MINNESOTA
PUBLIC UTILITIES COMMISSION

Staff Briefing Papers

Meeting Date	December 1, 2022		Agenda Item 2*
Company	Minnesota Power		
Docket No.	**E-015/AA-22-216**		
	In the Matter of Minnesota Power's Petition for Approval of Annual Forecasted Rates for its Rider for Fuel and Purchased Energy Charge		
Issues	At what level should Minnesota Power's 2023 Annual Forecasted Rates for its Fuel and Purchased Energy Charge be set?		
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✓ Relevant Documents	Date
Minnesota Power – Initial 2023 Forecast Filing (Public and Trade Secret)	May 2, 2022
Department of Commerce – Comments (Public and Trade Secret)	June 30, 2022
Minnesota Power – Reply Comments (Public and Trade Secret)	July 29, 2022
Department of Commerce – Response to Reply Comments (Public and Trade Secret)	October 7, 2022
Large Power Intervenors – Response to Reply Comments	October 10, 2022
Minnesota Power – Letter Response	October 18, 2022

The attached materials are work papers of the Commission Staff. They are intended for use by the Public Utilities Commission and are based upon information already in the record unless noted otherwise.

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I. Statement of the Issues

At what level should Minnesota Power's 2023 Annual Forecasted Rates for its Fuel and Purchased Energy Charge be set?

II. Background

On May 2, 2022, Minnesota Power (MP, the Company) filed the initial forecast (Petition) of its 2023 Fuel and Purchased Energy Charges.

On June 30, 2022, the Minnesota Department of Commerce – Division of Energy Resources (Department) filed comments requesting additional information before recommending approval of Minnesota Power's forecast.

On August 31, 2022, Minnesota Power filed reply comments providing the information requested by the Department. The Company revised its 2023 forecast to include MISO Planning Resource Auction (PRA).

On October 6, 2022, the Department filed a response to MP's reply comments and recommended approval of the Company's revised 2023 forecast with modifications.

On October 10, 2022, Large Power Intervenors (LPI) filed a response to comments in support of the Departments modification recommendation.[1]

On October 18, 2022, Minnesota Power filed a Letter response disagreeing with use of full year PRA rate and recommending keeping its forecast the same as their August 31 filing.

[1] LPI is an ad hoc consortium of Large Power (LP) and Large Light & Power (LLP) customers on Minnesota Power's system consisting for purposes of this filing of Blandin Paper Company; Boise White Paper, a Packaging Corporation of America company, formerly known as Boise, Inc.; Cleveland-Cliffs Minorca Mine, Inc.; Enbridge Energy Limited Partnership; Gerdau Ameristeel US Inc.; Hibbing Taconite Company; Northern Foundry, LLC; Sappi Cloquet, LLC; USG Interiors, Inc.; United States Steel Corporation (Keetac and Minntac Mines); and United Taconite, LLC.

III. Parties' Comments

A. Minnesota Power – Initial Petition

1. 2023 Forecast

Minnesota Power's 2023 forecasted sales are 13,594,358 MWh and forecasted costs are $265,752,178 resulting in a $29.61/MWh average cost. Tables 1 through 3 summarize MP's 2023 forecasted fuel and purchase power costs.

Table 1: 2023 Forecasted Fuel Cost Summary

Company's Generating Stations	$148,359,504
Plus: Purchased Energy	$224,480,219
Plus: MISO Charges	$48,576,079
Less: MISO Schedules 16, 17, & 24	(289,240)
Less: Cost Recovered through Inter system Sales	$154,774,719
Less: Costs Related to Solar	$2,522,315
Plus: Time of Generation and Solar Energy Adjustment	$1,344,170
Total Cost of Fuel	$265,752,178
Total Fuel Clause Sales (MWh)	8,978.10
Average Cost of Fuel (¢/kWh)	2.961

Table 2: 2023 Forecasted Sales (MWh)

Total Sales of Electricity	13,594,358
Residential	1,036,816
Commercial	1,195,779
LP Taconite	4,231,901
LP Paper and Pulp	600,104
LP Pipeline	309,481
Other Misc.	334,745
Municipals	1,326,588
Inter System Sales	4,558,944
Less: Inter System Sales	4,558,944
Customer Intersystem Sales	844,414
Market Sales	3,712,057
Station Service	2,473
Sales due to Retail Loss of Load	0
Less: Solar Generation & Purchases	57,323
Total Fuel Clause Sales	8,978,091

Table 3: 2023 Monthly Forecasted Fuel Cost (¢/kWh)

January	February	March	April	May	June
2.831	2.762	3.171	3.06	2.808	3.116

July	August	September	October	November	December
3.203	3.003	2.879	2.879	2.728	2.858

2. RTSim Model Software

As they have done in previous years, MP used the RTSim production cost model for budgeting and planning purposes. The RTSim model is a detailed hourly simulation that dispatches generation to meet customer load requirements, while simultaneously factoring in bilateral contracts and the energy market, and assigns the appropriate energy costs to customers. The inputs that drive the model include customer loads, forecasted forward energy prices, contract energy purchases and sales, and generation parameters (i.e., fuel costs, maintenance schedules, etc.) The model's output includes the energy and costs for thermal generation, hydro generation, wind generation, bilateral contracts, and MISO market purchases and sales.

3. Forward Energy Prices

For forward energy prices, Minnesota Power used the forward market energy price outlook. The 2022 energy price outlook is based on a 10-business day average of forward market energy price at close from January 24, 2022, through February 2, 2022. The market prices are used in the model for generation dispatch and the MISO market purchase costs or MISO market sales revenues.

4. Customer Sales

Minnesota Power explained that its sales forecast was based using the following assumptions:

- Residential: Based on Minnesota Power's 2020 Annual Electric Utility Forecast Report (AFR)[2]
- Commercial: Modeled total non-farm employment in the Duluth Metropolitan Statistical Area using method similar to AFR regression modeling. This modeling is focused on sales to-date in the COVID-19 pandemic, including the recession's effect on commercial customer operations to-date. The econometric results are adjusted for expected installation of new customer-owned generation.
- Industrial Taconite: Operating at levels reflective of the historical average, adjusted for current U.S. steel mill operating levels. Routine maintenance incorporated based on historical trends and customer business plans, if known. Inter-System sales such as

[2] Docket E-999/PR-20-11.

Incremental Production Service (IPS) Fixed and Variable Non-firm are based on contract terms, historical trends and customer business plans, if known.

- Industrial Paper and Pulp: Verso idled. Operational customers reflective of 2019 operating levels. New paper customer is expected to begin operations. Inter-System sales such as Incremental Production Service (IPS), Replacement Firm Power Service (RFPS), Economy, and Non-firm developed based on contract terms, historical trends and customer business plans, if known.
- Industrial Pipelines: One pipeline customer is based on a three-year average less a known operational change.
- Other Industrial: Other large industrial customers assumed a 3-year (2019-2021) historical average of annual sales to the customers. Adjustments are applied for any known or expected change in operation that would impact energy sales.
- Municipals: Sales for 13 customers reflect new contracts with reduced firm demand and energy sales. Hibbing Public Utilities outlook reflects a new agreement that incorporates the city utilizing their own generation and market to serve their load removing their firm demand and energy sales. One customer reflects an increase in load relative to recent years due to change in pipeline pumping operations and restart of a large oil refinery.
- Losses: Transmission losses are allocated to Firm Transmission service, Non-Firm Transmission, and Distribution-level service based on their projected energy requirements and expected losses at each level of service.

5. Generation Costs

a. Boswell

Assumptions for Boswell are as follows:

- 2022 year-end inventory fuel volume and total dollars as forecasted in February 2022 latest estimate provides January 1, 2023, beginning fuel inventory.
- Fuel cost forecast provided is for Minnesota Power's share only (WPPI owns 12.5 percent of inventory per Minnesota Power/WPPI Operating Agreement).
- 2023 delivery volume is based upon maintaining a (trade secret) inventory target as approved by Minnesota Power Fuel Strategy Group:
  - Rail transportation cost = actual 2023 BNSF contract with All-LF escalator.
  - Rail fuel surcharge based upon EIA diesel forecast.
  - Coal topper pricing escalated 2% from 2022.
  - Coal commodity cost = actual coal 2023 coal contracts.
  - Previous month's ending inventory (Total MMBtus and \$) + Current month coal deliveries (Total MMBtus and \$) = weighted average current month coal burn cost.
- Coal burn based upon generation formulated/provided by Minnesota Power Utility Planning.

- 2023 Montana/Wyoming coal blend ratios kept consistent with 2022 target.
- Natural gas costs based upon 2023 Henry Hub Forward Natural Gas Curve, from Gas Daily and includes pipeline tariff cost.

b. Hibbard

Assumptions for Hibbard are as follows:

- Biomass burn based upon generation formulated/provided by Minnesota Power Utility Planning.
- Biomass Pricing based upon 2023 forecasted forest residue pricing.
- Natural gas costs based upon 2023 Henry Hub Forward Natural Gas Curve, from Gas Daily, and includes City of Duluth Comfort Systems transportation charges

c. Laskin

Assumptions for Laskin are as follows:

- Natural Gas burn based upon generation formulated/provided by Minnesota Power Utility Planning.
- Natural gas costs based 2023 Henry Hub Forward Natural Gas Curve, from Gas Daily, and pipeline transportation based upon actual supplier contract formula pricing.

d. Wind

Assumptions for Wind are as follows:

- Minnesota Power's use of a third-party meteorological wind speed forecast to estimate wind farm energy production.
- Wind generation owned by Minnesota Power has $0 fuel cost.

e. Hydro

Assumptions for Hydra are as follows:

- Minnesota Power's use of a third-party hydrological forecast to estimate the hydro generation levels.
- Hydro generation owned by Minnesota Power has $0 fuel cost.

6. Purchase Costs

Costs for Manitoba Hydro, Minnkota Power, Oliver County 1 and 2, Wing River, Nobles 2, Square Butte are all based on contract prices.

For purchase to serve a Non-Firm Retail Customer, an estimate was made because no such purchases have been previously made.

For market purchases, Minnesota Power uses the RTSim production cost model to determine the volume and cost for MISO market purchases. When additional energy is needed to serve load or it is lower cost to purchase energy from the market than to generate energy from Minnesota Power's dispatchable fleet, the model will utilize the MISO market for purchases.

7. Inter-System Sales

Assumptions for each type of inter-system sales is as follows:

- IPS and RFPS: based on contract terms, historical trends, and customer business plans, if known.
- Economy and Non-Firm: based on contract terms, historical trends, and customer business plans, if known.
- Oconto: based on contract terms.
- Asset Based Sales (Non-MISO): Macquarie and Nextera contracted sales. Minnesota Power uses a RTSim production cost model to determine when a sale is an asset-based sale or liquidated.
- Liquidated Sales: Macquarie and Nextera contracted sales. Minnesota Power uses a RTSim production cost model to determine when a sale is an asset-based sale or liquidated.
- MISO Market Sales: Minnesota Power uses the RTSim production cost model to determine the volume and cost for MISO market sales. When excess energy is available and it's economical, the model will sell the excess energy into the MISO market.
- Minnkota Power Liquidation: based on contract terms.
- Oliver County 1 and 2: based off of an average of January - December 2021 Station Service.
- WPPI Energy: Station Service is based off of January - December 2021 average per day multiplied by the 2023 Forecasted Scheduled and Forced Outages at Boswell 4.
- MISO Costs: Discussed below.
- Asset Based Sales Margins: Minnesota Power uses the RTSim production cost model to determine when a sale is an asset-based sale. The margins from these sales are included.

8. Fuel Contracts

In addition to trade secret information related to its coal, gas and rail contracts, Minnesota Power stated that, for use at the Hibbard Renewable Energy Center, it purchases wood fuel from 10 separate suppliers.

9. Day Ahead and Real-Time Energy Costs

Minnesota Power's Energy Pricing system assigns purchases and generation based on cost not category type. Minnesota Power assigns the highest cost generation or purchases to non-FAC sales first to help ensure that the FAC receives the lowest cost generation or purchases. Certain transactions do not follow this methodology. Output from its renewable resource generators and renewable energy power purchase agreements are dedicated to load to help meet the states renewable energy standard. Minnesota Power then determines the source of the FAC MWh by a separate analysis.

A similar analysis is not done for non-FAC sales because there has not been a need to report the sources of non-FAC sales. MP was unable to identify what portion of Day Ahead and Real Time Energy was assigned to the other non-FAC categories.

10. Auction Revenue Rights

The 2023 estimates are based on what was allocated during the same timeframe in 2022 and consistent with what is used in Attachment 3 - MISO Costs.

B. Department Comments

1. Sales Forecast

As reflected in Table 4, the Department noted that 2023 sales forecasts are higher than 2022's forecast.This is largely the result of higher Large Power Taconite sales, higher Large Power Paper and Pulp sales, and higher intersystem sales. As a result of higher Large Power Taconite and Large Power Paper and Pulp sales, Minnesota Power also forecasts higher Total Fuel Clause Sales in 2023 compared to 2022.

Table 4: Minnesota Power 2022 & 2023 Sales Forecast

	2022 MWh	2023 MWh
Total Sales of Electricity	11,917.3	13,594.4
Residential	1,033.9	1,036.8
Commercial	1,188.3	1,195.8
LP Taconite	3,925.2	4,231.9
LP Paper and Pulp	485.0	600.1
LP Pipeline	316.3	309.5
Other Misc.	332.8	334.7
Municipals	1,498.6	1,326.6
Inter System Sales	3,137.2	4,558.9
Less: Inter System Sales	3,137.2	4,558.9
Customer Inter System Sales	872.7	844.4
Market Sales	2,260.1	3,712.1
Station Generation Service	4.4	2.5
Sales due to Retail Loss of Load	0.0	0.0
Less: Solar Generation & Purchases	16.2	57.3
Total Fuel Clause Sales	8,763.9	8,978.1

For forward energy prices, Minnesota Power used the forward market energy price outlook.

The Department, in its Information Request (IR) No. 6, asked MP to provide all inputs and outputs for the RTSim Production Costs Model used for MP's 2023 Fuel Forecast. Based on a review of MP's response, the Department did not identify any issues of concern.

As shown in Table 5, the Department compared MP's 2023 sales forecast to 2019 to 2021 actual sales. Based on the Department's review, the Department noted that Minnesota Power's 2023 sales forecast for retail sales and wholesale intersystem sales are close to the most recent 2021 actuals and three-year average for 2019 to 2021. Minnesota Power does not expect Retail Loss of Load in 2023 as customers are expected to be near full load.

Table 5: Comparison of Minnesota Power's 2019-2021 Actual Sales vs. Forecasted 2023 Sales (MWh)[3]

	2019 Actuals	2020 Actuals	2021 Actuals	2023 Forecast
Total Sales of Electricity	**13,667,492**	**12,868,727**	**14,566,917**	**13,594,358**
Residential	1,042,353	1,046,011	1,043,665	1,036,816
Commercial	1,201,898	1,134,254	1,174,413	1,195,779
LP Taconite	4,468,614	4,295,593	4,428,819	4,231,901
LP Paper & Pulp	900,207	752,072	489,259	600,104
LP Pipeline	359,548	348,130	341,031	309,481
Municipals	355,789	316,907	341,353	334,745
Other Miscellaneous	1,466,430	1,340,290	1,393,315	1,326,588
Intersystem Sales	3,872,653	3,635,470	5,355,063	4,558,944
Less: Intersystem Sales	3,872,653	4,415,869	5,355,063	4,558,944
Customer Intersystem Sales	687,809	780,399	1,067,722	844,414
Market Sales	2,947,679	3,112,893	3,412,055	3,712,057
Station Service	6,403	4,521	6,126	2,473
Sales due to Retail & Resale Loss of Load	230,762	518,056	869,160	-
Less: Solar Generation & Purchases	14,028	16,165	17,215	57,323
Total Fuel Clause Sales	9,780,811	8,436,693	9,194,640	8,978,091

The Department recommended, subject to true-up in the 2023 True-Up Report, approval of MP's 2023 sales forecast to set 2023 FCA rates. The Department noted that its recommendations in this docket should not be used in MP's future rate cases or other rate proceedings, where a more thorough review of MP's sales forecast will occur.

[3] Department Comments at 6.

2. Fuel Costs Forecast

As shown in Table 6, the Department detailed MP's fuel costs for 2019-2021 actuals by year, the 2019-2021 three-year average and the 2023 forecast.

Table 6: 2019-2021 Actuals and Three-Year Average Compared to 2023 Forecasted Fuel Cost Summary[4]

	2019 Actuals	2020 Actuals	2021 Actuals	2019-2021 Average	2023 Forecast
Generating Stations	88,109,180	76,291,181	111,316,951	91,905,771	148,359,504
Plus: Purchased Energy	215,257,410	193,346,296	302,780,486	237,128,064	224,480,219
Plus: MISO Charges (energy not included)	13,164,287	16,466,491	64,223,807	31,284,862	48,576,079
Plus: MISO Sch. 16, 17, & 24	(346,563)	(164,843)	(79,627)	(197,011)	(289,240)
Less: Fuel Costs for Intersystem Sales	90,393,877	97,823,379	160,780,204	116,332,487	154,774,719
Less: Costs Related to Solar	1,654	70	1,366	1,030	2,522,315
Plus: Time of Generation & Solar Energy	412,926	432,548	386,358	410,611	1,344,170
Total Cost of Fuel	226,894,835	188,877,910	318,005,659	244,592,801	265,752,178
Total Fuel Clause Sales	9,780,811	8,436,693	9,194,640	9,137,381	8,978,091
Average Cost of Fuel	**23.20**	**22.39**	**34.59**	**26.77**	**29.60**

In response to Department IR No. 1, MP provided a trade secret response which explained the Company's Generation costs and showed the three-year average being greater when compared to the 2023 forecast largely due to expected cost to a major class of fuel and related transport costs.[5]

In response to Department IR No. 12, MP stated that forecasted 2023 wind curtailment costs are minimal and were not included in the 2023 Fuel Forecast.

Overall, based on the additional information Minnesota Power provided, the Department considers Minnesota Power's 2023 fuel forecast reasonable and recommended approval of Minnesota Power's 2023 Fuel and Purchased Energy Forecast for setting initial FCA rates in this proceeding, subject to a true-up.

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[4] Department Comments at 8.

[5] Department Comments Attachment 3 at 5.

3. Forecasted Company-Owned Generation by Fuel Type and Location

The Department asked MP to provide Company-owned generation costs, by facility, for 2019 – 2021, a three-year average of 2019-2021, and the 2023 forecast. Table 7 summarizes that information.

Table 7 - Company-Owned Generation – 2019-2021 Actual and 2018-2020 Three-Year Average Compared to 2023Forecast

	2019 Actuals	2020 Actuals	2021 Actuals	2019-2021 Three Year Average	2023 Forecast
Coal-Boswell 3	32,447,426	31,525,708	46,778,306	36917147	$62,104,926
Coal-Boswell 4	53,693,916	43,172,017	53,449,013	50104982	$80,020,521
Gas-Laskin 1	597,966	295,310	3,542,131	1478469	$ 314,420
Gas-Laskin 2	350,696	289,307	3,287,399	1309134	$314,420
Biofuel-Hibbard	1,019,178	1008837	4,260,102	2096039	$5,605,217
Wind-Bison	0	0	0	0	$0
Wind-Taconite Ridge	0	0	0	0	$0
Hydro	0	0	0	0	0.00
Total Company-Owned Generation	88,109,182	76,291,179	111,316,951	91,905,771	148,359,504
Total Company-Owned Generation ($/MWh)	**[Trade Secret Data Has Been Excised]**				

Based on its review, the Department noted that, except for higher coal costs, the Company's 2023 forecast is consistent with the Company's 2021 actuals. The Department considered Minnesota Power's 2023 owned generation forecast reasonable for the purposes of setting initial FCA rates in this proceeding, subject to the subsequent true-up.

4. Purchased Energy – Long-Term PPA

Minnesota Power forecasted purchased energy costs of $224,480,219 for 2023. Table 8 compares purchased energy for 2019 – 2021 and the 2019-2021 three-year average to the 2023 forecast.

Table 8 - Company-Owned Generation – 2019-2021 Actual and 2019-2021 Three-Year Average Compared to 2023 Forecast

Purchased Energy	2019 Actuals	2020 Actuals	2021 Actuals	2019-2021 Average	2023 Forecast
Coal - Square Butte	31,164,341	30,559,753	33,604,104	31,776,066	36,856,900
Hydro – MHEB	15,917,909	81,808,261	102,549,433	66,758,534	102,592,828
Gas – GREM -	528,087	12,458	-	180,182	-
Wind	10,540,053	15,267,492	27,678,338	17,828,628	30,428,960
Solar	1,654	70	1,367	1,030	2,711,324
Market	157,105,367	65,698,262	138,947,245	120,583,624	51,890,208
Total	215,257,411	193,346,296	302,780,487	237,128,064	224,480,220

Based on its review, the Department recommended that, subject to true-up, MP's Company owned generation costs for the 2023 fuel forecast be approved.

5. MISO Energy Market (MISO Day 2) and Ancillary Services Market (ASM)

As shown in Table 9, the Department summarized the Total Net MISO Charges (MISO Day 2 and ASM) included in Minnesota Power's 2023 Fuel and Purchased Energy Forecast. The table also provides the allocation of MISO charges between retail and municipal sales on a per-MWh basis.

Table 9: 2023 Forecasted Net MISO Charges

Total Net MISO Charges		
MISO Market Purchases		30,027,034
MISO Cost - other than energy		48,576,079
MISO Costs recovered through Inter-System Sales (Market Sales)		(11,039,265)
MISO Costs recovered through Inter-System Sales (Customer Sales)		(29,920,442)
MISO Market Sales		(56,706,435)
Net Total MISO Charges		(19,063,029)
Allocation of Net MISO Charges		
Retail Sales (in MWh)	7,651,503	(16,246,307)
Municipal Sales (in MWh)	1,326,588	(2,816,722)
Total FCA Sales	8,978,091	(19,063,029)

The Department concluded the Company's MISO Day 2 and ASM costs and revenues included in the 2023 forecast appeared reasonable. The Department recommended the Commission accept Minnesota Power's MISO Day 2 and ASM costs and revenues included in the 2023 forecast for the purpose of setting initial FCA rates in this proceeding, subject to a subsequent true-up.

6. Asset-Based Margins

The Department noted that asset-based sales margins are refunded to customers in the 2023 forecast and concluded that they appeared reasonable. Therefore, the Department recommended that, subject to subsequent true-up, Minnesota Power's asset-based margins be approved for the purpose of setting initial FCA rates in this proceeding.

7. Outage Costs

Table 10 compares the Company's 2023 forecast to actual incremental costs for planned outages in 2020 and 2021.

Table 10: Comparison of Forecast and Actual Planned Outage Incremental Costs

Incremental Costs	2020	2021
Forecasted	$3,441,487	($2,869,832)
Actual	($293,246)	$6,415,192
Difference	$3,734,733	($9,285,025)

After review, the Department concluded the main reason for differences between forecasted and actual Planned Outage incremental costs is the change in forecasted location marginal price (LMP) when comparing forecasted to actual incremental costs. The Department requested Minnesota Power address the differences between forecasted and actual Planned Outage incremental costs further in their reply comments.

Generally, the Department considered the information supportive to Minnesota Power's 2023 forecast for planned and forced outage costs. The Department recommended that, pending additional information provided by Minnesota Power in Reply Comments and subject to subsequent true-up, the Company's forecast for planned and forced outage costs be approved.

8. MISO Planning Resource Auction Revenue

The Department understands that capacity prices in PRA's are likely to remain elevated for the foreseeable future. As a result, the Department recommended that Minnesota Power provide in reply comments an estimate of PRA revenues and recalculated FCA/EAR rates, it expects to receive during its 2023 FCA forecast period which covers January 2023 through December of 2023.

In response to how Minnesota Power planned to return the PRA revenues to ratepayers, the Department included the following reply from Minnesota Power in response to an information request.[6]

> Now that asset-based margins and capacity revenues are allowed to be included in the FAC, anticipated revenues are included in the FAC forecast, and trued up to

[6] Department Comments, Attachment 11 at 3.

actuals when the annual FAC true up filing is completed. Capacity expenses are forecast during a rate case and included in base rates.

Thus, Minnesota Power has agreed to return the PRA revenues via the FCA true up and the only open issue being the amount to be returned.

C. Minnesota Power – Reply Comments

Minnesota Power revised its 2023 FPE forecast and provided the information that the Department requested. As a result of the known MISO PRA results, Minnesota Power included approximately $3.8 million of PRA revenue for the January through May 2023 time-period. In the June through December 2023 time-period, Minnesota Power assumed no open capacity position; therefore, no PRA revenue was included in the revised 2023 FPE Forecast.

Regarding the Planned Outage incremental costs, the Company stated, "the difference in the 2020 incremental costs is due to a major planned outage at Boswell Unit 4, which was originally planned for the spring of 2020, but was postponed until the spring of 2021."[7] The Company also noted decreased LMPs in 2020 due to the pandemic, which decreased the purchase price of replacement power. Minnesota Power noted the average forecasted purchase price for 2020 was $25.85 and actuals were $18.03 per MWh.

The Company noted increases in LMP in 2021 compared to its forecast. Minnesota Power stated that the actual average purchase price during outages in 2021 was $32.45, compared to the forecast of $19.98 per MWh.

D. Department Response to Reply Comments

1. Revised 2023 FPE Forecast Update

The Department noted that MP's forecasted FPE costs increased over 10 percent from $265,752,178 in the original forecast to $294,446,791 in the revised forecast. Table 11 provides a comparison between the original and revised forecasts.

[7] Minnesota Power Reply Comments at 6.

Table 11: Forecasted Fuel Cost Summary

2023 Forecasted Fuel	Original Forecast	Revised Forecast	Percent Change
MP's Generating Stations	$148,359,504	$160,055,752	7.88%
Plus: Purchased Energy	$224,480,219	$212,741,108	-5.23%
Plus: MISO Charges (energy not included)	$48,576,079	$84,170,517	73.28%
Less: MISO Schedules 16, 17, & 24	$ (289,240)	$ (261,937)	-9.44%
Less: Cost Recovered through Inter system Sales	$154,774,719	$161,604,379	4.41%
Less: Costs Related to Solar	$2,522,315	$2,522,315	0.00%
Plus: Time of Generation and Solar Energy Adjustment	$1,344,170	$1,344,170	0.00%
Total Cost of Fuel	$265,752,178	$294,446,791	10.80%
Total Fuel Clause Sales (GWh)	8,978.10	8,815.40	-1.81%
Average Cost of Fuel (¢/MWh)	2.96	3.35	13.10%

The Department noted that, when compared to the original forecast, MISO Charges increased over 73 percent in the Company's revised forecast. Additionally, the Company's generating stations increased almost 8 percent in the revised forecast compared to the original forecast, although offset by the 5 percent decrease in purchased energy.

The Company's revised 2023 forecast also shows a decrease in forecasted total fuel clause sales. The increase in forecasted fuel costs discussed above and the slight decrease in forecasted fuel clause sales results in an overall increase in average cost of fuel of 13 percent. The Company's average cost of fuel in 2021 was 3.459 (₵/kWh) and the 2019-2021 average was 2.777 (₵/kWh). Table 12 compares the Company's original and revised sales forecasts.

Table 12: Sales Forecast Summary

	Original Forecast	Revised Forecast	Percent Change
Total Sales of Electricity	**13,594,358**	**13,212,639**	-2.81%
Residential	1,036,816	1,043,077	0.60%
Commercial	1,195,779	1,232,760	3.09%
LP Taconite	4,231,901	4,042,289	-4.48%
LP Paper and Pulp	600,104	600,104	0.00%
LP Pipeline	309,481	309,481	0.00%
Other Misc.	334,745	333,726	-0.30%
Municipals	1,326,588	1,311,330	-1.15%
Inter System Sales	4,558,944	4,339,872	-4.81%
Less: Inter System Sales	**4,558,944**	**4,339,871**	-4.81%
Customer Inter System Sales	844,414	755,606	-10.52%
Market Sales	3,712,057	3,581,792	-3.51%
Station Generation Service	2,473	2,473	0.00%
Sales due to Retail Loss of Load	0	0	-
Less: Solar Generation & Purchases	**57,323**	**57,323**	0.00%
Total Fuel Clause Sales	**8,978,091**	**8,815,445**	-1.81%

2. 2023 Forecast for Planned and Forced Outage Costs

In its Reply Comments, the Minnesota Power stated, "the difference in the 2020 incremental costs is due to a major planned outage at Boswell Unit 4, which was originally planned for the spring of 2020, but was postponed until the spring of 2021." The Company also noted decreased LMPs in 2020 due to the pandemic, which decreased the purchase price of replacement power. The average forecasted purchase price for 2020 was $25.85 and actuals were $18.03 per MWh.

The Company noted increases in LMP in 2021 compared to its forecast. The actual average purchase price during outages in 2021 was $32.45, compared to the forecast of $19.98 per MWh.

The Department considered Minnesota Power's response to be reasonable and does not have further questions at this time regarding the Company's explanation regarding the difference between forecasted and actual planned outage incremental costs.

3. Planning Resource Auction Revenues – January 2023 through December 2023

In its Comments, the Department noted the importance of returning planning resource auction (PRA) revenues to ratepayers who pay for capacity costs (utilities' plant costs and purchased capacity) through either base rates in rate cases or in FCAs.[8] The Department requested the Company provide an estimate of PRA revenues and recalculated FCA/PRA rates the Company expects to receive during its 2023 FCA Forecast period, covering January 2023 through December 2023.

In its Reply Comments, Minnesota Power provided its original 2023 FPE Forecast which included approximately $3.8 million of PRA revenue from January through May 2023, resulting from known MISO PRA results. Minnesota Power stated the Company assumed no open capacity position from June through December 2023 and therefore, it did not include PRA revenue in its revised 2023 FPE Forecast.

As a result, the Department recommended a $5.32 million ($9.12 million less $3.8 million) increase in PRA revenue for the 2023 FCA forecast. The Department noted Minnesota Power's available resources have not changed, and its overall sales forecast has decreased slightly, indicating the Company may be able to make similar capacity sales in the upcoming MISO capacity auction.

E. Large Power Intervenors – Response to Reply Comments

LPI stated that it supported the Department's proposed $5.32 million reduction to account for annualized PRA revenues. Specifically, LPI stated:

> Given that ratepayers are now forecasted to pay higher costs through the automatic adjustment process and are also facing the prospect of increased base rates as a result of Minnesota Power's pending rate case, mitigating the impact of the 2023 FPE rates is in the best interest of ratepayers. LPI, therefore, supports the Department's proposed $5.32 million reduction to account for annualized PRA revenues.

F. Minnesota Power - Response Letter

Minnesota Power disagreed with the Department's recommendation to reduce the 2023 FPE Forecast by $5.32 million in order to annualize the PRA revenue. Specifically, Minnesota Power stated:

> Minnesota Power's 2023 FPE Forecast submitted on August 31, 2022, was updated to include the known capacity position for January through May 2023 based on the 2022/2023 PRA results. However, there is additional uncertainty with the 2023/2024 PRA planning year due to the new seasonal construct and Seasonal Adjusted Capacity ("SAC") methodology for capacity resources approved by FERC on August 31, 2022, as well as uncertainty around whether the auction price will continue to clear as high as it did in the 2022/2023 auction. The Department's conclusion, without any record support, that future MISO capacity auction prices will continue to clear at similar high values does result in penalizing Minnesota Power. In addition, the Department assumes the Company's capacity

[8] Department Comments at 16.

obligation is similar to the 2022/2023 auction; however, this assumption does not take into account any change in Minnesota Power's capacity obligations.

As a compromise, Minnesota Power put forth an option to adjust the 2023 FPE Forecast in May 2023, when the 2023/2024 PRA for the June through December 2023 time period are known, so long as the results are a net revenue position and the overall outlook for 2023 does not result in an under-collection.

IV. Staff Comments

Neither the Department nor LPI have had an opportunity to respond to Minnesota Power's PRA compromise as it was offered after the Department and LPI filed their respective response comments. The Commission may wish to discuss the issue at the December 1st agenda meeting.

V. Decision Alternatives

Forecasted Sales and Fuel Costs

1. Authorize Minnesota Power to implement its Revised 2023 FCA forecast, based on forecasted sales of 8,815,400 kWh and forecasted fuel costs of $294,446,791. (MP)

2. Require Minnesota Power to reduce its 2023 FCA forecast fuel costs by $5.32 million to reflect credits for Planning Resource Auction Revenues. (Department, LPI)

Compliance Filing

3. Require Minnesota Power to make a compliance filing with redlined and clean versions of the Fuel and Purchased Energy Rider Tariff sheet with supporting calculations, within 10 days of the date of the Commission's order in this docket for implementation effective January 1, 2023.

2023/2024 MISO Planning Resource Auction

4. Order Minnesota Power to file a revised 2023 forecast that incorporates 2023/2024 MISO Planning Resource Auction results once they are known. (MP)