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MEGAN GOICOECHIA-ALLEN Corporate Counsel MGoicoechiaAllen@idahopower.com IDAHO PUBLIC UTILITIES COMMISSION

October 14, 2022

#### VIA ELECTRONIC MAIL

Jan Noriyuki, Secretary Idaho Public Utilities Commission 11331 West Chinden Blvd., Building 8 Suite 201-A Boise, Idaho 83714

> Re: Case No. IPC-E-22-26 Idaho Power Company's Application to Update the Gas Forecast in the Incremental Cost Integrated Resource Plan Avoided Cost Model

Dear Ms. Noriyuki:

Attached for electronic filing is Idaho Power Company's Annual Compliance Filing in the above entitled matter. If you have any questions about the attached documents, please do not hesitate to contact me.

Attachment No. 1 to the Annual Compliance Filing is confidential. Please handle the confidential information in accordance with the Protective Agreement to be executed in this matter.

Very truly yours,

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Megan Goicoechia-Allen

MGA:cld Enclosures MEGAN GOICOECHEA ALLEN (ISB No. 7623) DONOVAN E. WALKER (ISB No. 5921) Idaho Power Company 1221 West Idaho Street (83702) P.O. Box 70 Boise, Idaho 83707 Telephone: (208) 388-5317 Facsimile: (208) 388-6936 mgoicoecheaallen@idahopower.com dwalker@idahopower.com

Attorneys for Idaho Power Company

### BEFORE THE IDAHO PUBLIC UTILITIES COMMISSION

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IDAHO POWER COMPANY'S ANNUAL COMPLIANCE FILING TO UPDATE THE LOAD AND GAS FORECASTS IN THE INCREMENTAL COST INTEGRATED RESOURCE PLAN AVOIDED COST MODEL.

CASE NO. IPC-E-22-26

IDAHO POWER COMPANY'S ANNUAL COMPLIANCE FILING

Idaho Power Company ("Idaho Power" or "Company") hereby respectfully submits to the Idaho Public Utilities Commission ("Commission") this filing in compliance with Order Nos. 32697 and 32802 to update the load forecast, natural gas forecast, and longterm contract changes used in the Incremental Cost Integrated Resource Plan ("ICIRP") avoided cost methodology. Additionally, in compliance with Order No. 34913, this filing updates the Peak Hours and Premium Peak Hours used to calculate avoided capacity costs for energy storage qualifying facilities ("QF").

#### I. INTRODUCTION

In its final Order No. 32697, the Commission determined that the inputs to the ICIRP avoided cost methodology, utilized for all proposed Public Utility Regulatory Policies Act of 1978 ("PURPA") QFs projects that exceed the published rate eligibility cap, will be updated every two years upon acknowledgement of the utility's Integrated Resource Plan ("IRP") filing, with the exception of the load forecast and the natural gas forecast, which should be updated annually. Discussing the timetable for updates to the ICIRP Methodology the Commission explained:

We find that, in order to maintain the most accurate and upto-date reflection of a utility's true avoided cost, utilities must update fuel price forecasts and load forecasts annually – between IRP filings . . . In addition, it is appropriate to consider long-term contract commitments because of the potential effect that such commitments have on a utility's load and resource balance . . . We further find it appropriate to consider PURPA contracts that have terminated or expired in each utility's load and resource balance. We find it reasonable that all other variables and assumptions utilized within the IRP Methodology remain fixed between IRP filings (every two years).

Order No. 32697, p. 22. Though the Commission originally set June 1 as the annual filing date, it agreed on reconsideration that updates to gas and load forecasts used in the ICIPR methodologies should occur on October 15 of each year. Order No. 32802, p. 3.

In considering implementation of PURPA with respect to energy storage QFs, the Commission determined that the avoided cost of capacity should be paid only on production during the hours identified as the Company's Peak Hours and Premium Peak Hours. Order No. 34794, p. 14. The Commission also agreed that the updates to Peak and Premium Peak Hours should be included in the annual October 15 update to the other ICIRP method inputs. Order No. 34913, p. 6. The load forecast, natural gas forecast, contract information, and Peak Hours and Premium Peak Hours designations for battery storage capacity payments that are set forth below are presented in compliance with the pertinent Commission's Orders and will be incorporated into Idaho Power's ICIRP avoided cost methodology. Consistent with the Commission's prior directives, this methodology will be used by Idaho Power as the starting point for the negotiation of its contractual avoided cost rates as of January 1, 2023.

#### II. LOAD FORECAST

Idaho Power's most recent load forecast from September 2022 shows a slight increase in customer loads in the near term, followed by significant increases beginning in 2025 through the remainder of the forecast period, as compared with the October 2021 load forecast from the last annual update that was approved in May 2022.<sup>1</sup>

Table 1 and Graph 1, below, show the annual load forecast (in average megawatts (aMW)) for both the previously approved October 2021 load forecast and the most recent September 2022 load forecast through 2042.

#### TABLE 1

### Average Annual Load Forecast

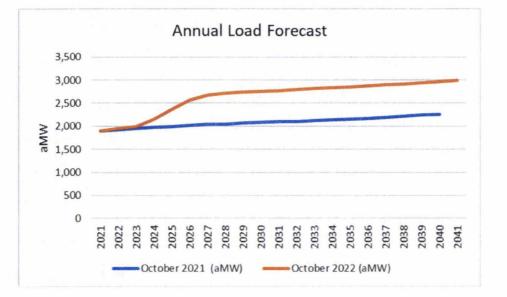
Year	October 2021 (aMW)	October 2022 (aMW)				
2022	1,895	1,897				
2023	1,924	1,951				
2024	1,953	1,993				
2025	1,975	2,148				
2026	1,995	2,360				
2027	2,019	2,566				
2028	2,040	2,676				

<sup>1</sup>See In the Matter of Idaho Power Company's Filing to Update the Load and Gas Forecasts in the Incremental Cost Integrated Resource Plan Avoided Cost Model, Case No. IPC-E-21-35, Order No. 35395 (May 4, 2022).

IDAHO POWER COMPANY'S ANNUAL COMPLIANCE FILING - 3

Year	October 2021 (aMW)	October 2022 (aMW)
2029	2,050	2,706
2030	2,069	2,741
2031	2,084	2,759
2032	2,094	2,772
2033	2,102	2,796
2034	2,118	2,815
2035	2,136	2,833
2036	2,155	2,847
2037	2,169	2,874
2038	2,197	2,897
2039	2,222	2,918
2040	2,244	2,934
2041	2,262	2,971
2042		2,993

**GRAPH 1** 



#### III. NATURAL GAS PRICE FORECAST

In considering the Company's last annual compliance filing, the Commission directed Idaho Power to reevaluate its natural gas price forecast methodology prior to the next annual update. Order No. 35294, p. 11. Having previously recognized the difficulty in determining the accuracy of a forecast with a 20-year time horizon, the Commission

has indicated in the past that changes to base forecast may be appropriate as long as the Company provides a reasonable basis for such change. Order No. 33957, p. 3.

Pursuant to the Commission's directive, as part of its preparation of this update, Idaho Power has reevaluated its natural gas price forecast methodology, including by comparison with the blended method approved by the Commission in Case No. IPC-E-21-35.<sup>2</sup> Based on its review and analysis, the Company continues to believe that the S&P Platts long-term forecast, based on Henry Hub and Sumas Basis Annuals (the "Platts long-term forecast"), is the most appropriate forecast to use in the inputs to Idaho Power's ICIRP avoided cost model.

Significantly, use of the Platts long-term forecast is consistent with the methodology employed by the Company for the IRP planning case natural gas prices forecast in its most recent IRP. As part of the IRP process, the Company has reviewed and analyzed various approaches used to forecast natural gas prices including consideration of the underlying assumptions in natural gas price forecast methodologies. Based on this exercise, the methodologies used by peer utilities, and feedback received during IRPAC meetings, Idaho Power determined the Platts long-term forecast to be most appropriate. Specifically, Idaho Power believes that the inputs/techniques used to develop the Platts long-term forecast help ensure reliability including the fact that it is based on fundamental market drivers rooted in supply and demand. Additionally, the forecast model inputs include production, storage, transmission, and pipeline dynamics,

<sup>&</sup>lt;sup>2</sup> The forecast approved in the last update in Case No. IPC-E-21-35 was calculated as follows, per the Commission's direction in Order No. 35294: the forecast for years 2022-2024 was the Intercontinental Exchange (ICE)/NYMEX price, a yearly average of the monthly forward price settlements as published by ICE on 10/15/2021. The forecast for 2025 was an average of the ICE NYMEX price and the Platts long-term forecast published on 7/21/2021. The price for years 2026-2040 was the Platts long-term forecast published on 7/21/2021. The price for 2041 was a calculated value from the linear regression of the last five years of the Platts forecast.

among other factors, which work to solve for a competitive equilibrium.<sup>3</sup> Moreover, the Platts long-term forecast is updated quarterly versus other forecasts that are updated annually, and further, Platts forecasts price curves for individual proxy basis hubs, which is not only consistent with what is used in the IRP but aligns with IPC's trading operations.

Idaho Power understands that other utilities may use other natural gas price forecast method, including some that may use NYMEX futures prices exclusively over the first few years of their forecasts. However, Idaho Power disfavor this source since the NYMEX markets also trade on technical drivers, which in part has led to unprecedented daily volatility over the last year; NYMEX has the ability to swing +/- 10 percent on any given day. In contrast, the Platts long-term forecast inherently smooths out short-term volatility as it is not subjected to the irrational behavior of the daily markets. Moreover, given that this annual compliance filing is intended to maintain the most accurate and upto-date reflection of a utility's true avoided cost between IRP filings, the Company believes it is appropriate to align the update with the inputs/techniques used in the IRP as opposed to those of other utilities.

Based on its reasoned analysis, Idaho Power intends to use the most recent Henry Hub and Sumas Basis Annuals from S&P Global Platts Long-term Forecast, which was published on September 9, 2022, to update the natural gas price forecast in ICIRP avoided cost calculations. The Commission has previously approved the use of the Platts long-term forecast, though in the last update the Company was directed to use a different forecast method consistent with the methods used by Avista and Rocky Mountain Power. However, Idaho Power believes use of the Platts long-term forecast is more appropriate

<sup>&</sup>lt;sup>3</sup> See, e.g., Idaho Power Company 2021 Integrated Resource Plan, p. 104.

to use in the inputs to Idaho Power's ICIRP avoided cost model based on the explanation provided above. While the Platts long-term forecast reflects an increase in the average annual natural gas forecast prices in comparison to the version of the forecast approved in 2021, the Company believes the increase is justified and reflective of recent and current circumstances.

More specifically, the increased forecast is due to a variety of factors. Since the pandemic, prices have been unpredictably volatile and have subsequently surged amidst global macro events including the Russia-Ukraine war. Henry Hub maintains a strong discount to European prices, but gas markets are now becoming increasingly global, on the back of liquefied natural gas. Demand has recovered from pandemic lows in 2020 and gas usage for power burn has increased over this time. This increase is due to increased coal costs and hotter weather, which has pushed electricity demand to new records. Prior to 2021, gas demand for power had an inverse relationship to gas prices. However, coal retirements have significantly reduced the ability of coal to supplement gas market shares as coal to gas switching has largely been exhausted. Gas has become the Platts forecast is subscription-based and proprietary, this information has been included as Confidential Attachment No. 1, which contains a table and a graph with the 2022 natural gas forecast based on the Platts long-term forecast as well as the version of the forecast approved in 2021 for purpose of comparison.

#### IV. CONTRACT TERMINATIONS, EXPIRATIONS, AND ADDITIONS

Idaho Power currently has three non-PURPA, long-term power purchase agreements with projects that are online: Elkhorn Valley Wind (101 megawatts ("MW")),

Raft River Geothermal (13 MW), and Neal Hot Springs Geothermal (22 MW). In addition, the Company has a long-term power purchase agreement with Jackpot Holdings, LLC (120 MW), which is scheduled to be online in December 2022; and a long-term power purchase agreement with Black Mesa Energy LLC (40 MW), which is scheduled to be online in June 2023.

Idaho Power currently has 129 contracts with PURPA QFs with a total nameplate capacity of 1,137.93 MW. Included in this update for are two replacement energy sales agreements (ESA) for existing Idaho QF projects totaling 1.094 MW.

Attachment 2, Table 1 provides a list of new and terminated contracts since the last update on October 15, 2021. New ESAs and terminated or expired contracts, as well as new complete ESA applications, are all included in the ICIRP model on a continuous basis. New and Commission-approved non-PURPA power purchase agreements or resource acquisitions are also included in the model on a continuous basis.

#### V. PEAK AND PREMIUM PEAK HOURS

Idaho Power has refreshed its analysis of Peak Hours and Premium Peak Hours for 2023, using the same methodology as directed by the Commission in Order No. 34913 and the same data sources as used in prior analyses of these hours. Specifically, Idaho Power has identified the forecasted peak hours in 2023 using the updated average hourly load forecast, and additionally, it has also refreshed its analysis of load from 2022, net of solar generation, and Western Energy Imbalance Market ("WEIM") prices from 2022. This updated information is included in Attachment 2, Tables 2-4.

Based on the updated data, the Peak Hours for 2023 for July are 2:00 pm through the 11:00 pm hour (to midnight). This is an extension of one additional hour compared to

the 2022 Peak Hours for July. For August, the Peak Hours are 5:00 pm through the 8:00 pm hour (to 9:00pm). This is one fewer hour than last year's August peak hours.

The updated Premium Peak Hours for July are 6:00 pm through the 9:00 pm hour, which is a shift in the start hour to one hour later compared with the 2022 Premium Peak Hours. The updated Premium Peak Hours for August are 5:00 pm through the 8:00 pm hour, which is the same as the 2022 Premium Peak Hours.

Idaho Power also evaluated Loss of Load Probability ("LOLP") data from the 2021 IRP's Preferred Portfolio and the Company's Loss of Load Expectation ("LOLE") Tool. The LOLE Tool calculates the probability of demand exceeding generation for every hour in the planning horizon (20 years), by looking at hourly LOLP values within each year.<sup>4</sup> Idaho Power's analysis shows that the hours with the highest LOLP values are concentrated over the summer in the late afternoon/evening hours. Idaho Power uses the LOLP results in this context to validate whether the Peak Hours and Premium Peak Hours that are identified by looking at forecasted load, current year load net of solar, and current year WEIM pricing, are reasonable. The fact that highest LOLP values occur in the summer late afternoon/evening hours supports the Peak Hours and Premium Peak Hours that have been identified here.

As a result, Idaho Power is updating the Peak and Premium Peak Hour definitions for battery storage capacity payments as follows:

Peak Hours: Hours that occur in July starting at 2:00 PM and ending at 11:59:59 PM, and hours that occur in August starting at 5:00 PM and ending at 8:59:59. Peak Hours are subject to change annually and when a new IRP is acknowledged.

<sup>&</sup>lt;sup>4</sup> An in-depth discussion of the LOLP calculation method, process and results can be found in the Loss of Load Expectation section of the 2021 IRP's Appendix C – Technical Report.

Premium Peak Hours: Hours that occur in July, starting at 6:00 PM and ending at 9:59:59 PM, and hours in that occur in August, starting at 5:00 PM and ending at 8:59:59 PM. Premium Peak Hours are subject to change annually and when a new IRP is acknowledged.

The 2021 IRP is currently awaiting Commission acknowledgment. Assuming the 2021 IRP is acknowledged with no material modification associated with the LOLP analysis, the Company requests that the Commission waive the requirement to file an update to the peak and premium peak hours upon acknowledgment of the IRP.

#### VI. CONCLUSION

Idaho Power hereby respectfully submits this updated load forecast, natural gas forecast, and contract information in compliance with the Commission's directives in Order Nos. 32697, 32802, and 34913 and asks the Commission to accept the same for filing.

Respectfully submitted this 14<sup>th</sup> day October 2022.

Megon Joicoechea Allen

MEGAN GOICOECHEA ALLEN Attorney for Idaho Power Company

## **BEFORE THE**

## **IDAHO PUBLIC UTILITIES COMMISSION**

## CASE NO. IPC-E-22-26

**IDAHO POWER COMPANY** 

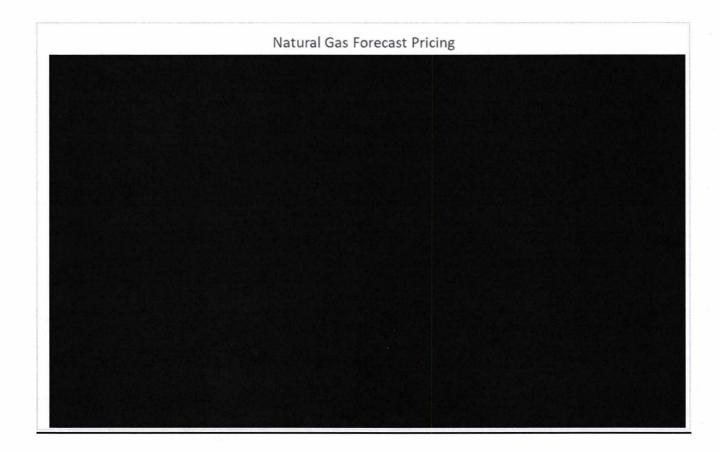
**CONFIDENTIAL ATTACHMENT 1** 

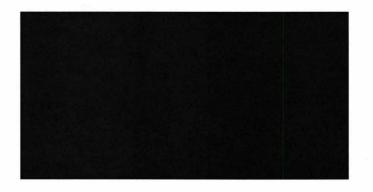
### **Natural Gas Forecast Pricing**

Y	'ear	IPC-E-21-3 Natural Ga Forecast [7	s Natural Gas
2	022	\$	
2	023	\$	
2	024	\$	
2	025	\$	
2	026	\$	
2	027	\$	
2	028	\$	
2	029	\$	
2	030	\$	
2	031	\$	
2	032	\$	
2	033	\$	
2	034	\$	
2	035	\$	
2	036	\$	
2	037	\$	
2	038	\$	
2	039	\$	
2	040	\$	
2	041	\$	

[1] Forecast calculated per the Commission's direction in Order No. 35344, using ICE Nymex forwards for the initial years of the forecast and the S&P Global Platt's Long-term forecast for the remaining years.

[2] Henry Hub Annuals from S&P Global Platt's Long-term Forecast adjusted for Sumas basis and transport costs for Idaho City Gate delivery (published September 9, 2022).





## **BEFORE THE**

## **IDAHO PUBLIC UTILITIES COMMISSION**

## CASE NO. IPC-E-22-26

## **IDAHO POWER COMPANY**

## **ATTACHMENT 2**

	a second and a second second	Projects	Active and Online	a second data the second		
Resource Type	Project Name	<b>State</b>	New or Replacement Contract Date	Project Size (MW)		
Hydro	Faulkner Ranch Hydro	ID	3/21/2022	0.87		
Hydro	Shingle Creek	ID	1/24/2022	0.224		
			TOTAL	1.094		
		Proje	ects Not On-Line			
Resource Type	Project Name	State	New or Replacement Contract Date	Project Size (MW)		
Solar	Black Mesa Energy LLC	ID	2/16/2022	40		
			TOTAL	40		
	Tern	ninated E	nergy Sales Agreements			
Resource Type	Project Name	<u>State</u>	Contract Termination Date	Project Size (MW)		
			TOTAL	0		

### Table 1: Summary of New and Terminated Projects

### Tables 2-4: Analysis for Peak and Premium Peak Hours

### Table 2: 2023 Forecast Average Load

### 2023 Forecast Average Load

Hour Beginning (MPT)	Hour Ending (MPT)	Jan	Feb	Mar	Apr	Мау	Jun	Jul	Aug	Sep	Oct	Nov	Dec
midnight	1	1747					2140		2247	1765			
1	2		1616		1465			2296	2093	1671	1316		1809
2	3								1991	1613	1261	1454	178
3	4		1595			1460		2060	1929	1587	1241	1450	
4	5					1445			1888	1575			
5	6								1873	1590	1271	1513	1817
6		1808				1549			1915	1662	1367	1624	
7	8					1696	1771	2015	2004	1805	1559		2009
8	9			1832	1748		1918	2147	2104	1914	1735		2112
9	10	2150	2063	1844	1764	1894	2061	2306	2204	1957	1798	1961	2155
10		2133		1821	1759	1935	2168	2438	2293	1991	1816	1940	
11	12	2094	1993	1782	1744	1957	2264	2557	2374	2012	1805	1895	2135
noon	13	2040	1941	1739	1722	1970	2350	2673	2448	2023	1779	1844	2090
1	14	1981	1887	1693	1695	1972	2426	2784	2525	2029	1755	1792	2048
2	15	1935	1847	1658	1672	1977	2509	2908	2612	2048	1740	1751	2011
3	16	1903	1811	1629	1656	1987	2590	3031	2706	2069	1735	1720	1988
4	17	1898	1796	1609	1644	1994	2649	3140	2796	2090	1739	1711	1989
5	18	1943	1817	1610	1647	2017	2693	3216	2864	2125	1756	1756	2040
6	19	2057	1876	1629	1654	2041	2723	3260	2904	2150	1777	1872	2154
7	20	2134	1979	1660	1664	2051	2733	3279	2918	2151	1799	1928	2180
8	21	2104	1995	1697	1670	2048	2710	3245	2869	2133	1851	1905	2152
9	22	2062	1962	1733	1707	2033	2636	3135	2774	2136	1819	1863	2122
10	23	1978	1888	1692	1702	2024	2538	2992	2678	2045	1723	1779	2061
11	24	1848	1774	1603	1614	1887	2387	2802	2481	1897	1571	1662	1965

### Table 3: 2022 Actual Load, Net of Solar

#### 2022 Actual Load, Net of Solar Generation

Red circle represents hours in 2022 when load net of solar was highest, within the yellow-highlighted highest-forecasted-load block (from 2023 load forecast).

Hour Beginning (MPT)	Hour Ending (MPT)	January	February	March	April	May	June	July	August	September	October	November	December
midnight	1	2061	1883			1901	2582	2641	2569	2411			
1	2	2016	1875	1714	1610	1819	2424	2488	2446	2209		1. m	×
2	3	2005	1876	1723	1609	1755	2302	2371	2349	2105		2	1
3	4	2004	1895	1752	1610	1724	2195	2296	2267	2026	1		
4	5	2029	1960	1819	1658	1767	2137	2225	2234	1991			
5	6	2095	2060	1941	1734	1795	2144	2245	2256	2012		-	
6	7	2244	2227	2121	1900	1920	2193	2304	2344	2114			
7	8	2380	2415	2181	2010	1908	2273	2406	2403	2174			
8	9	2415	2394	2047	1950	1904	2364	2486	2459	2142			
9	10	2310	2219	1943	1940	2016	2454	2526	2485	2156			
10	11	2312	2112	1764	1906	1992	2565	2685	2506	2213			
11	12	2234	2003	1727	1863	2036	2676	2797	2673	2362			1256
noon	13	2150	1961	1671	1808	2028	2760	2885	2836	2561		the states	
1	14	2101	1941	1620	1732	2044	2847	2967	3004	2737			
2	15	2117	1923	1606	1671	2138	2979	3110	3154	2884		· · ·	
3	16	2134	1939	1654	1724	2230	3068	3231	3255	2984		19	
4	17	2179	1971	1715	1780	2305	3187	3300	3280	3071			-
5	18	2303	2075	1791	1763	2313	3212	3336	3295	3145		1	
6	19	2367	2170	1946	1770	2363	3284	3350	3305	3132			
7	20	2343	2195	2034	1808	2436	3320	3406	3310	3053			
8	21	2276	2175	2000	1876	2415	3374	3412	3251	2915		-	
9	22	2227	2102	1947	1880	2359	3271	3288	3148	2763			
10	23	2145	1997	1841	1802	2222	3085	3102	2940	2539			
11	24	2078	1920	1754	1696	2063	2825	2860	2736	2531		1.00	

# Table 4: 2022 Average of Western Energy Imbalance Market Locational Marginal Prices

Hour Beginning	Hour Ending												
(MPT)	(MPT)	January	February	March	April	May	June	July	August	September	October	November	December
midnight	1	\$ 37.84	\$ 38.48	\$ 34.22	\$ 61.16	\$ 53.05	\$ 22.20	\$ 56.25	\$ 76.61	\$ 85.90	\$ 49.86		
1	2	\$ 39.46	\$ 38.37	\$ 34.33	\$ 54.72	\$ 45.36	\$ 14.36	\$ 53.69	\$ 72.28	\$ 70.65	\$ 45.76		
2	3	\$ 36.99	\$ 38.55	\$ 30.94	\$ 51.16	\$ 45.05	\$ 7.17	\$ 49.84	\$ 70.36	\$ 70.05	\$ 43.06		
3	4	\$ 42.40	\$ 36.87	\$ 31.53	\$ 50.14	\$ 42.97	\$ 7.31	\$ 46.32	\$ 64.29	\$ 64.98	\$ 41.80		
4	5	\$ 36.74	\$ 38.66	\$ 31.41	\$ 51.80	\$ 41.79	\$ 8.32	\$ 44.04	\$ 63.50	\$ 62.88	\$ 40.97		
5	6	\$ 39.42	\$ 41.41	\$ 34.07	\$ 56.35	\$ 46.72	\$ 11.98	\$ 44.42	\$ 65.36	\$ 63.82	\$ 43.78	_	
6	7	\$ 44.01	\$ 45.63	\$ 38.83	\$ 60.95	\$ 50.68	\$ 19.66	\$ 49.18	\$ 72.95	\$ 73.82	\$ 49.33		
7	8	\$ 49.72	\$ 62.68	\$ 41.66	\$ 64.87	\$ 54.61	\$ 24.00	\$ 46.80	\$ 68.17	\$ 71.20	\$ 52.63		_
8	9	\$ 46.94	\$ 73.40	\$ 40.13	\$ 60.95	\$ 40.72	\$ 17.57	\$ 46.55	\$ 55.84	\$ 68.97	\$ 48.76		
9	10	\$ 43.72	\$ 34.55	\$ 37.03	\$ 57.40	\$ 39.97	\$ 21.43	\$ 44.99	\$ 54.17	\$ 62.06	\$ 42.94		-
10	11	\$ 38.00	\$ 29.38	\$ 30.29	\$ 53.00	\$ 36.92	\$ 22.25	\$ 47.99	\$ 57.57	\$ 63.49	\$ 40.95		
11	12	\$ 36.74	\$ 29.06	\$ 28.29	\$ 49.03	\$ 36.16	\$ 22.90	\$ 52.26	\$ 60.97	\$ 67.09	\$ 41.18		
noon	13	\$ 34.23	\$ 25.36	\$ 25.23	\$ 46.36	\$ 32.37	\$ 29.73	\$ 55.98	\$ 65.06	\$ 71.29	\$ 41.32	л. Т	
1	14	\$ 31.70	\$ 22.74	\$ 23.04	\$ 43.34	\$ 35.00	\$ 32.52	\$ 61.98	\$ 69.73	\$ 76.61	\$ 42.35		
2	15	\$ 29.42	\$ 20.81	\$ 21.57	\$ 39.78	\$ 39.38	\$ 36.78	\$78.95	\$ 78.10	\$ 82.71	\$ 45.70		
3	16	\$ 30.98	\$ 20.22	\$ 19.16	\$ 37.67	\$ 38.83	\$ 35.70	\$79.74	\$ 82.92	\$ 95.46	\$ 46.51		
4	17	\$ 40.23	\$ 30.05	\$ 23.02	\$ 40.47	\$ 39.70	\$ 37.31	\$89.42	\$ 90.28	\$ 155.58	\$ 55.31	1.1.1	1.0.1
5	18	\$ 53.94	\$ 57.02	\$ 32.66	\$ 43.54	\$ 41.55	\$ 35.95	\$88.58	\$84.27	\$ 221.35	\$ 64.47	2	
6	19	\$ 51.90	\$ 54.10	\$ 56.11	\$ 49.23	\$ 43.36	\$ 36.65	\$93.19	\$107.59	\$ 197.07	\$ 69.63	-	
7	20	\$ 50.20	\$ 48.61	\$ 53.35	\$ 68.79	\$ 55.83	\$ 40.33	\$96.68	\$127.28	\$ 367.40	\$ 85.39		
8	21	\$ 49.03	\$ 46.99	\$ 41.20	\$ 76.58	\$ 54.75	\$ 53.46	\$123.05	\$172.99	\$ 363.87	\$ 94.37		
9	22	\$ 50.42	\$ 48.39	\$ 42.03	\$ 75.56	\$ 59.51	\$ 43.79	\$95.36	\$ 107.28	\$ 108.96	\$ 68.07		
10	23	\$ 44.69	\$ 45.90	\$ 39.73	\$ 72.15	\$ 60.09	\$ 37.38	\$75.01	\$ 84.68	\$ 82.43	\$ 59.06		
11	24	\$ 41.47	\$ 44.29	\$ 38.33	\$ 69.91	\$ 63.36	\$ 32.92	\$67.66	\$ 86.64	\$ 94.27	\$ 57.98		

### 2022 Average of Western Energy Imbalance Market Locational Marginal Prices (ELAP Prices)

Red circle represents hours in 2022 when ELAP prices were highest, within the yellow-highlighted highest-forecasted-load block (from 2023 load forecast).