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February 8, 2023

VIA ELECTRONIC FILING

puc.FilingCenter@puc.oregon.gov

RE: Tariff Advice No. 23-01
Modifications to Schedule 78 - Residential Energy Conservation Program

Attention Filing Center:

Pursuant to OAR 860-030-0010, Idaho Power Company (“Idaho Power” or “Company”) transmits for filing its Seventh Revised Sheet No. 78-4 to update the cost-effectiveness limits (“CELs”) for residential conservation measures included in Schedule 78. As set forth in OAR 860-030-0010(5), Idaho Power requests the tariff to become effective 30 days after submission on March 10, 2023.

The update to the CEL conforms with the Public Utility Commission of Oregon (“OPUC” or “Commission”) Staff (“Staff”) recommendations as outlined in Staff Reports dated August 10, 2016¹ and July 26, 2018² that were approved by the Commission on August 16, 2016, and June 31, 2018, respectively. Accordingly, the Company’s CEL computation contains Demand-Side Management (“DSM”) Alternate Cost inputs from the 2021 Integrated Resource Plan (“IRP”) that was acknowledged by the OPUC in Order No. 23-004, issued on January 13, 2023.³ Included with Sheet No. 78-4 is Attachment 1 detailing the calculations of the updated CELs.

If you have any questions regarding this filing, please contact Regulatory Analyst Zack Thompson (208) 388-2982 or zthompson@idahopower.com.

Sincerely,



Connie Aschenbrenner

CA:sg
Attachment

¹ Docket No. ADV 339/Advice No. 16-11 Staff Report.

² Docket No. ADV 808/Advice No. 18-07 Staff Report.

³ In Docket No. ADV 1283/Advice No. 21-07, the Commission directed Idaho Power to file updates to its CEL computations within 30 days of an IRP acknowledgment.

SCHEDULE 78
RESIDENTIAL ENERGY CONSERVATION
PROGRAM
(Continued)

COST-EFFECTIVENESS GUIDELINE (Continued)

The following Energy Conservation Measures shall be deemed to have the following life cycles:

1. Attic, ceiling, wall and under-floor insulation: 30 years
2. Insulation of walls in heated basements: 30 years
3. Insulation of heating system supply and return air ducts: 30 years
4. Thermal doors: 30 years
5. Storm windows: 15 years
6. Replacement windows meeting the requirements of Chapter 53 of the Oregon Residential Energy Code: 25 years
7. Storm doors: 7 years

COST-EFFECTIVE COMPUTATIONS

Energy Conservation Measures having an expected life cycle of 7 years shall be considered Cost-Effective if the installed cost is less than \$0.24 per annual kWh saved. Energy Conservation Measures having an expected life cycle of 15 years, 25 years, and 30 years shall be considered Cost-Effective if the installed cost is less than \$0.42 per annual kWh saved, \$0.55 per annual kWh saved, and \$0.59 per annual kWh saved, respectively. (C)
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FINANCING

The Company will provide financing for Energy Conservation Measures at the request of a dwelling owner who occupies the dwelling as a residential space heating Customer or rents the dwelling to a tenant who is a residential space heating Customer if the dwelling has an electrical space heating system, installed and operational, which is designed to heat the living space of the dwelling. The financing program shall give the eligible dwelling owner a choice between a cash payment or a loan. As a condition of eligibility for either a cash payment or a loan, an Energy Audit of the dwelling will be required in order to determine which Energy Conservation Measures are Cost-Effective.

The Company will offer to all qualifying owners a choice between the following levels of assistance:

COST EFFECTIVE MEASURES

1. A loan by the Company not to exceed \$5,000, upon approved credit, to be used to pay for the Energy Conservation Measures over a period of time not to exceed 10 years. Minimum monthly payment will be \$15. Interest will be paid at a 6½ percent annual rate for the cost of those measures, or a portion of the cost thereof, which are in accordance with the Cost-Effectiveness criteria of this schedule; or
2. A cash payment to the dwelling owner for 25 percent of the Cost-Effective portion of the Energy Conservation Measures recommended, including installation (but not including the dwelling owner's own labor), not to exceed the cost of the measure, up to a maximum cash payment of \$1,000.

Inputs:	Nominal Discount Rate	7.12%
	Escalation Rate	2.30%
	Real Discount Rate	4.71%
	Avoided Losses	9.60%
	Conservation Credit	10.00%

Measure Life (Years)	PV Alternate Costs Mid-Year Conv. (\$/kWh)	Avoided Losses (\$/kWh)	10% Conservation Credit (\$/kWh)	Oregon Cost-effective Limit (CEL) (\$/kWh)
7	0.20	0.02	0.02	0.24
15	0.35	0.03	0.04	0.42
25	0.45	0.04	0.05	0.55
30	0.49	0.05	0.05	0.59

Notes: Oregon acknowledged 2021 IRP December 6, 2022
Docket No. LC 78

CEL Alternate Cost Worksheet 2022 for OR CEL.xlsx
12/14/2022

Inputs for CEL Calculation		
Nominal Discount Rate ¹		7.12%
Escalation Rate ²		2.30%

Date Created: 12/14/2022
Modified by: Zack Thompson
Department: Regulatory Affairs
Last Modified: 12/14/2022

Description: Provides the values used in the cost-effectiveness computations for Oregon residential conservation measures (Schedule 78) to reflect the Company's updated DSM Alternative Costs. 2021 IRP acknowledged in Oregon on December 6, 2022 in Docket No. LC 78.

How to Use: All inputs are in blue.

Year #	Year	Peak Allocation of Capacity			DSM Alternate costs by Pricing Period ⁵					Discounted DSM Alternate Costs Combined Capacity and Energy \$/kWh (mid-year PV costs)					Cumulative Discounted DSM Alternate Costs Variable Alternative Energy \$/kWh and Fixed Plant Costs (NPV)					
		Summer On-Peak (SONP) ³	Simple Cycle Combustion Turbine (SCCT) ⁴	Summer On-Peak \$ per Hour	Summer On-Peak SONP	Summer Mid-Peak SMP	Summer Off-Peak SOFP	Non-Summer Mid-Peak NSMP	Non-Summer Off-Peak NSOFP	Summer On-Peak SONP	Summer Mid-Peak SMP	Summer Off-Peak SOFP	Non-Summer Mid-Peak NSMP	Non-Summer Off-Peak NSOFP	Summer On-Peak SONP	Summer Mid-Peak SMP	Summer Off-Peak SOFP	Non-Summer Mid-Peak NSMP	Non-Summer Off-Peak NSOFP	
		Hours / Year	\$/kW/year	/kW	Electricity \$ /kW	Electricity \$ /kW	Electricity \$ /kW	Electricity \$ /kW	Electricity \$ /kW	Electricity \$ /kW	Electricity \$ /kW	Electricity \$ /kW	Electricity \$ /kW	Electricity \$ /kW	Electricity \$ /kW	Electricity \$ /kW	Electricity \$ /kW	Electricity \$ /kW	Electricity \$ /kW	Electricity \$ /kW
1	2021	520	131.6	\$0.253	\$0.032	\$0.027	\$0.023	\$0.027	\$0.024	\$0.276	\$0.026	\$0.023	\$0.026	\$0.023	\$0.276	\$0.026	\$0.023	\$0.026	\$0.023	
2	2022	520	131.6	\$0.253	\$0.033	\$0.027	\$0.024	\$0.026	\$0.024	\$0.258	\$0.024	\$0.021	\$0.024	\$0.021	\$0.534	\$0.050	\$0.044	\$0.050	\$0.044	
3	2023	520	131.6	\$0.253	\$0.048	\$0.041	\$0.035	\$0.037	\$0.033	\$0.253	\$0.034	\$0.030	\$0.031	\$0.028	\$0.787	\$0.084	\$0.073	\$0.081	\$0.072	
4	2024	512	131.6	\$0.257	\$0.049	\$0.041	\$0.036	\$0.036	\$0.034	\$0.241	\$0.032	\$0.028	\$0.029	\$0.026	\$1.028	\$0.117	\$0.102	\$0.109	\$0.099	
5	2025	512	131.6	\$0.257	\$0.050	\$0.041	\$0.036	\$0.035	\$0.032	\$0.225	\$0.030	\$0.027	\$0.025	\$0.024	\$1.253	\$0.147	\$0.128	\$0.135	\$0.122	
6	2026	528	131.6	\$0.249	\$0.050	\$0.040	\$0.034	\$0.035	\$0.033	\$0.205	\$0.027	\$0.024	\$0.024	\$0.023	\$1.458	\$0.174	\$0.152	\$0.159	\$0.145	
7	2027	520	131.6	\$0.253	\$0.051	\$0.035	\$0.031	\$0.031	\$0.031	\$0.194	\$0.022	\$0.020	\$0.020	\$0.020	\$1.652	\$0.197	\$0.172	\$0.179	\$0.165	
8	2028	520	131.6	\$0.253	\$0.054	\$0.037	\$0.033	\$0.032	\$0.034	\$0.183	\$0.022	\$0.020	\$0.019	\$0.020	\$1.836	\$0.219	\$0.191	\$0.198	\$0.185	
9	2029	520	131.6	\$0.253	\$0.054	\$0.036	\$0.033	\$0.033	\$0.036	\$0.171	\$0.020	\$0.019	\$0.018	\$0.020	\$2.007	\$0.239	\$0.210	\$0.216	\$0.205	
10	2030	512	131.6	\$0.257	\$0.052	\$0.030	\$0.030	\$0.030	\$0.036	\$0.161	\$0.016	\$0.016	\$0.016	\$0.019	\$2.167	\$0.255	\$0.226	\$0.232	\$0.224	
11	2031	512	131.6	\$0.257	\$0.055	\$0.032	\$0.033	\$0.032	\$0.037	\$0.152	\$0.015	\$0.016	\$0.015	\$0.018	\$2.319	\$0.270	\$0.242	\$0.247	\$0.242	
12	2032	520	131.6	\$0.253	\$0.056	\$0.033	\$0.034	\$0.033	\$0.039	\$0.140	\$0.015	\$0.015	\$0.015	\$0.018	\$2.459	\$0.285	\$0.257	\$0.262	\$0.260	
13	2033	520	131.6	\$0.253	\$0.055	\$0.029	\$0.033	\$0.032	\$0.041	\$0.130	\$0.012	\$0.014	\$0.013	\$0.017	\$2.589	\$0.298	\$0.271	\$0.276	\$0.277	
14	2034	520	131.6	\$0.253	\$0.057	\$0.031	\$0.035	\$0.033	\$0.042	\$0.123	\$0.012	\$0.014	\$0.013	\$0.016	\$2.712	\$0.310	\$0.285	\$0.289	\$0.293	
15	2035	520	131.6	\$0.253	\$0.057	\$0.032	\$0.035	\$0.034	\$0.044	\$0.114	\$0.012	\$0.013	\$0.013	\$0.016	\$2.826	\$0.322	\$0.297	\$0.301	\$0.309	
16	2036	512	131.6	\$0.257	\$0.059	\$0.033	\$0.037	\$0.036	\$0.044	\$0.109	\$0.011	\$0.013	\$0.013	\$0.015	\$2.935	\$0.333	\$0.310	\$0.314	\$0.324	
17	2037	528	131.6	\$0.249	\$0.057	\$0.030	\$0.036	\$0.031	\$0.040	\$0.098	\$0.010	\$0.011	\$0.010	\$0.013	\$3.033	\$0.342	\$0.322	\$0.324	\$0.337	
18	2038	520	131.6	\$0.253	\$0.059	\$0.032	\$0.038	\$0.032	\$0.043	\$0.094	\$0.010	\$0.011	\$0.010	\$0.013	\$3.127	\$0.352	\$0.333	\$0.333	\$0.350	
19	2039	520	131.6	\$0.253	\$0.062	\$0.034	\$0.040	\$0.033	\$0.042	\$0.088	\$0.010	\$0.011	\$0.009	\$0.012	\$3.215	\$0.362	\$0.344	\$0.342	\$0.362	
20	2040	520	131.6	\$0.253	\$0.063	\$0.035	\$0.042	\$0.032	\$0.042	\$0.083	\$0.009	\$0.011	\$0.008	\$0.011	\$3.298	\$0.371	\$0.355	\$0.351	\$0.373	
21	2041	512	131.6	\$0.257	\$0.064	\$0.036	\$0.042	\$0.033	\$0.043	\$0.078	\$0.009	\$0.010	\$0.008	\$0.011	\$3.376	\$0.380	\$0.366	\$0.359	\$0.383	
22	2042	512	131.6	\$0.257	\$0.066	\$0.037	\$0.043	\$0.034	\$0.044	\$0.074	\$0.008	\$0.010	\$0.008	\$0.010	\$3.450	\$0.388	\$0.375	\$0.366	\$0.393	
23	2043	528	131.6	\$0.249	\$0.067	\$0.038	\$0.044	\$0.034	\$0.045	\$0.067	\$0.008	\$0.009	\$0.007	\$0.010	\$3.517	\$0.396	\$0.385	\$0.374	\$0.403	
24	2044	520	131.6	\$0.253	\$0.069	\$0.039	\$0.045	\$0.035	\$0.046	\$0.064	\$0.008	\$0.009	\$0.007	\$0.009	\$3.581	\$0.404	\$0.394	\$0.381	\$0.412	
25	2045	520	131.6	\$0.253	\$0.070	\$0.040	\$0.047	\$0.036	\$0.047	\$0.060	\$0.007	\$0.009	\$0.007	\$0.009	\$3.641	\$0.411	\$0.403	\$0.387	\$0.421	
26	2046	520	131.6	\$0.253	\$0.072	\$0.041	\$0.048	\$0.037	\$0.048	\$0.056	\$0.007	\$0.008	\$0.006	\$0.008	\$3.697	\$0.418	\$0.411	\$0.394	\$0.429	
27	2047	512	131.6	\$0.257	\$0.074	\$0.041	\$0.049	\$0.038	\$0.049	\$0.053	\$0.007	\$0.008	\$0.006	\$0.008	\$3.751	\$0.425	\$0.419	\$0.400	\$0.437	
28	2048	528	131.6	\$0.249	\$0.075	\$0.042	\$0.050	\$0.038	\$0.051	\$0.049	\$0.006	\$0.008	\$0.006	\$0.008	\$3.800	\$0.431	\$0.426	\$0.405	\$0.445	
29	2049	520	131.6	\$0.253	\$0.077	\$0.043	\$0.051	\$0.039	\$0.052	\$0.046	\$0.006	\$0.007	\$0.006	\$0.007	\$3.846	\$0.438	\$0.433	\$0.411	\$0.452	
30	2050	520	131.6	\$0.253	\$0.079	\$0.044	\$0.052	\$0.040	\$0.053	\$0.044	\$0.006	\$0.007	\$0.005	\$0.007	\$3.890	\$0.443	\$0.440	\$0.416	\$0.459	
31	2051	520	131.6	\$0.253	\$0.081	\$0.045	\$0.053	\$0.041	\$0.054	\$0.041	\$0.006	\$0.007	\$0.005	\$0.007	\$3.931	\$0.449	\$0.447	\$0.421	\$0.466	
32	2052	512	131.6	\$0.257	\$0.083	\$0.046	\$0.055	\$0.042	\$0.055	\$0.039	\$0.005	\$0.006	\$0.005	\$0.006	\$3.970	\$0.454	\$0.453	\$0.426	\$0.472	

¹ Nominal Discount Rate is Discount rate (weighted average cost of capital) from Table DSM Financial Assumptions on page 38 of 2021 Idaho Power IRP Technical Appendix C

² Escalation Rate is Financial escalation factor from Table DSM Financial Assumptions on page 38 of 2021 Idaho Power IRP Technical Appendix C

³ Summer On-Peak hours June 1-August 31

⁴ Simple Cycle Combustion Turbine (SCCT) dollars per kW per year is from DSM Financial Assumptions on page 38 of 2021 Idaho Power IRP Technical Appendix C

⁵ DSM Alternate Cost by Pricing Period from Avoided Cost Averages on page 38 of 2021 Idaho Power IRP Technical Appendix C

⁶ DSM Alternate costs by Pricing Period are not published beyond 2040, values for 2041 to 2052 were escalated using Escalation rate above.

Inputs for CEL Calculation	
Nominal Discount Rate ¹	7.12%
Escalation Rate ²	2.30%
Line Losses ³	9.60%
Real Discount Rate	4.71%

$$((1 + \text{Nominal Discount Rate}) / (1 + \text{Escalation Rate})) - 1$$

Energy Conservation Measure Life	
Storm doors	7
Storm windows	15
Chapter 53 windows	25
Attic/Ceiling/Wall/Floor/doors/windows	30

	DSM Alternate Cost Combined Capacity and Energy \$/kWh					
	Summer			Non-Summer		Total
	On-Peak	Mid-Peak	Off-Peak	Mid-Peak	Off-Peak	
Typical Hours in Period	512	960	736	3,616	2,936	8,760

	Load Shapes - Percent of Hours					
	Summer			Non-Summer		Total
	On-Peak	Mid-Peak	Off-Peak	Mid-Peak	Off-Peak	
Storm doors - 7 Years	1.575%	3.500%	1.682%	48.794%	44.450%	100.000%
Storm windows - 15 Years	1.575%	3.500%	1.682%	48.794%	44.450%	100.000%
Chapter 53 windows - 25 Years	1.575%	3.500%	1.682%	48.794%	44.450%	100.000%
Attic/Ceiling/Wall/Floor/doors/windows - 30 Years	1.575%	3.500%	1.682%	48.794%	44.450%	100.000%

	Mid-Year PV of Combined Energy and Capacity \$/kWh					
	Summer			Non-Summer		Total
	On-Peak	Mid-Peak	Off-Peak	Mid-Peak	Off-Peak	
Storm doors - 7 Years	\$1.652	\$0.197	\$0.172	\$0.179	\$0.165	
Storm windows - 15 Years	\$2.826	\$0.322	\$0.297	\$0.301	\$0.309	
Chapter 53 windows - 25 Years	\$3.641	\$0.411	\$0.403	\$0.387	\$0.421	
Attic/Ceiling/Wall/Floor/doors/windows - 30 Years	\$3.890	\$0.443	\$0.440	\$0.416	\$0.459	

	Mid-Year PV of Combined Energy and Capacity \$/kWh x Load Shapes Percentage of Hours					
	Summer			Non-Summer		Total
	On-Peak	Mid-Peak	Off-Peak	Mid-Peak	Off-Peak	
Storm doors - 7 Years	\$0.026	\$0.007	\$0.003	\$0.087	\$0.073	\$0.196
Storm windows - 15 Years	\$0.045	\$0.011	\$0.005	\$0.147	\$0.137	\$0.345
Chapter 53 windows - 25 Years	\$0.057	\$0.014	\$0.007	\$0.189	\$0.187	\$0.455
Attic/Ceiling/Wall/Floor/doors/windows - 30 Years	\$0.061	\$0.016	\$0.007	\$0.203	\$0.204	\$0.491

	PV of Combined Energy and Capacity \$/kWh by load distribution Shape					
	PV Alternate Costs Mid-Year Conv. (cents/kWh)			10% Conservation Credit	CEL Cost-Effective Avoided Cost (cents/kWh)	CEL Cost-Effective Avoided Cost (\$/kWh)
	Line Losses					
Storm doors - 7 Years	19.622	1.096	1.100	23.656	\$0.24	
Storm windows - 15 Years	34.514	1.096	1.100	41.611	\$0.42	
Chapter 53 windows - 25 Years	45.456	1.096	1.100	54.802	\$0.55	
Attic/Ceiling/Wall/Floor/doors/windows - 30 Years	49.139	1.096	1.100	59.243	\$0.59	

¹ Nominal Discount Rate is Discount rate (weighted average cost of capital) from Table DSM Financial Assumptions on page 38 of 2021 Idaho Power IRP Technical Appendix C

² Escalation Rate is Financial escalation factor from Table DSM Financial Assumptions on page 38 of 2021 Idaho Power IRP Technical Appendix C

³ Lines losses is Non-summer secondary losses from Table DSM Financial Assumptions on page 38 of 2021 Idaho Power IRP Technical Appendix C