-S	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	195	-	195.0	
Battery Storage - WYSW	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	15.0	-	15.0	
Battery Storage - Idaho	-	-	-	-	-	-	-	-	-	-	-	-	30.0	-	-	-	-	-	-	150.0	-	180.0	
FOT East - Summer	-	-	-	-	-	-	-	-	-	88	300	199	174	206	298	300	300	300	300	300	9	138	
<b>West</b>																							
<b>Expansion Resources</b>																							
SCCT Frame WV	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	443	-	443	
<b>Total SCCT</b>	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	443	-	443	
Wind+Storage, YK	-	-	-	-	-	-	-	-	-	-	10	-	-	-	-	-	-	-	-	11	-	20	
<b>Total Wind</b>	-	-	-	-	-	-	-	-	-	-	10	-	-	-	-	-	-	-	-	11	-	20	
Utility Solar+Storage - PV - Jbridger	-	-	-	-	-	354	-	-	-	-	359	-	-	-	-	-	-	-	-	702	354	1,415	
Utility Solar+Storage - PV - S-Oregon	-	-	-	-	-	500	-	-	-	-	-	-	-	475	-	-	-	-	-	-	-	500	975
Utility Solar+Storage - PV - Yakima	-	-	-	-	-	395	-	-	-	-	-	-	-	-	-	-	-	419	-	-	-	395	815
<b>Total Solar</b>	-	-	-	-	-	1,249	-	-	-	-	359	-	-	475	-	-	-	419	-	702	1,249	3,205	
<b>Demand Response Total</b>	-	-	-	-	-	-	-	-	-	-	9.4	-	-	-	-	-	-	-	48.8	32.1	-	90.2	
<b>Energy Efficiency Total</b>	52	49	48	55	55	59	56	54	54	51	46	43	42	40	35	33	33	30	29	28	533	892	
Battery Storage - S-Oregon	-	-	-	-	-	-	-	-	-	-	210	-	-	60	-	-	-	-	-	180	-	450	
Battery Storage - Willamette Valley	-	-	-	-	-	-	-	-	-	75	45	-	-	-	-	-	-	-	-	-	-	75	120
Battery Storage - Portland NC	-	-	-	-	-	-	-	-	-	-	105	-	-	-	-	-	-	-	-	-	-	105	
Battery Storage - Walla Walla	-	-	-	-	-	-	-	-	-	-	75	-	-	60	-	-	-	-	-	60	-	195	
Battery Storage - Yakima	-	-	-	-	-	-	-	-	-	105	-	-	-	-	-	-	-	-	-	-	-	105	105
FOT West - Summer	998	719	493	503	498	131	126	191	264	1,075	1,075	1,075	1,075	1,075	1,075	1,075	1,074	977	1,074	1,075	500	782	
FOT West - Winter	151	131	268	303	314	44	51	53	100	232	222	173	192	128	63	-	35	-	-	-	165	123	
Existing Plant Retirements/Conversions	-	(61)	(573)	(224)	(1)	(412)	-	(505)	(85)	(912)	(449)	(396)	(350)	(114)	(557)	(156)	(36)	(280)	(2,260)	(745)			
Annual Additions, Long Term Resources	130	132	299	206	237	4,225	155	336	143	318	1,063	2,038	144	303	574	82	93	488	2,355	1,530			
Annual Additions, Short Term Resources	1,149	850	761	806	812	175	177	244	364	1,394	1,597	1,447	1,441	1,409	1,435	1,375	1,410	1,277	1,374	1,375			
<b>Total Annual Additions</b>	1,279	982	1,060	1,012	1,049	4,400	333	580	507	1,712	2,661	3,485	1,584	1,712	2,010	1,457	1,503	1,765	3,729	2,905			

**Table 2**  
**Avoided Costs (\$/MWh)**  
**Energy Prices**

Year	Winter Season					Summer Season				Winter Season		
	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
<b>On-Peak (HLH Market Purchase)</b>												
2021											45.75	54.95
2022	52.88	48.27	36.64	28.74	27.17	36.20	78.16	103.09	80.49	41.51	35.71	43.36
2023	45.97	41.57	33.96	25.33	24.99	24.06	78.70	91.26	73.95	35.86	29.85	39.45
2024	44.62	39.65	32.81	26.90	27.54	26.27	70.54	63.14	60.35	33.21	31.59	40.80
2025	42.40	37.92	29.82	22.09	20.59	24.40	53.33	36.13	45.34	29.94	31.83	43.46
2026	37.38	35.48	26.69	18.11	14.63	22.71	32.05	38.79	46.73	29.01	32.24	42.57
2027	38.24	36.59	27.80	19.28	14.55	24.00	37.16	46.02	46.39	30.58	33.35	49.35
2028	46.38	44.23	28.68	20.90	17.52	28.03	44.13	46.97	47.90	33.28	38.49	50.34
2029	46.30	42.98	31.37	20.00	17.41	23.76	41.14	66.28	58.26	36.93	36.09	49.31
2030	44.25	44.74	32.13	20.79	15.12	24.12	42.76	58.38	59.09	38.60	36.34	52.04
2031	49.37	48.45	33.71	22.59	13.69	25.79	54.40	68.41	61.74	39.99	36.42	54.53
2032	52.75	44.64	33.04	19.55	12.89	26.52	56.35	65.63	61.38	43.18	40.04	59.20
2033	54.45	49.06	34.22	19.36	12.66	25.22	57.81	65.49	52.94	43.12	42.13	59.26
2034	57.73	50.12	34.87	19.37	12.29	26.85	62.07	66.91	50.18	40.90	41.92	57.43
2035	55.52	50.43	33.56	18.40	9.28	23.17	60.07	94.28	71.46	44.12	39.21	59.44
2036	59.43	51.61	33.50	19.72	6.39	19.45	70.33	81.05	66.13	43.51	38.97	62.81
2037	62.60	54.19	36.91	18.60	6.32	20.95	70.95	85.33	64.84	42.86	40.51	65.05
2038	61.03	54.31	36.30	17.53	5.48	23.69	69.25	84.64	71.33	44.86	42.24	68.16
2039	61.00	54.71	38.93	16.36	3.44	18.02	69.42	85.24	63.34	45.05	45.71	67.85
2040	63.24	54.48	40.20	19.40	8.69	28.91	82.14	80.85	59.65	49.51	49.22	73.18
<b>Off-Peak (LLH Market Purchase)</b>												
2021											38.35	43.37
2022	47.41	43.86	31.08	19.61	15.61	25.63	31.70	49.07	32.56	35.03	34.87	37.38
2023	38.22	41.72	32.26	23.28	17.02	15.46	37.70	49.57	39.06	32.42	30.12	34.04
2024	33.86	33.51	28.45	23.49	17.74	16.07	40.08	38.00	38.77	30.05	30.25	35.79
2025	32.72	32.86	26.75	21.66	14.46	16.16	30.69	25.77	37.62	26.91	27.47	36.80
2026	32.05	32.83	25.51	20.50	14.79	16.63	19.39	25.95	38.89	27.48	26.28	36.59
2027	32.22	36.07	27.31	21.88	14.53	16.67	21.68	27.08	36.16	28.26	27.36	40.65
2028	38.05	41.25	30.75	25.49	17.76	20.08	26.22	29.15	37.11	32.04	30.52	44.72
2029	41.28	41.80	33.61	26.28	18.53	18.86	29.70	36.58	47.07	35.11	31.01	45.42
2030	42.52	44.21	33.67	26.73	18.86	19.25	29.51	39.05	43.16	36.38	33.10	46.02
2031	42.70	46.10	37.24	28.45	18.21	18.25	32.01	41.59	44.44	37.60	31.59	48.18
2032	42.44	42.41	35.50	27.73	16.81	22.24	33.51	39.53	47.21	39.65	33.78	53.46
2033	46.40	47.59	36.80	26.29	19.31	22.99	34.28	38.07	40.21	39.04	35.62	56.43
2034	46.76	47.80	40.47	28.66	20.14	21.74	34.62	40.41	40.42	38.30	35.15	53.43
2035	48.54	47.99	39.25	27.18	19.35	18.90	34.25	47.38	51.94	41.89	33.10	54.28
2036	47.97	49.82	38.16	27.18	18.91	17.17	36.32	45.30	46.08	40.76	34.83	54.36
2037	49.56	51.21	44.54	33.90	23.41	22.54	37.35	48.95	45.04	42.64	36.98	59.58
2038	51.13	51.61	42.64	28.39	20.30	23.39	38.88	50.38	54.27	45.83	41.06	61.01
2039	44.84	51.25	34.28	13.65	3.35	5.97	28.72	42.72	46.87	40.43	34.52	61.83
2040	47.72	49.35	40.96	18.96	2.40	9.06	31.76	44.56	41.72	46.56	35.59	65.71

**Combined**

2021											42.57	49.97
2022	50.53	46.38	34.25	24.81	22.20	31.65	58.18	79.86	59.88	38.72	35.35	40.79
2023	42.64	41.63	33.23	24.45	21.56	20.36	61.07	73.33	58.94	34.38	29.97	37.12
2024	39.99	37.01	30.94	25.43	23.32	21.88	57.44	52.33	51.07	31.85	31.01	38.64
2025	38.24	35.74	28.50	21.91	17.95	20.86	43.59	31.68	42.02	28.64	29.95	40.60
2026	35.09	34.34	26.19	19.14	14.70	20.10	26.61	33.27	43.36	28.35	29.68	40.00
2027	35.65	36.37	27.59	20.40	14.54	20.85	30.51	37.87	41.99	29.58	30.78	45.61
2028	42.80	42.95	29.57	22.87	17.62	24.61	36.43	39.31	43.26	32.75	35.07	47.93
2029	44.14	42.48	32.34	22.70	17.89	21.65	36.22	53.51	53.45	36.15	33.91	47.64
2030	43.50	44.51	32.79	23.34	16.73	22.03	37.06	50.07	52.24	37.65	34.95	49.46
2031	46.50	47.44	35.23	25.11	15.64	22.55	44.77	56.88	54.30	38.96	34.34	51.80
2032	48.32	43.68	34.10	23.06	14.57	24.68	46.53	54.41	55.28	41.66	37.35	56.73
2033	50.99	48.43	35.33	22.34	15.52	24.26	47.69	53.70	47.47	41.36	39.33	58.04
2034	53.01	49.12	37.28	23.37	15.67	24.66	50.27	55.51	45.98	39.78	39.01	55.71
2035	52.52	49.38	36.01	22.18	13.61	21.33	48.96	74.12	63.07	43.16	36.58	57.22
2036	54.50	50.84	35.50	22.93	11.77	18.47	55.70	65.68	57.51	42.33	37.19	59.18
2037	56.99	52.91	40.19	25.18	13.67	21.64	56.50	69.69	56.32	42.77	38.99	62.70
2038	56.77	53.15	39.03	22.20	11.85	23.56	56.20	69.91	64.00	45.28	41.73	65.08
2039	54.05	53.22	36.93	15.20	3.40	12.84	51.92	66.95	56.26	43.06	40.90	65.26
2040	56.57	52.27	40.52	19.21	5.99	20.38	60.48	65.25	51.94	48.24	43.36	69.97

**Annual Average**

	On-Peak	Off-Peak	Combined
2021	\$50.35	\$40.86	\$46.27
2022	\$51.02	\$33.65	\$43.55
2023	\$45.41	\$32.57	\$39.89
2024	\$41.45	\$30.50	\$36.74
2025	\$34.77	\$27.49	\$31.64
2026	\$31.37	\$26.41	\$29.23
2027	\$33.61	\$27.49	\$30.98
2028	\$37.24	\$31.10	\$34.60
2029	\$39.15	\$33.77	\$36.84
2030	\$39.03	\$34.37	\$37.03
2031	\$42.42	\$35.53	\$39.46
2032	\$42.93	\$36.19	\$40.03
2033	\$42.98	\$36.92	\$40.37
2034	\$43.39	\$37.33	\$40.78
2035	\$46.58	\$38.67	\$43.18
2036	\$46.08	\$38.07	\$42.63
2037	\$47.43	\$41.31	\$44.79
2038	\$48.24	\$42.41	\$45.73
2039	\$47.42	\$34.04	\$41.67
2040	\$50.79	\$36.20	\$44.51

Source 2021-2040: Official Market Price Forecast dated June 2021  
 Blended Market Prices: weights are based on system balancing purchases and sales  
 from GRID run using June 2021 Official Forward Price Curve

**Table 3**  
**Capitalized Energy Costs**

Year	Combined Cycle CT Fixed Costs	Simple Cycle CT Fixed Costs	Capitalized Energy Costs	Capitalized Energy Costs 70.5% CF
	(\$/kW-yr)	(\$/kW-yr)	(\$/kW-yr)	(\$/MWh)
	(a)	(b)	(c) ((a) - (b))	(d) (c)/(8.760 x 70.5%)
2026	\$182.91	\$100.07	\$82.84	\$13.41
2027	\$187.11	\$102.36	\$84.75	\$13.72
2028	\$191.40	\$104.70	\$86.70	\$14.04
2029	\$195.77	\$107.09	\$88.68	\$14.36
2030	\$200.23	\$109.53	\$90.70	\$14.69
2031	\$204.79	\$112.03	\$92.76	\$15.02
2032	\$209.45	\$114.58	\$94.87	\$15.36
2033	\$214.20	\$117.19	\$97.01	\$15.71
2034	\$219.05	\$119.86	\$99.19	\$16.06
2035	\$224.06	\$122.60	\$101.46	\$16.43
2036	\$229.19	\$125.39	\$103.80	\$16.81
2037	\$234.43	\$128.25	\$106.18	\$17.19
2038	\$239.76	\$131.17	\$108.59	\$17.58
2039	\$245.21	\$134.17	\$111.04	\$17.98
2040	\$250.77	\$137.23	\$113.54	\$18.38
2041	\$256.52	\$140.36	\$116.16	\$18.81
2042	\$262.38	\$143.56	\$118.82	\$19.24

Columns

- (a) Table 9, Page 2 of 3 Column (f)
- (b) Table 9, Page 1 of 3 Column (f)
- (c) and (d) Capitalized energy costs reflect the incremental fixed cost of CCCT versus a SCCT

**Table 4**  
**Total Standard Avoided Energy Cost**

Year	Combined Cycle		Capitalized Energy Costs 70.5% CF	Total Standard Avoided Energy Cost
	Gas Price	Energy Cost		
	(\$/MMBtu)	(\$/MWh)	(\$/MWh)	(\$/MWh)
	(a)	(b)	(c)	(d)
		(a) x 6.790		(b) + (c)
2026	\$3.33	\$22.61	\$13.41	\$36.02
2027	\$3.49	\$23.70	\$13.72	\$37.42
2028	\$3.71	\$25.19	\$14.04	\$39.23
2029	\$4.04	\$27.43	\$14.36	\$41.79
2030	\$4.19	\$28.45	\$14.69	\$43.14
2031	\$4.33	\$29.40	\$15.02	\$44.42
2032	\$4.38	\$29.74	\$15.36	\$45.10
2033	\$4.58	\$31.10	\$15.71	\$46.81
2034	\$4.61	\$31.30	\$16.06	\$47.36
2035	\$4.63	\$31.44	\$16.43	\$47.87
2036	\$4.70	\$31.91	\$16.81	\$48.72
2037	\$4.83	\$32.80	\$17.19	\$49.99
2038	\$4.93	\$33.47	\$17.58	\$51.06
2039	\$5.19	\$35.24	\$17.98	\$53.22
2040	\$5.43	\$36.87	\$18.38	\$55.25
2041	\$5.55	\$37.71	\$18.81	\$56.52
2042	\$5.68	\$38.57	\$19.24	\$57.81

Columns

- (a) Table 10
- (b) 6.790 MWh/MMBtu Heat Rate - Table 9. Page 3 of 3
- (c) Table 3 Column (d)

**Table 5**  
**Total Standard Avoided Cost**

Year	Avoided Firm Capacity Costs	Total Standard Avoided Energy Cost	Total Standard Avoided Costs At Stated Capacity Factor		
			75%	85%	90%
	(\$/kW-yr)	(\$/MWh)	(\$/MWh)	(\$/MWh)	(\$/MWh)
	(a)	(b)	(c)	(d)	(e)
			(b)+(a) x1000/(8760 x 0.75)	(b)+(a) x1000/(8760 x 0.85)	(b)+(a) x1000/(8760 x 0.9)
2026	\$100.07	\$36.02	\$51.26	\$49.46	\$48.72
2027	\$102.36	\$37.42	\$53.00	\$51.17	\$50.40
2028	\$104.70	\$39.23	\$55.17	\$53.29	\$52.51
2029	\$107.09	\$41.79	\$58.09	\$56.17	\$55.37
2030	\$109.53	\$43.14	\$59.81	\$57.85	\$57.03
2031	\$112.03	\$44.42	\$61.47	\$59.47	\$58.63
2032	\$114.58	\$45.10	\$62.54	\$60.49	\$59.64
2033	\$117.19	\$46.81	\$64.64	\$62.54	\$61.67
2034	\$119.86	\$47.36	\$65.61	\$63.46	\$62.57
2035	\$122.60	\$47.87	\$66.53	\$64.33	\$63.42
2036	\$125.39	\$48.72	\$67.81	\$65.56	\$64.62
2037	\$128.25	\$49.99	\$69.51	\$67.21	\$66.26
2038	\$131.17	\$51.06	\$71.02	\$68.67	\$67.70
2039	\$134.17	\$53.22	\$73.64	\$71.24	\$70.24
2040	\$137.23	\$55.25	\$76.14	\$73.68	\$72.66
2041	\$140.36	\$56.52	\$77.88	\$75.37	\$74.32
2042	\$143.56	\$57.81	\$79.66	\$77.09	\$76.02

Columns

- (a) Table 3 Column (a) minus Column (c)
- (b) Table 4 Column (d)



**Table 6**  
**On- & Off- Peak Energy Prices**

Year	Avoided Firm Capacity Costs	Capacity Cost Allocated to On-Peak Hours	Total Standard Avoided Energy Cost	On-Peak 4,910 Hours	Off-Peak 3,850 Hours
	(\$/kW-yr)	(\$/MWh)	(\$/MWh)	(\$/MWh)	(\$/MWh)
	(a)	(b)	(c)	(d)	(e)
		(a) *1000 / (100.0% x 8760 x 56%)		(b) + (c)	(c)
2026	\$100.07	\$20.38	\$36.02	\$56.41	\$36.02
2027	\$102.36	\$20.85	\$37.42	\$58.27	\$37.42
2028	\$104.70	\$21.32	\$39.23	\$60.55	\$39.23
2029	\$107.09	\$21.81	\$41.79	\$63.60	\$41.79
2030	\$109.53	\$22.31	\$43.14	\$65.44	\$43.14
2031	\$112.03	\$22.82	\$44.42	\$67.24	\$44.42
2032	\$114.58	\$23.34	\$45.10	\$68.44	\$45.10
2033	\$117.19	\$23.87	\$46.81	\$70.67	\$46.81
2034	\$119.86	\$24.41	\$47.36	\$71.78	\$47.36
2035	\$122.60	\$24.97	\$47.87	\$72.84	\$47.87
2036	\$125.39	\$25.54	\$48.72	\$74.26	\$48.72
2037	\$128.25	\$26.12	\$49.99	\$76.11	\$49.99
2038	\$131.17	\$26.72	\$51.06	\$77.77	\$51.06
2039	\$134.17	\$27.33	\$53.22	\$80.55	\$53.22
2040	\$137.23	\$27.95	\$55.25	\$83.20	\$55.25
2041	\$140.36	\$28.59	\$56.52	\$85.11	\$56.52
2042	\$143.56	\$29.24	\$57.81	\$87.05	\$57.81

Columns

- (a) Table 3 Column (a) minus Column (c)
- (b) Table 9. 100.0% is the on-peak capacity factor of the Proxy CCCT Resource
- (d) 56% is the percent of all hours that are on-peak
- (c) Table 4 Column (d)

**Table 3 (Renewable)  
Capitalized Energy Costs**

Year	Combined Cycle CT Fixed Costs	Simple Cycle CT Fixed Costs	Capitalized Energy Costs	Capitalized Energy Costs 70.5% CF
	(\$/kW-yr)	(\$/kW-yr)	(\$/kW-yr)	(\$/MWh)
	(a)	(b)	(c)	(d)
			((a) - (b))	(c)/(8.760 x 70.5%)
2021	\$163.46	\$89.42	\$74.04	\$11.99
2022	\$167.19	\$91.45	\$75.74	\$12.26
2023	\$171.00	\$93.53	\$77.47	\$12.54
2024	\$174.89	\$95.66	\$79.23	\$12.83
2025	\$178.86	\$97.84	\$81.02	\$13.12
2026	\$182.91	\$100.07	\$82.84	\$13.41
2027	\$187.11	\$102.36	\$84.75	\$13.72
2028	\$191.40	\$104.70	\$86.70	\$14.04
2029	\$195.77	\$107.09	\$88.68	\$14.36
2030	\$200.23	\$109.53	\$90.70	\$14.69
2031	\$204.79	\$112.03	\$92.76	\$15.02
2032	\$209.45	\$114.58	\$94.87	\$15.36
2033	\$214.20	\$117.19	\$97.01	\$15.71
2034	\$219.05	\$119.86	\$99.19	\$16.06
2035	\$224.06	\$122.60	\$101.46	\$16.43
2036	\$229.19	\$125.39	\$103.80	\$16.81
2037	\$234.43	\$128.25	\$106.18	\$17.19
2038	\$239.76	\$131.17	\$108.59	\$17.58
2039	\$245.21	\$134.17	\$111.04	\$17.98
2040	\$250.77	\$137.23	\$113.54	\$18.38
2041	\$256.52	\$140.36	\$116.16	\$18.81
2042	\$262.38	\$143.56	\$118.82	\$19.24

**Table 4 (Renewable)  
Avoided Capacity Costs**

Year	Avoided Firm Capacity Costs
	(\$/kW-yr)
	(a)
2021	\$89.42
2022	\$91.45
2023	\$93.53
2024	\$95.66
2025	\$97.84
2026	\$100.07
2027	\$102.36
2028	\$104.70
2029	\$107.09
2030	\$109.53
2031	\$112.03
2032	\$114.58
2033	\$117.19
2034	\$119.86
2035	\$122.60
2036	\$125.39
2037	\$128.25
2038	\$131.17
2039	\$134.17
2040	\$137.23
2041	\$140.36
2042	\$143.56

Columns

- (a) Table 9, Page 2 of 3 Column (f)
- (b) Table 9, Page 1 of 3 Column (f)
- (c) and (d) Capitalized energy costs reflect the incremental fixed cost of CCCT versus a SCCT

Columns

- (a) Table 3 (Renewable) Column (a) minus Column (c)

**Table 7**  
**Comparison between Proposed and Current Standard Fixed Avoided Costs**  
**\$/MWh**

Year	Proposed	Eff. 8/26/20	Difference	Proposed	Eff. 8/26/20	Difference	Proposed	Eff. 8/26/20	Difference	Proposed	Eff. 8/26/20	Difference
	Standard	Standard	Standard	Standard	Standard	Standard	Standard	Standard	Standard	Standard	Standard	Standard
	Base Load QF	Base Load QF	Base Load QF	Wind QF (2)	Wind QF (2)	Wind QF (2)	Fixed Solar QF	Fixed Solar QF	Fixed Solar QF	Tracking Solar QF	Tracking Solar QF	Tracking Solar QF
2022	\$43.39	\$27.60	\$15.79	\$43.15	\$27.34	\$15.81	\$48.03	\$29.88	\$18.16	\$47.71	\$29.71	\$18.00
2023	\$39.77	\$28.02	\$11.74	\$39.50	\$27.75	\$11.75	\$43.13	\$30.60	\$12.53	\$42.89	\$30.41	\$12.47
2024	\$36.64	\$28.83	\$7.80	\$36.31	\$28.50	\$7.81	\$39.42	\$31.36	\$8.06	\$39.21	\$31.17	\$8.04
2025	\$31.57	\$29.39	\$2.18	\$30.97	\$28.80	\$2.17	\$33.11	\$31.89	\$1.22	\$32.97	\$31.69	\$1.28
2026	\$47.45	\$42.49	\$4.96	\$52.39	\$47.44	\$4.96	\$40.72	\$35.77	\$4.96	\$41.43	\$36.47	\$4.96
2027	\$49.10	\$44.42	\$4.69	\$53.93	\$49.25	\$4.69	\$42.04	\$37.36	\$4.69	\$42.76	\$38.08	\$4.69
2028	\$51.18	\$46.70	\$4.48	\$55.90	\$51.42	\$4.48	\$43.77	\$39.29	\$4.48	\$44.51	\$40.03	\$4.48
2029	\$54.02	\$48.99	\$5.02	\$58.50	\$53.48	\$5.02	\$46.17	\$41.14	\$5.02	\$46.92	\$41.89	\$5.02
2030	\$55.64	\$51.29	\$4.35	\$59.94	\$55.59	\$4.35	\$47.37	\$43.03	\$4.35	\$48.14	\$43.80	\$4.35
2031	\$57.21	\$53.07	\$4.14	\$61.62	\$57.48	\$4.14	\$48.78	\$44.63	\$4.14	\$49.56	\$45.42	\$4.14
2032	\$58.18	\$54.85	\$3.33	\$62.62	\$59.29	\$3.33	\$49.49	\$46.16	\$3.33	\$50.29	\$46.96	\$3.33
2033	\$60.18	\$56.65	\$3.53	\$64.71	\$61.18	\$3.53	\$51.29	\$47.76	\$3.53	\$52.11	\$48.58	\$3.53
2034	\$61.05	\$58.80	\$2.24	\$65.76	\$63.52	\$2.24	\$52.01	\$49.77	\$2.24	\$52.86	\$50.61	\$2.24
2035	\$61.86	\$60.91	\$0.95	\$66.75	\$65.80	\$0.95	\$52.68	\$51.73	\$0.95	\$53.54	\$52.59	\$0.95
2036	\$63.03	\$62.76	\$0.27	\$68.22	\$67.94	\$0.27	\$53.79	\$53.52	\$0.27	\$54.67	\$54.40	\$0.27
2037	\$64.63	\$65.72	(\$1.09)	\$69.92	\$71.01	(\$1.09)	\$55.17	\$56.26	(\$1.09)	\$56.07	\$57.16	(\$1.09)
2038	\$66.03	\$68.14	(\$2.10)	\$71.44	\$73.55	(\$2.10)	\$56.36	\$58.47	(\$2.10)	\$57.28	\$59.39	(\$2.10)
2039	\$68.54	\$71.18		\$74.07	\$76.72		\$58.65	\$61.29		\$59.59	\$62.24	
2040	\$70.92	\$72.69		\$76.58	\$78.34		\$60.81	\$62.57		\$61.77	\$63.53	

15 Year Nominal Levelized Price (\$/MWh) at 6.920% Discount Rate (1)

2022 - 2036	\$48.89	\$42.92	\$5.97	\$51.70	\$45.73	\$5.97	\$44.98	\$38.75	\$6.22	\$45.38	\$39.17	\$6.21
2023 - 2037	\$50.12	\$45.51	\$4.61	\$53.36	\$48.75	\$4.61	\$45.05	\$40.42	\$4.63	\$45.55	\$40.93	\$4.63

- Notes: (1) Discount Rate - 2019 IRP. Levelized values are for informational purposes only.  
(2) Avoided cost prices have been reduced by a wind and solar integration charges for QFs located in PacifiCorp's Balancing Area Authority (BAA) (in-system) .  
If the QF resource is not in PacifiCorp's BAA, prices will be increased by the applicable integration charges

**Table 8**  
**Comparison between Proposed and Current Renewable Standard Fixed Avoided Costs**  
**\$/MWh**

Year	Proposed	Eff. 8/26/20	Difference	Proposed	Eff. 8/26/20	Difference	Proposed	Eff. 8/26/20	Difference	Proposed	Eff. 8/26/20	Difference
	Renewable Standard	Renewable Standard	Renewable Standard	Renewable Standard	Renewable Standard	Renewable Standard	Renewable Standard	Renewable Standard	Renewable Standard	Renewable Standard	Renewable Standard	Renewable Standard
	Base Load QF	Base Load QF	Base Load QF	Wind QF (2)	Wind QF (2)	Wind QF (2)	Fixed Solar QF	Fixed Solar QF	Fixed Solar QF	Tracking Solar QF	Tracking Solar QF	Tracking Solar QF
2022	\$43.39	\$27.60	\$15.79	\$43.15	\$27.34	\$15.81	\$48.03	\$29.88	\$18.16	\$47.71	\$29.71	\$18.00
2023	\$39.77	\$28.02	\$11.74	\$39.50	\$27.75	\$11.75	\$43.13	\$30.60	\$12.53	\$42.89	\$30.41	\$12.47
2024	\$30.77	\$30.74	\$0.04	\$32.90	\$32.87	\$0.03	\$21.37	\$21.87	(\$0.50)	\$22.89	\$23.35	(\$0.46)
2025	\$31.72	\$31.72	\$0.00	\$33.65	\$33.65	(\$0.00)	\$21.58	\$22.48	(\$0.90)	\$23.15	\$23.99	(\$0.84)
2026	\$32.28	\$32.26	\$0.02	\$34.43	\$34.41	\$0.02	\$21.97	\$23.07	(\$1.10)	\$23.58	\$24.61	(\$1.03)
2027	\$33.26	\$33.23	\$0.02	\$35.22	\$35.21	\$0.02	\$22.66	\$23.78	(\$1.12)	\$24.29	\$25.34	(\$1.04)
2028	\$34.24	\$34.24	\$0.00	\$36.02	\$36.03	(\$0.01)	\$22.95	\$24.23	(\$1.28)	\$24.65	\$25.84	(\$1.20)
2029	\$35.34	\$35.32	\$0.02	\$36.82	\$36.81	\$0.01	\$23.56	\$24.89	(\$1.33)	\$25.29	\$26.53	(\$1.24)
2030	\$36.44	\$36.38	\$0.06	\$37.67	\$37.62	\$0.05	\$24.14	\$25.57	(\$1.42)	\$25.91	\$27.24	(\$1.33)
2031	\$37.26	\$37.24	\$0.02	\$38.54	\$38.53	\$0.01	\$24.99	\$26.18	(\$1.19)	\$26.78	\$27.89	(\$1.11)
2032	\$38.18	\$38.17	\$0.01	\$39.41	\$39.41	\$0.00	\$25.58	\$26.56	(\$0.98)	\$27.41	\$28.33	(\$0.92)
2033	\$39.07	\$39.06	\$0.01	\$40.32	\$40.32	\$0.00	\$26.18	\$27.01	(\$0.83)	\$28.05	\$28.82	(\$0.78)
2034	\$39.89	\$39.89	(\$0.01)	\$41.25	\$41.26	(\$0.01)	\$26.68	\$27.48	(\$0.80)	\$28.60	\$29.34	(\$0.75)
2035	\$40.71	\$40.69	\$0.02	\$42.17	\$42.16	\$0.01	\$27.55	\$27.95	(\$0.40)	\$29.49	\$29.86	(\$0.37)
2036	\$41.47	\$41.44	\$0.03	\$43.14	\$43.12	\$0.02	\$28.18	\$28.57	(\$0.39)	\$30.17	\$30.53	(\$0.36)
2037	\$42.40	\$42.39	\$0.01	\$44.11	\$44.10	\$0.01	\$28.64	\$29.16	(\$0.52)	\$30.68	\$31.17	(\$0.49)
2038	\$43.38	\$43.37	\$0.01	\$45.12	\$45.11	\$0.01	\$29.43	\$29.77	(\$0.35)	\$31.51	\$31.83	(\$0.32)
2039	\$44.37	\$44.37	\$0.00	\$46.16	\$46.15	\$0.01	\$30.15	\$30.47	(\$0.32)	\$32.27	\$32.58	(\$0.31)
2040	\$45.44	\$45.40	\$0.04	\$47.26	\$47.23	\$0.03	\$30.98	\$31.23	(\$0.25)	\$33.15	\$33.38	(\$0.23)

15 Year Nominal Levelized Price (\$/MWh) at 6.920% Discount Rate (1)

Disc

\$/MWh	\$36.60	\$33.84	\$2.75	\$37.89	\$35.14	\$2.75	\$28.18	\$25.91	\$2.28	\$29.51	\$27.20	\$2.31
\$/MWh	\$36.09	\$34.87	\$1.22	\$37.56	\$36.35	\$1.21	\$26.03	\$25.60	\$0.43	\$27.57	\$27.09	\$0.48

- Notes: (1) Discount Rate - 2019 IRP. Levelized values are for informational purposes only.  
(2) Avoided cost prices have been reduced by a wind and solar integration charges for QFs located in PacifiCorp's Balancing Area Authority (BAA) (in-system).  
If the QF resource is not in PacifiCorp's BAA, prices will be increased by the applicable integration charges

**Table 9  
Total Cost of Displaceable Resources**

Year	Estimated Capital Cost \$/kW	Fixed Capital Cost at Real Levelized Rate \$/kW-yr	Fixed O&M \$/kW-yr	Variable O&M \$/MWh	Total O&M at Expected CF \$/kW-yr	Total Resource Fixed Costs \$/kW-yr
	(a)	(b)	(c)	(d)	(e)	(f)

**185 MW - SCCT Frame "F" x1 - Naughton Resource (6,500')**

2018	\$745	\$51.85	\$31.72	\$6.96	\$31.72	\$83.57
2019		\$53.03	\$32.44	\$7.12	\$32.44	\$85.47
2020		\$54.24	\$33.18	\$7.28	\$33.18	\$87.42
2021		\$55.48	\$33.94	\$7.45	\$33.94	\$89.42
2022		\$56.74	\$34.71	\$7.62	\$34.71	\$91.45
2023		\$58.03	\$35.50	\$7.79	\$35.50	\$93.53
2024		\$59.35	\$36.31	\$7.97	\$36.31	\$95.66
2025		\$60.70	\$37.14	\$8.15	\$37.14	\$97.84
2026		\$62.08	\$37.99	\$8.34	\$37.99	\$100.07
2027		\$63.50	\$38.86	\$8.53	\$38.86	\$102.36
2028		\$64.95	\$39.75	\$8.72	\$39.75	\$104.70
2029		\$66.43	\$40.66	\$8.92	\$40.66	\$107.09
2030		\$67.94	\$41.59	\$9.12	\$41.59	\$109.53
2031		\$69.49	\$42.54	\$9.33	\$42.54	\$112.03
2032		\$71.07	\$43.51	\$9.54	\$43.51	\$114.58
2033		\$72.69	\$44.50	\$9.76	\$44.50	\$117.19
2034		\$74.35	\$45.51	\$9.98	\$45.51	\$119.86
2035		\$76.05	\$46.55	\$10.21	\$46.55	\$122.60
2036		\$77.78	\$47.61	\$10.44	\$47.61	\$125.39
2037		\$79.55	\$48.70	\$10.68	\$48.70	\$128.25
2038		\$81.36	\$49.81	\$10.92	\$49.81	\$131.17
2039		\$83.22	\$50.95	\$11.17	\$50.95	\$134.17
2040		\$85.12	\$52.11	\$11.42	\$52.11	\$137.23
2041		\$87.06	\$53.30	\$11.68	\$53.30	\$140.36
2042		\$89.04	\$54.52	\$11.95	\$54.52	\$143.56

Source: (a)(c)(d) Plant Costs - 2019 IRP - Table 6.1 & 6.2  
 (b) = (a) x 6.959%  
 (e) = (d) x (8.76 x %) + (c)  
 (f) = (b) + (e)

**185 MW - SCCT Frame "F" x1 - Naughton Resource (6,500')**

2018 \$	\$745	Plant capacity cost	\$/kW
2018 \$	\$16.81	Fixed O&M & Capitalized O&M	\$/kW-yr
2018 \$	<u>\$14.90</u>	Fixed Pipeline	\$/kW-yr
2018 \$	\$31.72	Fixed O&M Including Fixed Pipeline & Capitalized O&M (\$	\$/kW-yr
2018 \$	\$6.96	Variable O&M and Other Costs	\$/MWh
	6.959%	Payment Factor	
	0%	Capacity Factor	
	2.28%	Cost Escalation Forecast (2019 IRP, Chapter 6, pg. 130)	

**Table 9  
Total Cost of Displaceable Resources**

Year	Estimated Capital Cost \$/kW	Fixed Capital Cost at Real Levelized Rate \$/kW-yr	Fixed O&M \$/kW-yr	Variable O&M \$/MWh	Total O&M at Expected CF \$/kW-yr	Total Resource Fixed Costs \$/kW-yr	Fuel Cost \$/MMBtu	IRP Resource Energy Cost \$/MWh	Total Avoided Costs \$/MWh
	(a)	(b)	(c)	(d)	(e)	(f)	(g)	(h)	(i)

**447 MW - CCCT Dry "G/H", 1x1 - West Side Resource (1,500')**

2018	\$1,429	\$97.03	\$43.22	\$2.02	\$55.70	\$152.73			
2019		\$99.24	\$44.21	\$2.07	\$56.99	\$156.23			
2020		\$101.50	\$45.22	\$2.12	\$58.31	\$159.81			
2021		\$103.81	\$46.25	\$2.17	\$59.65	\$163.46			
2022		\$106.18	\$47.30	\$2.22	\$61.01	\$167.19			
2023		\$108.60	\$48.38	\$2.27	\$62.40	\$171.00			
2024		\$111.08	\$49.48	\$2.32	\$63.81	\$174.89			
2025		\$113.61	\$50.61	\$2.37	\$65.25	\$178.86			
2026		\$116.20	\$51.76	\$2.42	\$66.71	\$182.91	\$3.33	\$22.61	\$52.23
2027		\$118.85	\$52.94	\$2.48	\$68.26	\$187.11	\$3.49	\$23.70	\$54.00
2028		\$121.56	\$54.15	\$2.54	\$69.84	\$191.40	\$3.71	\$25.19	\$56.18
2029		\$124.33	\$55.38	\$2.60	\$71.44	\$195.77	\$4.04	\$27.43	\$59.13
2030		\$127.16	\$56.64	\$2.66	\$73.07	\$200.23	\$4.19	\$28.45	\$60.87
2031		\$130.06	\$57.93	\$2.72	\$74.73	\$204.79	\$4.33	\$29.40	\$62.56
2032		\$133.03	\$59.25	\$2.78	\$76.42	\$209.45	\$4.38	\$29.74	\$63.65
2033		\$136.06	\$60.60	\$2.84	\$78.14	\$214.20	\$4.58	\$31.10	\$65.78
2034		\$139.16	\$61.98	\$2.90	\$79.89	\$219.05	\$4.61	\$31.30	\$66.77
2035		\$142.33	\$63.39	\$2.97	\$81.73	\$224.06	\$4.63	\$31.44	\$67.72
2036		\$145.58	\$64.84	\$3.04	\$83.61	\$229.19	\$4.70	\$31.91	\$69.02
2037		\$148.90	\$66.32	\$3.11	\$85.53	\$234.43	\$4.83	\$32.80	\$70.76
2038		\$152.29	\$67.83	\$3.18	\$87.47	\$239.76	\$4.93	\$33.47	\$72.29
2039		\$155.76	\$69.38	\$3.25	\$89.45	\$245.21	\$5.19	\$35.24	\$74.94
2040		\$159.31	\$70.96	\$3.32	\$91.46	\$250.77	\$5.43	\$36.87	\$77.48
2041		\$162.94	\$72.58	\$3.40	\$93.58	\$256.52	\$5.55	\$37.71	\$79.25
2042		\$166.66	\$74.23	\$3.48	\$95.72	\$262.38	\$5.68	\$38.57	\$81.06

**Table 9  
Total Cost of Displaceable Resources**

**Sources, Inputs and Assumptions**

- Source: (a)(c)(d) Plant Costs - 2019 IRP - Table 6.1 & 6.2  
 (b) = (a) x 6.790%  
 (e) = (d) x (8.76 x 70.5%) + (c)  
 (f) = (b) + (e)  
 (g) Gas Price Forecast  
 (h) = 6790 x (g) / 1000  
 (i) = (f) / (8.76 x 'Capacity Factor') + (h)

**447 MW - CCCT Dry "G/H", 1x1 - West Side Resource (1,500')**

CCCT Statistics	MW	Percent	Cap Cost	Fixed
CCCT (Dry "G/H" 1x1)	396	88.6%	\$1,552	\$45.08
CCCT Duct Firing (Dry "G/H" 1x1)	<u>51</u>	<u>11.4%</u>	<u>\$478</u>	<u>\$28.76</u>
Capacity Weighted	447	100.0%	\$1,429	\$43.22

CCCT Statistics	MW	CF	aMW	Percent	Variable	Heat Rate
CCCT (Dry "G/H" 1x1)	396	78.0%	309	98.1%	\$2.05	6,788
CCCT Duct Firing (Dry "G/H" 1x1)	<u>51</u>	<u>12.0%</u>	<u>6</u>	<u>1.9%</u>	<u>\$0.15</u>	<u>6,788</u>
Energy Weighted	447	70.5%	315	100.0%	\$2.02	6,790

Rounded

- Source: Plant Costs - 2019 IRP - Table 6.1 & 6.2. 2018\$  
 \$21.72 \$5.39 Fixed O&M & Capitalized O&M  
 \$23.37 \$23.37 Fixed Pipeline

- 6.790% Payment Factor  
 100.0% Capacity Factor - On-peak 70.5% / 56.0% (percent of hours on-peak)  
 2.28% Cost Escalation Forecast (2019 IRP, Chapter 6, pg. 130)

**Table 10**  
**Gas Price Forecast**  
**\$/MMBtu**

Year	Burner tip West Side Gas Fuel Cost
2021	\$3.60
2022	\$3.29
2023	\$2.86
2024	\$2.88
2025	\$3.16
2026	\$3.33
2027	\$3.49
2028	\$3.71
2029	\$4.04
2030	\$4.19
2031	\$4.33
2032	\$4.38
2033	\$4.58
2034	\$4.61
2035	\$4.63
2036	\$4.70
2037	\$4.83
2038	\$4.93
2039	\$5.19
2040	\$5.43
2041	\$5.55
2042	\$5.68

**Source**

2021-2040: Official Market Price Forecast dated June 2021

2041+: Escalated at Inflation

2.28% Inflation: 2019 IRP Volume I. Chapter 7. Pg. 179.



**Table 11  
Integration Cost**

Year	Wind Integration Cost	Solar Integration Cost
	\$/MWh	\$/MWh

2018	\$0.50	\$0.41
2019	\$0.30	\$0.25
2020	\$0.39	\$0.31
2021	\$0.19	\$0.15
2022	\$0.27	\$0.22
2023	\$0.29	\$0.24
2024	\$0.35	\$0.29
2025	\$0.61	\$0.50
2026	\$0.45	\$0.37
2027	\$0.69	\$0.56
2028	\$0.93	\$0.76
2029	\$1.29	\$1.05
2030	\$1.61	\$1.31
2031	\$1.63	\$1.32
2032	\$1.74	\$1.42
2033	\$1.79	\$1.45
2034	\$1.75	\$1.42
2035	\$1.72	\$1.40
2036	\$1.58	\$1.28
2037	\$1.62	\$1.31
2038	\$1.66	\$1.34
2039	\$1.70	\$1.37
2040	\$1.74	\$1.40
2041	\$1.78	\$1.43
2042	\$1.82	\$1.46

Source: 2018-2036 2019 IRP Volume II. Appendix F. Figure F.15.  
 2037+ Escalated at Inflation  
 2.28% Inflation: 2019 IRP Volume I. Chapter 7. Pg. 179.

**Table 12**  
**2019 IRP WY Wind Resource-2024**  
**44% Capacity Factor**

Year	Estimated Capital Cost	Fixed Capital Cost at Real Levelized Rate	Fixed O&M	Fixed Costs	Variable O&M	Tax Credit	Avoided Cost (excluding Integration Cost)	Total Resource Costs	Integration Cost
	\$/kW	\$/kW-yr	\$/kW-yr	\$/MWh	\$/MWh	\$/MWh	\$/MWh	\$/kW-yr	\$/MWh
	(a)	(b)	(c)	(d)	(e)	(f)	(g)	(h)	(h)

**2019 IRP WY Wind Resource-2024 - 44% Capacity Factor**

2018	\$1,301		\$27.99		\$0.65	(\$9.33)			\$0.50
2019	\$1,294		\$28.63		\$0.66	(\$9.54)			\$0.30
2020	\$1,287		\$29.28		\$0.68	(\$9.76)			\$0.39
2021	\$1,280		\$29.95		\$0.70	(\$9.98)			\$0.19
2022	\$1,271		\$30.63		\$0.71	(\$10.21)			\$0.27
2023	\$1,261		\$31.33		\$0.73	(\$10.44)			\$0.29
2024	\$1,252	\$86.40	\$32.04	\$31.01	\$0.74	(\$10.68)	\$21.07	\$80.48	\$0.35
2025		\$88.37	\$32.77	\$31.72	\$0.76	(\$10.92)	\$21.56	\$82.34	\$0.61
2026		\$90.38	\$33.52	\$32.44	\$0.78	(\$11.17)	\$22.05	\$84.22	\$0.45
2027		\$92.44	\$34.29	\$33.18	\$0.80	(\$11.43)	\$22.55	\$86.13	\$0.69
2028		\$94.55	\$35.07	\$33.94	\$0.81	(\$11.69)	\$23.06	\$88.07	\$0.93
2029		\$96.71	\$35.87	\$34.71	\$0.83	(\$11.96)	\$23.58	\$90.07	\$1.29
2030		\$98.91	\$36.69	\$35.50	\$0.85	(\$12.23)	\$24.12	\$92.14	\$1.61
2031		\$101.17	\$37.52	\$36.31	\$0.87	(\$12.51)	\$24.67	\$94.23	\$1.63
2032		\$103.48	\$38.38	\$37.14	\$0.89	(\$12.79)	\$25.24	\$96.41	\$1.74
2033		\$105.84	\$39.25	\$37.99	\$0.91	(\$13.08)	\$25.82	\$98.61	\$1.79
2034		\$108.25	\$40.15	\$38.85	\$0.93	(\$13.38)	\$26.40	\$100.85	\$1.75
2035		\$110.72	\$41.06	\$39.74	\$0.95	(\$13.69)	\$27.00	\$103.12	\$1.72
2036		\$113.24	\$42.00	\$40.65	\$0.98	(\$14.00)	\$27.63	\$105.51	\$1.58
2037		\$115.82	\$42.96	\$41.57	\$1.00	(\$14.32)	\$28.25	\$107.91	\$1.62
2038		\$118.46	\$43.94	\$42.52	\$1.02	(\$14.65)	\$28.89	\$110.34	\$1.66
2039		\$121.16	\$44.94	\$43.49	\$1.04	(\$14.98)	\$29.55	\$112.86	\$1.70
2040		\$123.92	\$45.96	\$44.48	\$1.07	(\$15.32)	\$30.23	\$115.45	\$1.74
2041		\$126.75	\$47.01	\$45.49	\$1.09	(\$15.67)	\$30.91	\$118.07	\$1.78
2042		\$129.64	\$48.08	\$46.53	\$1.12	(\$16.03)	\$31.62	\$120.77	\$1.82

**Sources, Inputs and Assumption:**

Source:	(c)(f)	Supply-side Resource Table
	(a)	Plant capacity cost, with resource-specific escalation
	(b)	= (a) x 6.899%
	(d)	= ((b) + (c)) / (8.76 x 43.6%)
	(g)	= (d) + (f)
	(h)	Table 11

**2019 IRP WY Wind Resource-2024 - 44% Capacity Factor**  
**Wind Cost and Input Assumptions**

2018 \$	\$1,301	Plant capacity cost	\$/kW-yr
2018 \$	\$27.99	Fixed O&M, plus on-going capital cost	\$/kW-yr
2018 \$	\$0.65	Variable O&M	\$/MWh
2018 \$	(\$9.33)	Tax Credit \$/MWh	\$/MWh (60% PTC)
	14.5%	Capacity Contribution	
	6.899%	Payment Factor	
	43.6%	Capacity Factor	
	2.28%	Inflation: 2019 IRP Volume I, Chapter 7, Pg. 179.	

**2019 IRP Wind Capital Cost Escalation**

2019	-0.6%	2028	-0.7%	2037	0.5%
2020	-0.6%	2029	-0.7%	2038	0.5%
2021	-0.5%	2030	-0.7%	2039	0.5%
2022	-0.7%	2031	0.5%	2040	0.5%
2023	-0.7%	2032	0.5%	2041	0.5%
2024	-0.7%	2033	0.5%	2042	0.5%
2025	-0.7%	2034	0.5%	2043	0.5%
2026	-0.7%	2035	0.5%	2044	0.5%
2027	-0.7%	2036	0.5%	2045	0.5%

**Table 13**  
**2019 IRP Wind Resource**  
**Adjusted to On-Peak / Off-Peak Prices**

Year	Renewable Avoided Resource Cost	On-Peak / Off-Peak Factors		On-Peak Renewable Avoided Resource Cost	Off-Peak Renewable Avoided Resource Cost
	\$/MWH	On-Peak	Off-Peak	On-Peak	Off-Peak
	(a)	(b)	(c)	(d) (a) x (b)	(e) (a) x (c)
2024	\$21.07	1.1298	0.8351	\$23.81	\$17.60
2025	\$21.56	1.1055	0.8663	\$23.83	\$18.67
2026	\$22.05	1.1005	0.8731	\$24.27	\$19.25
2027	\$22.55	1.1099	0.8621	\$25.03	\$19.44
2028	\$23.06	1.0930	0.8842	\$25.20	\$20.39
2029	\$23.58	1.0946	0.8801	\$25.81	\$20.76
2030	\$24.12	1.0937	0.8820	\$26.38	\$21.28
2031	\$24.67	1.1120	0.8589	\$27.44	\$21.19
2032	\$25.24	1.1127	0.8573	\$28.09	\$21.64
2033	\$25.82	1.1128	0.8580	\$28.73	\$22.15
2034	\$26.40	1.1082	0.8648	\$29.26	\$22.83
2035	\$27.00	1.1252	0.8417	\$30.38	\$22.73
2036	\$27.63	1.1265	0.8401	\$31.12	\$23.21
2037	\$28.25	1.1165	0.8522	\$31.54	\$24.08
2038	\$28.89	1.1237	0.8438	\$32.46	\$24.38
2039	\$29.55	1.1259	0.8414	\$33.27	\$24.86
2040	\$30.23	1.1320	0.8371	\$34.22	\$25.30
2041	\$30.91	1.1268	0.8379	\$34.83	\$25.90
2042	\$31.62	1.1427	0.8201	\$36.13	\$25.93

Columns

- (a) Table 12 Column (g)
- (b) Ratio blended market On-Peak to annual prices
- (c) Ratio blended market Off-Peak to annual prices

**Table 14  
2019 IRP Capacity Contribution Values**

	Capacity Factor (%)	Capacity Contribution (%)	
	Annual	Summer	Winter
<b>Tracking Solar</b>			
<b>Idaho Falls, ID</b>	28%	12%	13%
<b>Lakeview, OR</b>	29%	15%	14%
<b>Milford, UT</b>	32%	10%	23%
<b>Yakima, WA</b>	25%	12%	10%
<b>Rock Springs, WY</b>	30%	11%	19%
<b>Wind</b>			
<b>Pocatello, ID</b>	37%	19%	27%
<b>Arlington, OR</b>	37%	57%	21%
<b>Monticello, UT</b>	29%	18%	22%
<b>Goldendale, WA</b>	37%	57%	21%
<b>Medicine Bow, WY</b>	44%	13%	35%

Source: 2019 IRP, Table N.4 – Final CF Method Capacity Contribution Values for Wind, Solar, and Storage

<b>Fixed Tilt Solar</b>			
<b>Oregon</b>	25%	11%	14%

Source: 2019 IRP, Final CF Method inputs applied to OR Fixed-Tilt Solar Profile

<b>Seasonal Contribution Weighting</b>	92%	8%
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Source: 2019 IRP, Appendix N workpapers

**PACIFIC POWER**  
**AVOIDED COST CALCULATION**

**STANDARD RATES FOR AVOIDED COST PURCHASES FROM**  
**ELIGIBLE QUALIFYING FACILITIES**

**OREGON – OCTOBER 2021**

**PACIFIC POWER  
AVOIDED COST CALCULATION**

**STANDARD RATES FOR AVOIDED COST PURCHASES FROM ELIGIBLE  
QUALIFYING FACILITIES**

**OREGON – SEPTEMBER 2021**

Standard avoided cost rates are paid to eligible small qualifying facilities (QFs). Oregon avoided cost filing requirements as listed in OAR 860-029-0040 and 860-029-0080 require the Company to file updated avoided costs at least every two years. The Commission Order No. 14-058 requires the Oregon investor owned utilities to update avoided cost prices annually on May 1 of each year and within 30-days of Integrated Resource Plan (IRP) acknowledgment. Annual updates, filed on May 1 of each year, are required to update the following data inputs: (1) natural gas prices; (2) on-peak and off-peak forward looking electricity market prices; (3) production tax credit status; and (4) any other action or change in an acknowledged IRP relevant to the calculation of avoided costs. The Company’s annual update to standard avoided cost rates for 2021 was moved to October 1, 2021 by Commission Order No. 21-120.

The last Oregon avoided costs were approved on August 26, 2020. This filing incorporates annual updates to forecasted prices for natural gas and electricity.

**Sufficiency and Deficiency Periods**

In Docket UM-1396 Order 10-488, the Commission directed that the start date of the first “major resource acquisition” in the action plan of the IRP determines the resource “sufficiency” and “deficiency” periods to be used in calculations of standard avoided cost prices. The sufficiency and deficiency periods used in this filing are based on the 2019 IRP which was acknowledged by the Commission on May 7, 2020.

**Table 1** presents the 2019 IRP Preferred Portfolio and shows that the earliest acquisition of a major non-renewable resource is a Simple Cycle Combustion Turbine (SCCT) in 2026. Therefore, the resource sufficiency period for the standard avoided cost rates is from 2021-2025 and the non-renewable resource deficiency period starts in 2026. Table 1 also shows that earliest acquisition of a utility-scale renewable resource that will provide renewable energy credits (RECs) for compliance with Oregon’s renewable portfolio standard (RPS) is in 2024, and therefore the start of the renewable resource deficiency period is 2024.<sup>1</sup>

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<sup>1</sup> The 2019 IRP preferred portfolio includes a “Customer Preference” requirement for new renewable resources that have RECs assigned to individual customers to meet their own resource preference requirements. All proxy renewable resources added in 2021-2023 in the 2019 IRP preferred portfolio are for customer preference requirements, so they will not generate RECs that can be used for compliance with

## Avoided Cost Calculation

Based on the 2019 IRP preferred portfolio shown in **Table 1**, the standard avoided cost calculation is separated into two distinct periods: (1) Standard non-renewable resource sufficiency period (2021 through 2025); and (2) Standard non-renewable resource deficiency period (2026 and beyond). During the non-renewable resource sufficiency period (2021 through 2025), standard avoided energy costs are based on blended market prices. Market prices from the Company's Official Forward Price Curve are weighted by market transactions required to support the addition of an assumed 50 MW Oregon Qualified Facility. To calculate the weighting, two production cost studies are prepared. The only difference between the two studies is an assumed 50 aMW, zero running cost resource. System balancing sales and purchase volumes are extracted from both studies and the change between the two studies is calculated for each market hub. This volume impact is used to weight the Company's Official Market Price Forecast on-peak and off-peak market prices for COB, Mid-Columbia, and Palo Verde for each month. **Table 2** shows the result of this calculation.

The sufficiency period for standard renewable rates is 2021-2023 and the standard renewable resource deficiency period starts in 2024. During the renewable resource sufficiency period (2021-2023), the renewable avoided energy costs are based on blended market prices.

During the non-renewable resource deficiency period, the avoided costs are based on the fixed and variable costs of a CCCT proxy resource that could be avoided or deferred. The capacity and fixed costs of CCCT proxy resource used to set standard avoided cost rates beginning in 2026 is the west side CCCT from the 2019 IRP Supply Side Table.<sup>2</sup>

Since CCCTs are built as base load units that provide both capacity and energy, it is appropriate to split the fixed costs of this unit into capacity and energy components. The fixed cost of a simple cycle combustion turbine (SCCT), which is usually acquired as a capacity resource, defines the portion of the fixed cost of the CCCT that is assigned to capacity.<sup>3</sup> Fixed costs associated with the construction of a CCCT which are in excess of SCCT costs are assigned to energy and are added to the variable production (fuel) cost of the CCCT to determine the total avoided energy costs. **Table 3** shows the capitalized energy costs, which are calculated based on the difference between fixed costs of CCCT and SCCT. The fuel cost of the CCCT defines the avoided variable energy costs. The gas price forecast used as the basis for the CCCT fuel cost is discussed later in this document.

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Oregon's RPS. As a result, the first eligible renewable resource in the 2019 IRP preferred portfolio is in 2024.

<sup>2</sup> 396 MW CCCT (Dry "G/H" 1x1 and associated Duct Firing (DF) capability) - West Side Resource (1500') –as listed in Tables 6.1 and 6.2 of the 2019 IRP. Fuel costs are from the Company's June 2021 Official Forward Price Curve (2106 OFPC).

<sup>3</sup> SCCT Frame ("F"x1) – Naughton Brownfield Resource (6,500'), as listed in Tables 6.1 and 6.2 of the 2019 IRP. This resource is selected in 2026 in the 2019 IRP preferred portfolio.

During the standard renewable resource deficiency period, the standard renewable avoided cost prices are based on resource costs of a renewable proxy wind resource in Wyoming from the 2019 IRP Supply Side Table.<sup>4</sup> The standard renewable on-peak price also includes a capacity adder calculated based on the fixed costs of the SCCT adjusted by the incremental capacity contribution of the QF resource relative to the avoided renewable proxy resource. The capacity adder is allocated to on peak hours by using the on peak capacity factor of the QF resource.

**Table 4** shows the CCCT fuel cost, the addition of capitalized energy costs at an assumed 70.5% capacity factor, and the total avoided energy costs.

Because energy generated by a QF may vary, total standard avoided costs are calculated at 75%, 85% and 90% capacity factor to illustrate the impact of differing generation levels. This calculation is shown in **Table 5**.

Standard avoided costs are differentiated between on-peak and off-peak periods, with capacity costs allocated to on-peak periods. On an annual basis, approximately 56% of all hours are on-peak and 44% are off-peak. **Table 6** shows the calculation of on-peak and off-peak avoided energy prices.

For informational purposes, **Tables 7 and 8** show a comparison between the current approved avoided costs and the proposed avoided costs after incorporating updates.

**Table 9** shows the calculation of the total fixed costs and fuel costs of the CCCT and SCCT that are used in **Table 3** and **Table 4**. In this filing, the Company's thermal proxy resource is a CCCT located on the west side of the Company's system. Current Commission approved standard non-renewable avoided costs are also based upon a CCCT located on the west side of the Company's system. The costs of SCCT and CCCT resources are based on the 2019 Supply Side Table. The cost escalation forecast for these resources is equal to the 2019 IRP inflation forecast, consistent with the assumption in the 2019 IRP.<sup>5</sup>

### Gas Price Forecast

Gas prices used in this filing utilize the Company's June 2021 Official Forward Price Curve (2106 OFPC). **Table 10** shows the natural gas price used in this avoided cost calculation.

**Table 11** shows wind and solar integration costs used in 2019 IRP.<sup>6</sup>

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<sup>4</sup> 3.6 MW Wind turbine 43.6% CF WY, as listed in Tables 6.1 and 6.2 of the 2019 IRP. This resource is selected in 2024 (as a proxy for year-end 2023) in the 2019 IRP preferred portfolio.

<sup>5</sup> For details on the cost-escalation forecast for various resource types, please refer to PacifiCorp's 2019 IRP, Volume I, Chapter 6, pg. 130.

<sup>6</sup> See PacifiCorp's 2019 IRP, Volume II, Appendix F, Figure F.15.



**Table 12** shows the calculation of total resource cost of the renewable proxy wind plant in Wyoming. The capacity costs, fixed O&M plus on-going capital costs, variable O&M, and capacity factor values of the Wyoming Wind resource reflect assumptions from the 2019 IRP Supply Side Table.<sup>7</sup> At the time the 2019 IRP was prepared, this resource was expected to qualify for a 40% production tax credit (PTC), with its expected in-service date at the end of 2023. In December 2019, Congress passed a package of legislation that included a one-year extension of the PTC for wind resources. As a result, wind resources which take steps to begin construction prior to the end of 2020, and which achieve commercial operation within four years, are eligible for a 60% production tax credit. The proxy renewable proxy wind resource is assumed to be eligible for the 60% PTC for the purpose of determining avoided cost prices. The total cost of the proxy wind resource is used in the calculation of standard renewable avoided cost rates as shown in “**Exhibits 5 through 8**”.

**Table 13** shows the calculation of on-peak and off-peak standard renewable avoided cost prices by applying on-peak and off-peak factors. On-peak and off-peak factors are calculated as a ratio of the average annual on-peak Mid-C market price to the flat Mid-C market price.

**Exhibit 1- Std Base Load QF** tab shows the calculation of proposed standard avoided cost rates for a base load QF. On and off-peak avoided cost rates are based on blended market rates for 2021-2025. For 2026 and beyond, the off-peak price is based on the fuel and capitalized energy cost of the CCCT proxy. The on-peak price also includes a capacity adder based on the fixed costs of the SCCT proxy (in \$/kW-yr). The adjusted capacity adder in \$/kW-yr is allocated to on peak hours by using the on peak capacity factor of the base load QF resource, which is assumed to be equal to on peak capacity factor of the CCCT proxy resource.

**Exhibit 2- Std Wind QF** tab shows the calculation of proposed standard avoided cost rates for a wind QF. On and off-peak avoided cost rates are based on blended market rates for 2021-2025. For 2026 and beyond, the off-peak price is based on the fuel and capitalized energy cost of the CCCT proxy. The on-peak price also includes a capacity adder calculated based on fixed costs of a SCCT (in \$/kW-yr) adjusted by the expected capacity contribution of a wind QF from the 2019 IRP (Oregon Wind: 54.5%), as shown in **Table 14**. The adjusted capacity adder (in \$/kW-yr) is allocated to on-peak hours using the on-peak capacity factor of a west side wind QF resource. Standard avoided cost rates for a wind QF are reduced by the annual wind integration charges from **Table 11**.

**Exhibits 3 & 4- Std Solar QF** tab shows the calculation of proposed standard avoided cost rates for a solar QF. On and off-peak avoided cost rates are based on blended market rates for 2021-2025. For 2026 and beyond, the off-peak price is based on the fuel and

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<sup>7</sup> For details on the cost-escalation forecast for various resource types, please refer to PacifiCorp’s 2019 IRP, Volume I, Chapter 6, pg. 130.

capitalized energy cost of the CCCT proxy. The on-peak price also includes a capacity adder calculated based on the fixed costs of a SCCT (in \$/kW-yr) adjusted by expected capacity contribution of a solar QF based on the 2019 IRP (Oregon fixed solar: 11.0%, Oregon tracking solar: 14.8%), as shown in **Table 14**. The adjusted capacity adder (in \$/kW-yr) is allocated to on peak hours by using the on peak capacity factor of a solar QF resource. Standard avoided cost rates for a solar QF are reduced by the annual solar integration charges from **Table 11**.

**Exhibit 5- Renewable Base Load** tab shows the calculation of proposed standard renewable avoided cost rates for renewable base load QF. For 2021-2023, on- and off-peak renewable avoided cost rates are based on blended market rates. For 2024 and beyond, on- and off-peak prices are based on on-peak and off-peak prices of the renewable wind proxy resource as calculated in **Table 12 and Table 13** with resource costs from the 2019 IRP Supply Side Table. Starting in 2024, the standard renewable on-peak price also includes a capacity adjustment based on the fixed costs of the SCCT (in \$/kW-yr) and the incremental capacity contribution of a renewable Base Load QF relative to the avoided renewable proxy resource, as shown in **Table 14**. The fixed costs of the SCCT are based on the 2019 IRP Supply Side Table. The adjusted capacity adder in \$/kW-yr is allocated to on-peak hours by using the on-peak capacity factor of a base load QF resource. Rates are increased during the renewable resource deficiency period by the avoided wind integration charge from **Table 11**.

**Exhibit 6- Renewable Wind** tab shows the calculation of proposed standard renewable avoided cost rates for a wind QF. On- and off-peak renewable avoided cost rates are based on blended market rates for 2021-2023. For 2024 and beyond, on- and off-peak prices are based on on-peak and off-peak prices of the renewable wind proxy resource as calculated in **Table 12 and Table 13** reflecting resource costs from the 2019 IRP Supply Side Table. Starting in 2024, the standard renewable on-peak price also includes a capacity adjustment based on the fixed costs of the SCCT (in \$/kW-yr) and the incremental capacity contribution of an Oregon Wind QF relative to the capacity contribution of the avoided renewable proxy resource, as shown in **Table 14**. The fixed costs of the SCCT are based on the 2019 IRP Supply Side Table. The adjusted capacity adder in \$/kW-yr is allocated to on-peak hours using the on-peak capacity factor of an Oregon wind QF resource. During the renewable resource sufficiency period of 2020-2023, the standard renewable avoided cost rates for a wind QF are reduced by the wind integration charge from **Table 11**.

**Exhibits 7 & 8- Renewable Solar** tab shows the calculation of proposed standard renewable avoided cost rates for a solar QFs. On- and off-peak renewable avoided cost rates are based on blended market rates for 2021-2023. For 2024 and beyond, on- and off-peak prices are based on on-peak and off-peak prices of the renewable wind proxy resource as calculated in **Table 12 and Table 13** reflecting resource costs from the 2019 IRP Supply Side Table. Starting in 2024, the standard renewable on-peak price also includes a capacity adjustment based on the fixed costs of the SCCT (in \$/kW-yr) and the

incremental capacity contribution of Oregon Fixed and Tracking Solar QFs relative to the avoided renewable proxy resource, as shown in **Table 14**. The fixed costs of the SCCT are based on the 2019 IRP Supply Side Table. The adjusted capacity adder in \$/kW-yr is allocated to on-peak hours by using the on-peak capacity factors of the solar QF resource. During the renewable resource sufficiency period, the standard renewable avoided costs rates for fixed and tracking solar QF resources are reduced by solar integration charge from **Table 11**. During renewable resource deficiency period, the rates are adjusted by the difference in the avoided wind and incremental solar integration charges from **Table 11**.

**Exhibit 9– Blending** tab shows the market blending used to weight the Company’s Official Forward Price Curve on-peak and off-peak market prices at COB, Palo Verde and Mid-Columbia by month, which are used in the calculation of rates shown in **Table 2**.

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Minimum Filing Requirements  
Public Utility Commission of Oregon (OPUC) Order No. 16-174 dated May 13, 2016**

**I. Resource Sufficiency / Deficiency Demarcation**

		<b>Explanation</b>	<b>IRP Reference</b>
1.	Non-renewable: Identify the demarcation year for the end of sufficiency period / start of deficiency period.	Deficiency starting in 2026.	Table 8.18 – 2019 IRP Preferred Portfolio, page 258
2.	Non-renewable: Identify the major resource to be acquired (>100 megawatts (MW) and longer than five years) at end of sufficiency period.	West Side Combined-Cycle Combustion Turbine (CCCT) (Dry "G/H" 1x1) with Duct Firing - West Side Resource (1500').	2019 IRP Supply Side Table 6.1 and 6.2
3.	Renewable: Identify the demarcation year for the end of sufficiency period / start of deficiency period.	Deficiency starting in 2024	Table 8.18 – 2019 IRP Preferred Portfolio, page 258
4.	Renewable: Identify the major resource to be acquired (>100 MW and longer than five years) at end of sufficiency period.	Wyoming wind resource starting in 2024	2019 IRP Supply Side Table 6.1 and 6.2

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**II. Gas Price Forecast**

		<b>Explanation</b>	<b>IRP Reference</b>
1.	Identify the source of the gas price forecast.	Official forward price curve (OFPC) dated June 2021	-
2.	If the forecast source differs from that used in the most recent approved avoided cost filing / explain the reason(s) for the change.	The Company updates its OFPC every quarter. The June 2021 OFPC was the most recent curve available at the time of this filing.	-
3.	Provide the yearly forecast price by year / and identify any rounding that has been applied.	Refer to the tabs entitled "Table 10" and "OFPC Source" of the "7_OR Standard QF AC Study_2021 09 10.xlsx"	-
4.	Quantify and describe the extent to which the gas price forecast differs from the most recent approved avoided cost filing, include a description of carbon cost / tax assumption(s).	<p style="text-align: center;">The Company updates its OFPC every quarter. The June 2021 OFPC was the most recent curve available at the time of this filing.</p> <p style="text-align: center;">Refer to the spreadsheet entitled " 8_MFR - II.Gas Price Forecast_2021 09 10.xlsx" for the comparison of the gas price forecast.</p> <p style="text-align: center;">The current OFPC does not assume a federal carbon dioxide (CO<sub>2</sub>) policy. This assumption is unchanged from the most recent approved avoided cost filing.</p>	<p style="text-align: center;">-</p> <p style="text-align: center;">-</p> <p style="text-align: center;">OFPC CO<sub>2</sub> policy: 2019 IRP, page 38</p>

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**III. Sufficiency Period Prices**

		<b>Explanation</b>	<b>IRP Reference</b>
1.	List the market hub(s) used for market price projections, the source for the forward price curves, and any adjustments or blending used in deriving the sufficiency period prices.	Market prices for California-Oregon Border (COB), Mid-Columbia (Mid-C) and Palo Verde (PV) from the June 2021 OFPC are blended based on the change in system balancing purchases and sales using two the Generation and Regulation Initiative Decision Tool (GRID) runs - with and without a 50 MW qualifying facility (QF) resource.	-
2.	Provide the transmission costs assumed used in sufficiency period prices.	No transmission costs are incorporated in standard sufficiency period avoided cost pricing.	-
3.	Provide all other component(s) used to calculate sufficiency period prices.	Prices for wind and solar resources are adjusted to account for integration costs from the 2019 IRP.  For the complete calculation of sufficiency period prices, refer to "7_OR Standard QF AC Study_2021 09 10.xlsx".	Flexible Reserve Study from 2019 IRP, 2019 IRP Volume II-Appendix F, Figure F.15 on Page 109

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**IV. Standard Rates Deficiency Period Resource**

		<b>Explanation</b>	<b>IRP Reference</b>
1.	Provide the resource type, geographic location, nameplate capacity, and annual capacity factor.	CCCT (Dry "G/H" 1X1) West Side Resource (1,500') with Duct Firing available in 2026, Annual energy-weighted CF is 70.5 percent. Refer to Table 9 of "7_OR Standard QF AC Study_2021 09 10.xlsx"	2019 IRP Supply Side Table 6.1 and 6.2
2.	Provide the source of natural gas supply / and the costs assumed for interconnection / infrastructure upgrades, transmission, storage, and any other costs necessary to deliver gas.	Burner Tip West Side Gas, refer to Table 10 of "7_OR Standard QF AC Study_2021 09 10.xlsx"	-
3.	Provide the assumed heat rate. Include assumptions to account for elevation / temperature, and cooling method.	Refer to Table 9 of "7_OR Standard QF AC Study_2021 09 10.xlsx"	2019 IRP Supply Side Table 6.1 and 6.2
4.	List the costs assumed for interconnection facilities.	-	2019 IRP Supply Side Table 6.1 and 6.2
5.	List the components of transmission costs used and their respective values.	-	2019 IRP Supply Side Table 6.1 and 6.2
6.	List the tax assumptions used.	-	2019 IRP Supply Side Table 6.1 and 6.2

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**V. Renewable Rates Deficiency Period Resource**

		<b>Explanation</b>	<b>IRP Reference</b>
1.	Provide the resource type, geographic location / nameplate capacity, and annual capacity factor.	Wyoming wind resource with 43.6% CF from the 2019 IRP Supply Side Table. Refer to Table 12 of “7_OR Standard QF AC Study_2021 09 10.xlsx”	2019 IRP Supply Side Table 6.1 and 6.2
2.	Provide assumptions used for mechanical availability, annual hours of curtailment / and annual megawatt-hours (MWh) of energy curtailed.	None.	
3.	List the costs assumed for interconnection facilities.	-	2019 IRP Supply Side Table 6.1 and 6.2
4.	List the components of transmission costs used and their respective values.	-	2019 IRP Supply Side Table 6.1 and 6.2
5.	List the tax assumptions used. This includes assumed taxes paid (federal, state / local), and assumed tax benefits (e.g. PTC / investment tax credits (ITC) / grants in lieu of credits).	60% PTC (First Year levelized value of \$9.33/MWh (in 2018\$) escalated by the 2019 IRP inflation rate). Refer to Table 12 of “7_OR Standard QF AC Study_2021 09 10.xlsx”	2019 IRP Supply Side Table 6.1 and 6.2
6.	Provide the capacity contribution value, and the method used to derive the capacity contribution value / for solar and wind resource types.	QF Capacity Contribution values - Wind: 54.5 percent, Fixed Solar: 11.0 percent, and Tracking Solar: 14.8 percent.	2019 IRP Wind and Solar Capacity Contribution Study, 2019 IRP Volume II-Appendix N, Table N.4, page 404.
7.	Provide the wind integration cost used / and the method used to derive the wind integration cost.	Prices are adjusted to account for integration costs from the 2019 IRP.	Flexible Reserve Study from 2019 IRP, 2019 IRP Volume II-Appendix F, Figure F.15 on Page 109



### Gas Price Forecast Comparison

	OFPC June 2021	OFPC Mar 2020		
	West Side Gas	West Side Gas	Change	% Change
2026	3.33	2.60	0.73	28%
2027	3.49	2.80	0.69	25%
2028	3.71	3.05	0.66	22%
2029	4.04	3.30	0.74	22%
2030	4.19	3.55	0.64	18%
2031	4.33	3.72	0.61	16%
2032	4.38	3.89	0.49	13%
2033	4.58	4.06	0.52	13%
2034	4.61	4.28	0.33	8%
2035	4.63	4.49	0.14	3%
2036	4.70	4.66	0.04	1%
2037	4.83	4.99	(0.16)	-3%
2038	4.93	5.24	(0.31)	-6%
2039	5.19	5.58	(0.39)	-7%
2040	5.43	5.69	(0.26)	-5%