MINNESOTA
PUBLIC UTILITIES COMMISSION

Staff Briefing Papers

Meeting Date	June 30, 2022		Agenda Item 5*
Company	Otter Tail Power Company (Otter Tail, OTP, Company)		
Docket No.	**E-017/AA-20-462** In the Matter of Otter Tail Power Company's Petition for Approval of the Annual Forecasted Rates for its Energy Adjustment Rider, Rate Schedule 13.01		
Issue	Should the Commission approve Otter Tail Power's 2021 Energy Adjustment Rider true-up?		
Staff	Jorge Alonso	jorge.alonso@state.mn.us	651-201-2258

✓ **Relevant Documents**	**Date**
Otter Tail Power – Compliance Filing (Public & Trade Secret)	March 1, 2022
Department of Commerce – Comments (Public & Trade Secret)	April 15, 2022

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I. Statement of the Issue

Should the Commission approve Otter Tail's 2021 annual fuel forecast?

II. Background

On March 1, 2022, Otter Tail filed its 2021 Annual True-Up for its Energy Adjustment Rider (EAR) seeking filing seeking recovery of $700,126. Due to the small adjustment amount, the Company's filing seeks recovery over a four-month period rather than the standard twelve months.

On April 15, 2022, the Minnesota Department of Commerce – Division of Energy Resources (Department, DOC) filed comments recommending approval of Otter Tail's 2021 EAR true-up petition (Petition).

III. Parties' Comments

A. Otter Tail Power – Initial Filing

Otter Tail stated that, on a system-wide basis, Otter Tail's actual EAR recoverable costs for 2021 were $103,470,069 as compared to Otter Tail's forecasted costs for 2021 of $102,058,949. Based on the ratio of Minnesota kWh sales subject to the EAR, to total system kWh sales subject to the EAR, Minnesota's share of 2021 system costs were $52,407,780. Total 2021 collections from customers were $50,869,898, resulting in an under-collection of $1,537,882. Pending refunds, as discussed below, reduce the under-collection amount to $700,126. Based on the amount, Otter Tail proposes to collect the 2021 under-recovery balance over a four-month period of September 1 through December 31, 2022, versus the twelve-month period as stated in Otter Tail's EAR Rate Schedule, Section 13.01, which states *"[t]he annual true-up shall be based . . . and shall be applied to the subsequent twelve months"*.

1. Key Results and Analysis Overview

Table 1 shows that the total 2021 actual cost per MWh was $21.68, or 3.8% higher than forecast. Total 2021 actual costs were $103,470,069, or 1.4% over forecast, and total system sales were 2.3% lower than forecast. Otter Tail's 3.8% increase in average cost per MWh was very modest relative to higher 2021 energy market prices, which saw on-peak Locational Marginal Pricing (LMP) nearly 76% higher than forecast, off-peak LMPs 65% higher than forecast, and the overall average cost of market purchases and PPAs 35% higher than forecast.

Table 1 – 2021 FCA Summary (Total System)[1]

	Actual	Forecast	Variance	Variance %
Average Cost Per MWh	$21.683	$20.891	$0.792	3.79%
MWh Sales Subject to COE	4,772,031	4,885,326	(113,295)	-2.32%
Total Cost (Fuel & Purchased Power)	$103,470,069	$102,058,949	$1,411,120	1.38%
Average On-Peak LMP Prices @ OTP.OTP	$45.06	$25.61	$19.44	75.89%
Average Off-Peak LMP Prices @ OTP.OTP	$30.74	$18.60	$12.14	65.30%
MWhs of PPAs and Market Purchases	2,108,120	2,437,416	(329,295)	-13.51%
Total Cost of PPAs and Market Purchases	$69,581,125	$59,381,149	$10,199,976	17.18%
Average Cost of PPAs and Market Purchases	$33.01	$24.36	$8.64	35.48%

2. 2021 Total Costs Significantly Lower than Forecast.

Table 2 summarizes OTP's actual 2021 monthly FCA costs compared to forecasted costs.

Table 2 – 2021 Monthly Fuel & Purchased Power Costs Forecast to Actual Comparison (Total System)

Month	Actual	Forecast	Variance
January	$8,984,775	$10,337,238	($1,352,463)
February	$12,259,410	$10,226,834	$2,032,576
March	$6,739,893	$9,211,654	($2,471,761)
April	$5,532,257	$7,462,119	($1,929,862)
May	$6,476,879	$6,999,051	($522,172)
June	$7,105,698	$7,066,700	$38,998
July	$8,473,293	$7,579,079	$894,214
August	$8,133,365	$8,148,288	($14,923)
September	$3,528,599	$7,253,963	($3,725,364)
October	$9,190,794	$7,783,731	$1,407,062
November	$14,991,200	$9,434,362	$5,556,838
December	$12,053,906	$10,555,929	$1,497,977
Total	$103,470,069	$102,058,949	$1,411,120

3. 2021 Sales Lower than Forecast

Otter Tail's 2021 FCA forecast was developed using the most current sales forecast available at the time of its May 1, 2020 initial filing. As shown in Table 3, overall 2021 actual kWh sales,

[1] Attachment 2 provides a summary of 2021 monthly forecast and actual results. Attachment 3 (Trade Secret) includes detailed monthly forecast-to-actual comparisons, with separate monthly variance analysis for total monthly costs, monthly MWhs, and monthly cost per MWh, as well as Total Year results for those same components.

when compared to forecasted sales, were down approximately 2.3%.[2] Otter Tail noted that COVID-19 continues to impact sales – Commercial and Industrial classes in particular. For 2021, Heating Degree Days (HDD) were 91.3% of normal and Cooling Degree Days (CDD) were 151.7% of normal.

Table 3 – 2021 Monthly kWh Sales Forecast to Actual Comparison (Total System)

Month	Actual	Forecast	Variance
January	482,448,774	504,002,585	(21,553,811)
February	461,377,536	459,589,495	1,788,041
March	446,527,559	445,814,270	713,289
April	409,647,973	391,417,295	18,230,678
May	351,240,674	361,884,646	(10,643,972)
June	363,865,633	350,972,019	12,893,614
July	368,366,138	372,305,370	(3,939,232)
August	387,057,252	368,879,307	18,177,945
September	349,232,882	349,884,199	(651,317)
October	319,965,945	368,214,974	(48,249,029)
November	382,935,886	428,949,066	(46,013,180)
December	449,364,382	483,412,694	(34,048,312)
Total	4,772,030,634	4,885,325,922	(113,295,288)

4. Comparison of Forecasted Rates to Actual Costs Per kWh

2021 actual average cost of fuel and purchased power was $0.021683/kWh compared to a forecast of $0.020891/kWh. Table 4 also summarizes the approved monthly forecasted fuel rate per kWh, the actual fuel costs per kWh and the variances.

Table 4 – Total FCA Cost Per kWh Forecast to Actual Comparison (Total System)

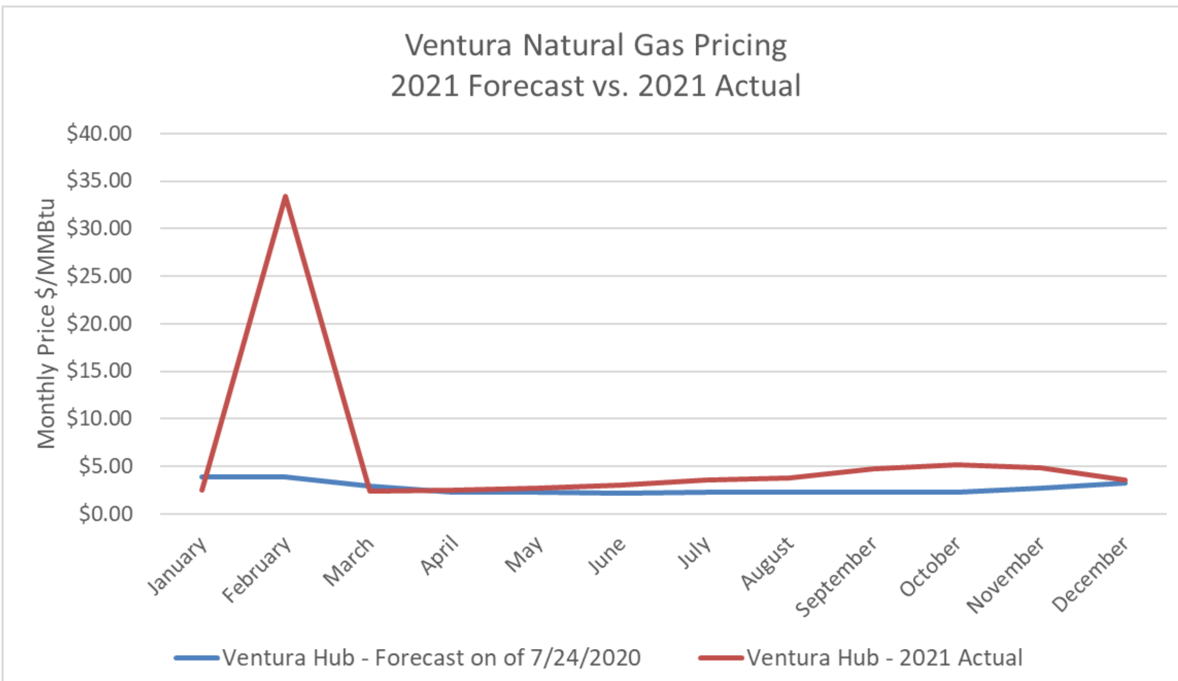
Month	Actual	Forecast	Variance
January	$0.018623	$0.020510	($0.001887)
February	$0.026571	$0.022252	$0.004319
March	$0.015094	$0.020663	($0.005569)
April	$0.013505	$0.019064	($0.005559)
May	$0.018440	$0.019341	($0.000901)
June	$0.019528	$0.020135	($0.000606)
July	$0.023002	$0.020357	$0.002645
August	$0.021013	$0.022089	($0.001076)
September	$0.010104	$0.020732	($0.010629)
October	$0.028724	$0.021139	$0.007585
November	$0.039148	$0.021994	$0.017154
December	$0.026824	$0.021836	$0.004988
Total	$0.021683	$0.020891	$0.000792

[2] 113,295,288/4,885,325,922 = 2.3%

5. 2021 Market Prices for Natural Gas and Energy Significantly Impacted Total Costs

a. Natural Gas Prices

Since natural gas generation facilities are often marginal units, or price setting units, natural gas pricing often drives Mid-Continent Independent System Operator (MISO) LMP. This was evident in 2021 as natural gas prices saw an abnormally high spike in February and prices continued to climb throughout the year with prices reaching the $5/MMBtu range in late Q3 and into Q4 of 2021. The graph below compares the 2021 actual average monthly Ventura Hub natural gas prices relative to the forecasted prices from July 24, 2020, that were used as key inputs in Otter Tail's FCA modeling to determine plant dispatch and associated market purchases included in Otter Tail's forecasted rates.

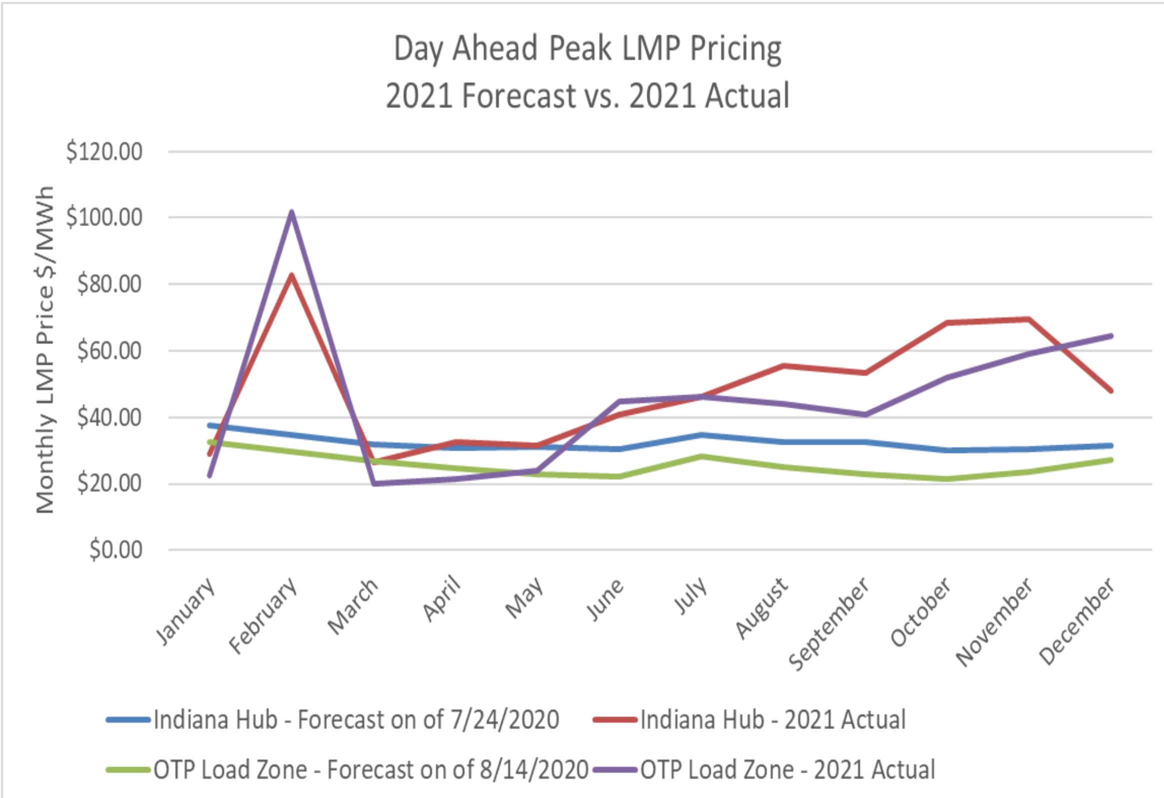


b. LMP Prices

Forecasted LMP prices are a key input in Otter Tail's Strategist model used to develop 2021 forecasted rates. The model uses those prices to estimate how generating resources will be dispatched based on their respective operating costs to meet forecasted load. When market prices are lower than the fuel costs to generate, the model assumes market purchases will meet load, just like the real market works.

Otter Tail's forecasted 2021 LMP prices for the Otter Tail load zone used daily forward Indiana Hub price curves published by Intercontinental Exchange, Inc (ICE) as modeling inputs. As the Indiana Hub actual pricing deviates from forecasted pricing, the Otter Tail load zone will similarly deviate. The 2021 Otter Tail Power forecast utilized the July 24, 2020 Indiana Hub forward price curve; however, actual 2021 Indiana Hub pricing was 25% higher. Similarly, compared to the forecasted July 24, 2020 Otter Tail load zone price curve, actual 2021 Otter

Tail load zone pricing increased by 33%. The increase in LMP pricing is believed to be caused in part by the higher natural gas pricing discussed earlier. The graph below illustrates the Indiana Hub and Otter Tail load zone curves, forecast vs actual.



6. Generation Output

Otter Tail's Strategist plant dispatch modeling is influenced by: (1) the amount of load to be served, which varies seasonally; (2) energy acquired from long term purchase power agreements (PPAs) or other forward purchases; and (3) forecasted LMP prices from which energy could be acquired from the market. Plant availability is another factor, as planned outages and estimated forced outage rates were also inputs into model. The model attempts to balance all these variables to achieve the lowest cost portfolio of resources to meet load and other market requirements.

a. Baseload Generation Utilization

Because market prices were lower in 2021, along with reduced loads, the actual dispatch of Otter Tail's baseload units and the associated MWh output was 13.3% lower than forecasted. Fuel costs were 10% lower as a result of the reduced output. Table 5 below summarizes actual baseload generation output and fuel costs for 2021 compared to forecast.

As shown in Table 5, actual 2021 baseload generation was 0.4% higher than forecast and associated fuel costs 0.77% higher. Included in 2021 fuel costs for Coyote Station was a settlement payment from an arbitrated dispute related to Coyote Station's mine-mouth coal supply contract with Dakota Westmoreland Corporation (DWC), which was terminated in 2016. The dispute concerned minimum delivery and fuel purchase quantities from 2014-2016.

DWC's insurers, along with DWC and its affiliated company Westmoreland Coal Company initiated the arbitration in late 2018 and parties settled the dispute in December 2021. Otter Tail's share of the settlement was 35% (its ownership percentage in Coyote Station).[3]

Table 5 – 2021 Baseload Generation Forecast to Actual Comparison (Total System)

Generating Unit	Actual MWhs	Forecast MWhs	Variance MWhs	Variance %
Big Stone Plant	891,987	846,107	45,880	5.4%
Coyote Station	860,799	914,974	(54,175)	-5.9%
Hoot Lake Plant Unit 2	74,967	75,084	(118)	-0.2%
Hoot Lake Plant Unit 3	49,941	34,488	15,453	44.8%
Total Baseload Generation -MWhs	1,877,694	1,870,654	7,040	0.4%
Total Baseload Fuel Costs	$41,891,976	$41,570,398	$321,578	0.77%

b. Operational Changes – Big Stone Plant, Coyote Station and Hoot Lake Plant

Otter Tail is a co-owner of Big Stone Plant (53.9%) along with Northwestern Energy (23.4%) and Montana-Dakota Utilities Co. (22.7%). Otter Tail is also a joint owner of Coyote Station (35%) along with Minnkota Power Cooperative (30%), Montana-Dakota Utilities Co. (25%) and Northwestern Energy (10%). Northwestern Energy's share of each plant is offered into the Southwest Power Pool (SPP) market, while Otter Tail and the rest of the joint owner's shares are part of the MISO market. Historically these plants have operated under a "must-run" status which means that the units are self-committed into the markets at a minimum level each day and, depending on market conditions, MISO and/or SPP can dispatch those plants if market and/or reliability conditions merit additional output. The respective co-owners have generally relied on these units to meet their respective daily customer loads.

In April of 2020, Big Stone's co-owners agreed to a plan that would allow, if conditions warranted, the capability to offer the plant into the MISO and SPP markets on an economic dispatch basis. While at any time, any co-owner can request their share of the unit be self-scheduled into the market, or if either SPP or MISO require the unit to run, all owners are required to take their minimum share of the plant as it is committed to their respective markets. There were periods during 2021 where the unit did operate under an economic dispatch status which kept the plant off-line. In those cases, loads were served through additional day ahead (DA) and real time (RT) market purchases or the dispatch of other lower priced generating units.

In April of 2021, Coyote Station's co-owners agreed to a plan that would allow, if conditions warranted, the capability to offer the plant into the MISO and SPP markets on an economic dispatch basis. Like Big Stone, any co-owner can, at any time, request their share of the unit be self-scheduled into the market, or if either SPP or MISO require the unit to run, all owners are required to take their minimum share of the plant as it is committed to their respective markets. During 2021 periods where the unit operated under an economic dispatch status that

[3] Otter Tail's share of the settlement amount is Trade Secret.

kept the plant off-line, loads were served through additional day ahead (DA) and real time (RT) market purchases or the dispatch of other lower priced generating units.

Hoot Lake Plant was generally offered into the market on an economic dispatch basis except for the winter months where one unit is committed to must run for purposes of providing building heat. Hoot Lake Plant operated until the end of May 2021 when the plant was retired.

c. Plant Availability[4]

Baseload generating plant availability remained high in 2021 for Otter Tail's primary baseload units. Big Stone Plant experienced just one forced outage in 2021 and Coyote Station had four, all related to various tube leaks. Big Stone plant had a major overhauls/extended maintenance outage in 2018 and Coyote Station had one in 2019.

Hoot Lake Plant units 2 and 3 both experienced a higher number of forced outages during 2021. Most of these forced outages were the result of tube leaks. Because Hoot Lake Plant is scheduled for retirement in the spring of 2021, maintenance levels are performed or adjusted to take into account the pending retirement and limited remaining life of the plant.

In 2021, Big Stone experienced four forced outages, the lengthiest outage coming from an extension of the planned 8-week major overall outage that started in mid-September. During planned outage, a routine inspection of the HP/IP turbine revealed solid particle erosion in the first two stages of the IP turbine stationary blading; therefore, co-owners decided to repair the erosion during the outage. Solid particle erosion occurs when particles within a boiler or turbine inlet piping are swept up with the steam flow and then those particles impact on the components of the steam turbine. Given enough solid particles, turbine materials can be eroded away. Introduction of solid particles within a system can occur when that system is opened up for maintenance purposes. To protect the HP/IP turbine from future solid particle erosion, when the boiler reheater section was replaced during a 2015 planned outage, air blows of the replacement reheat sections and installation of temporary strainers upstream of the turbine were completed at the time. The solid particle erosion seen during the recent inspection is believed to be from finer particles that the temporary strainers were not able to stop. The period from November 11, 2021, to December 3, 2021, during which time the turbine blades were repaired, was deemed a forced outage.

Coyote Station had seven forced outages, related to tube leaks, a circulating pump failure, transformer oil leak, turbine balancing and a failed relay. Coyote Station also had four boiler washes in 2021.

Hoot Lake unit 2 experienced two forced outages for tube leaks. As of May 27, 2021, Hoot Lake units 2 and 3 had all usable coal emptied from bunkers and were placed in outage until their retirement at the end of May.

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[4] Attachment 13 (Trade Secret) provides a complete list of 2021 forced outages and the estimated change in energy costs attributable to those outages.

d. Wind Generation

Output from Otter Tail's owned wind generation fleet was 13.7% higher than forecast. As shown in Table 6, most of the generation variance was attributable to Merricourt. When Otter Tail developed its 2021 forecast, Otter Tail anticipated potential curtailments of Merricourt during its first year of operation due to other transmission interconnection projects being constructed in the region. During 2020, Otter Tail designed and obtained approval to implement a Remedial Action Scheme (RAS) to help mitigate potential outages. A RAS is a sophisticated relaying, protection and communication system that takes automatic action based on the real-time condition of the transmission system. Generators that are part of the RAS are allowed to operate at higher output levels during planned outages because the next contingency on the transmission system will automatically reduce the output of the generator to prevent transmission overloading and keep the system reliable. To Otter Tail's knowledge, its RAS service is the first of its type in the United States. As a result of the RAS, Otter Tail was able to operate Merricourt at higher levels during 2021 than originally anticipated, contributing a larger volume of zero cost MWhs to Otter Tail's overall generation supply in 2021.

Table 6 – 2021 OTP Owned Wind Generation Forecast to Actual Comparison (Total System)

	Actual MWhs	Forecast MWhs	Variance MWhs	Variance %
Langdon Wind	144,103	142,495	1,608	1.1%
Ashtabula Wind	139,379	151,385	(12,006)	-7.9%
Luverne Wind	174,859	176,281	(1,422)	-0.8%
Merricourt Wind	501,570	374,207	127,363	34.0%
Total Wind	959,910	844,368	115,542	13.7%

7. Gas and Oil Peaking Units, Hydro and Solar Generation

A small percentage of Otter Tail's generation comes from a natural gas peaking units at Solway, MN and Otter Tail's new Astoria Station unit at Astoria, SD; several small oil peaking plants, as well as a small amount of hydro and small-scale solar generating facilities. In 2021, despite higher gas prices, both Solway plant and Astoria Station were dispatched at slightly higher levels than forecasted. These units are dispatched by MISO as needed to meet load needs in their respective geographic areas.[5]

8. Market Purchases and Purchased Power Agreements

As part of our overall resource portfolio to serve its load, Otter Tail has three long-term wind Purchased Power Agreements (PPAs). Additional energy is procured through shared service agreements and small cog-gen agreements. The majority of Otter Tail's purchased power comes through purchases in the MISO DA and RT markets, and certain forward bilateral energy purchases executed to hedge market price volatility during periods of peak load or when generating units are unavailable due to major planned outages. During the February Polar

[5] Detailed forecast to actual results for all these plants can be found in (Trade Secret) Attachment 3.

Vortex, Otter Tail had in place a forward purchase which significantly reduced Otter Tail's exposure.[6]

As shown in Table 7, for 2021, Otter Tail's wind PPAs were 6.3% less than forecasted levels. Additionally, shared load agreements and small co-gen agreements saw a slight output increase relative to forecast. As discussed earlier, 2021 market prices were significantly higher than what Otter Tail had forecasted when rates were set; therefore, OTP's plants were dispatched at higher levels and reduced the volume of market purchases. Total bilateral and market-based purchases were 16% lower forecasted in 2021. As a portfolio, overall purchased power was 13.5% lower than forecasted. Despite the decreased volume, purchased power costs were $10.2 million higher than forecasted. The average cost was $33.01/MWh compared to the forecasted average cost of $24.36/MWh.

Table 7 – 2021 Purchased Power Summary Forecast to Actual Comparison (Total System)

	Actual	Forecast	Variance	Variance %
Wind PPAs - MWhs	308,450	329,214	(20,764)	-6.3%
Shared Loads/Small Cogen - MWhs	145,109	132,311	12,799	9.7%
Bilateral and MISO Market Purchases – MWhs	1,654,880	1,975,892	(321,012)	-16.3%
Total Purchases - MWhs	2,108,439	2,437,417	(328,978)	-13.5%
Total Purchases - Cost	$69,581,125	$59,381,149	$10,199,976	17.2%
Average Cost per MWh	$33.00	$24.36	$8.64	35.5%

9. MISO and SPP Wholesale Market Charges[7]

As a participant in the MISO and the SPP energy markets, wholesale market charges consist of numerous charges and credits Otter Tail is subjected to. This subset of wholesale market charges/credits does not include the primary charges/credits associated with the injection (generation) and the withdrawal (load) of energy, as these charges are captured in the purchased power category of costs described above. Nearly 70 different MISO and SPP wholesale market charge types are currently assessed to Otter Tail.

Table 8 summarizes 2021 MISO and SPP Market Charges which, in aggregate, were forecasted to be an expense of approximately $1.3 million, but resulted in a revenue credit of approximately $9.6 million. The largest variance occurred in the MISO market where FTR hourly allocation and FTR auction revenue rights amount variances yielded the largest favorable variances which offset smaller unfavorable DA and RT congestion and loss amount variances.

[6] Reduction amount is trade secret.

[7] Detailed forecast to actual comparisons of all charge-types for both MISO and SPP can be found in Attachment 3 (Trade Secret)

Table 8 – 2021 MISO and SPP Wholesales Market Charges Forecast to Actual Comparison Expense (Revenue), (Total System)

	Actual	Forecast	Variance	Variance %
MISO Market Charges	($7,233,575)	$2,274,525	($9,508,100)	-418.03%
SPP Market Charges	($2,391,957)	($969,957)	($1,422,000)	146.60%
Total Market Charges	($9,625,532)	$1,304,569	($10,930,100)	-837.83%

10. Asset Based Sales

As shown on Table 9, Otter Tail's forecasted 2021 fuel costs projected a very small amount of asset-based sales. Plant availability, market prices and load levels can all have an impact on when plants are dispatched to a point where units are net sellers into the market. For 2021, Otter Tail realized approximately $15.6 million of asset-based sales that offset fuel costs and provided a margin, all of which is credited back to customers through the fuel clause. Table 9 compares the 2021 asset-based forecast to actual results.

Table 9 – 2021 Asset Based Sales Forecast to Actual Comparison Expense (Revenue), (Total System)

	Actual	Forecast	Variance	Variance %
Fuel Costs of Asset Based Sales	($11,469,286)	($2,602,005)	($8,867,281)	340.8%
Margin on Asset Based Sales	($4,119,910)	($1,829,504)	($2,290,406)	125.2%
Total Asset Based Sales	($15,589,196)	($4,431,509)	($11,157,688)	251.8%

11. ASM, Wind Curtailments

At times, Otter Tail's generating resources are called upon to provide ancillary services into the MISO market, for which it receives a revenue stream. Additionally, if the facilities are shut down due to negative LMP prices, certain provisions within Otter Tail's wind PPAs call for curtailment payments to be made. As shown in Table 10, these revenues and costs are a small component of the overall FCA costs and their 2021 impacts were not material.

Table 10 – 2021 Ancillary Services Market and Wind Curtailment Costs, Forecast to Actual Comparison (Total System)

	Actual	Forecast	Variance	Variance %
MISO Ancillary Services Market	($293,829)	($560,492)	$266,663	-47.6%
Wind Curtailment	$112,524	$337,570	($225,046)	-66.7%

12. True-Up Balance as of December 31, 2021[8]

As shown in Table 11, 2021 total collections based on approved rates were $50.9 million resulting in a $1.5 million under-collection. Otter Tail also estimates that approximately $837,755 will still need to be refunded for prior periods and has proposed to include that

[8] Attachment 1 provides the monthly detail of total system sales, total system FCA costs, monthly recovery of costs and remaining true-up balances.

balance in this true-up. This would result in a net 2021 true-up recovery of $700,126 which OTP has proposed to recover over the fours month period of September to December 2022.

Table 11 – 2021 Annual True-Up Rate, MN Jurisdiction

Item	Amount
Total 2021 recovery from forecasted EAR and base rates before refunds	$50,869,898
Actual 2021 energy costs (MN Share)	$52,407,780
Over/(Under) Recovery	($1,537,882)
Estimated True-up balance from 2018/2019 yet to be refunded	$209,826
Estimated True-up balance from 2020 yet to be refunded	$1,673,516
Amount refunded during September 1 - December 31, 2021	($1,045,587)
Total Net Remaining True-up Over/(Under) Recovery	($700,126)

13. Annual Compliance/Reporting Requirements

Otter Tail provided information attesting to their compliance to the following Minn. Rules:

- 7825.2810 Annual Report of Automatic Adjustment Charges
- 7825.2820 Annual Auditor's Report
- 7825.2830 Annual Five-Year Projection
- 7825.2840 Annual Notice of Reports Availability
- Other items in compliance with various Commission Orders in various dockets.

B. Department of Commerce – Comments

The Department noted that the stated purpose of Otter Tail's Petition is to: (1) demonstrate that the Company's 2021 fuel/purchased power costs were reasonable and prudent, (2) request approval of the Company's 2021 FCA true-up and the resulting proposed true-up surcharge factor of $0.0008 per kWh, to be applied to sales subject to the EAR/FCA over the period of September 1, 2021 – December 31, 2021, and (3) request approval of the EAR/FCA true-up compliance reporting required by Minnesota Rules 7825.2800 – 7825.2840 and applicable Commission orders.

1. Prudency and Reasonableness of Otter Tail's Actual 2021 Fuel/Purchased Power Costs

The Department noted that Otter Tail's actual 2021 fuel/purchased power costs were slightly higher than the forecasted/approved costs.

As shown in Table 1 above, Otter Tail's 2021 MWh actual sales were 2.32% lower than forecasted; however, 2021 total system actual fuel/purchased power costs recoverable through the EAR/FCA were 1.38% higher than forecasted. Of the $103,470,069 total actual 2021 fuel/purchased power costs, $52,407,780 were allocated to Minnesota.

As summarized in Table 12, actual and forecasted 2021 fuel/purchased power costs and offsetting credits/revenues can be broken into several major categories.

Table 12 – Otter Tail's Actual and Forecasted Total Company 2021 Fuel/Purchased Power Costs and Offsetting Credits/Revenues by Major Category

	2021 Actual	2021 Forecast	Percentage Difference
Plant Generation Costs	$59,326,596	$45,986,045	29.0%
Purchased Power Costs	$69,581,124	$59,381,149	17.2%
Wholesale Market Costs/(Credits)	($9,625,532)	$1,304,568	-837.8%
Wind Curtailment Costs	$337,570	$112,524	200.0%
Credit for Fuel Costs of Asset-Based Sales	($11,469,286)	($2,602,005)	340.7%
Revenue Margin on Asset-Based Sales	($4,119,910)	($1,829,504)	125.2%
MISO Ancillary Services Market Revenue	($560,492)	($293,829)	90.7%
Total Costs, Net Credits and Revenue	**$103,470,070**	**$102,058,948**	**1.4%**

Table 12 shows that actual 2021 plant generation and purchased power costs, the two largest components of the Company's total net fuel/purchased power costs, were substantially greater than forecasted. Otter Tail provided data in its Petition showing that average actual on-peak and off-peak LMP for 2021 were, respectively, 75.9% and 65.3% higher than predicted.

For 2021, Otter Tail experienced lower energy sales and higher energy costs all of which contributed to the Company's actual 2021 fuel/purchased power costs slightly higher than forecasted. Based on Otter Tail's actual experience in 2021, the Department concluded that it is reasonable that the Company's actual 2021 fuel/purchased costs recoverable through the EAR/FCA were more than those forecasted.

2. Otter Tail's 2021 Fuel Clause Adjustment True-Up

Table 13 shows how Otter Tail arrived at the proposed refund amount and true-up credit factor.

Table 13 – Otter Tail's 2021 Fuel Clause Adjustment True-Up and Refund Amount

True-Up Component	Amount
Recovery from Fuel Clause Adjustment/Energy Adjustment Rider	$46,428,469
Recovery through Base Cost	$4,441,429
Total Recovery	$50,869,898
Actual Cost of Energy Allocable to Minnesota	$52,407,780
Over or (Under) Recovery	($1,537,882)
Estimated Remaining Amount to be Refunded for the Previously Approved 2020 True-Up	$837,755
Proposed Refund to Customers	($700,127)
Forecasted Applicable kWh Sales for September 2022 - December 2022	912,901,078
Proposed True-Up Credit Factor (Surcharge)	($0.0008)

The Department confirmed that Otter Tail's 2021 EAR/FCA true-up calculation:

- Was based on a historical twelve-month period (January 1 – December 31, 2021).
- Compared the actual and approved forecasted costs and credits/revenues to arrive at the under-recovered amount.
- Divided the over-recovered amount by the forecasted Minnesota kWh subject to the EAR/FCA (forecasted kWh for the proposed twelve-month period during which the true-up factor would be applied, September 2022 – December 2022) to arrive at the true-up factor per kWh.

The Department concluded that Otter Tail correctly calculated its 2021 EAR/FCA true-up and that the proposed true-up charge amount, with a corresponding true-up charge factor effective on September 1, 2022, is reasonable and be approved. The DOC stated that it has no strong opposition to the Company's proposal to collect the EAR/FCA refund over a four-month period (September 1 through December 31, 2022) but noted that it only agrees to the deviation from the 12-month standard because the amount is small and will; therefore, not impose a hardship upon ratepayers.

3. Compliance with Reporting Requirements

The Department verified that the instant Petition included the information required per the following:

- Minnesota Rules 7825.2800 - 7825.2840, as revised on pages 3 - 4 and approved in Point 1 of the Commission's June 12, 2019 Order in Docket No. E999/CI-03-802.
- Annual FCA true-up general reporting guidelines, as outlined on page 7 and approved in Point 5 of the Commission's June 12, 2019 Order in Docket No. E999/CI-03-802.

- Annual FCA true-up reporting compliance matrix specific to Otter Tail, as shown in Attachment 2 of the March 1, 2019 joint comments and approved in Point 7 of the Commission's June 12, 2019 Order in Docket No. E999/CI-03-802.

The Department concluded that the Petition complied with the applicable reporting requirements and recommended the Petition's compliance reporting portions be approved.

4. Maintenance Expenses of Generation Plants and Correlation to Incremental Forced Outage Costs

In its February 6, 2008 Order,[9] the Commission required all electric utilities subject to automatic adjustment filing requirements, with the exception of Dakota Electric, to include in future annual automatic adjustment filings the actual expenses pertaining to maintenance of generation plants, with a comparison to the generation maintenance budget from the utility's most recent rate case. This requirement stemmed from the drastic increase in Investor-Owned Utilities' (IOUs) outage costs during fiscal years 2006 and 2007. When a generation plant experiences a forced outage, the utility must replace the megawatt hours that plant would have otherwise produced. The utility typically replaces these lost megawatt hours through wholesale market purchases. The cost of those market purchases flows directly to ratepayers through the EAR/FCA. The high outage costs incurred by investor-owned utilities in fiscal years 2006 and 2007 raised questions as to whether the utilities were (1) maintaining plants appropriately to prevent forced outages and (2) spending as much on plant maintenance as they were charging to their customers in base rates. The Commission agreed with the Department and the Large Power Interveners that "utilities have a duty to minimize unplanned facility outages through adequate maintenance and to minimize the costs of scheduled outages through careful planning, prudent timing, and efficient completion of scheduled work."[10]

Table 14 summarizes Otter Tail's generation maintenance expenses for select years and shows that Otter Tail's average generation maintenance expenses for 2019 - 2020 was approximately 10% lower than the $21.8 million provided for in the Company's base rates.

Table 14 – Comparison of Otter Tail's Generation Maintenance Expense ($ Millions)

Approved Annual Generation Maintenance Expense per 2021 Rate Case Test Year	Actual Average 2019 – 2020 Generation Maintenance Expense	Difference
$21.8	$19.6	-10%

One important driver of a utility's generation maintenance expenses is the utility's level of forced outages. The Department concluded that the Company's replacement power costs

[9] ORDER ACTING ON ELECTRIC UTILITIES' ANNUAL REPORTS, REQUIRING FURTHER FILINGS, AND AMENDING ORDER OF DECEMBER 20, 2006 ON PASSING MISO DAY 2 COSTS THROUGH FUEL CLAUSE, In the Matter of the Review of the 2005 AAA of Charges for all Electric Utilities, Docket No. E-999/AA-06-1208 (February 6, 2008) p. 9, ordering paragraph 18

[10] Commission's February 6, 2008 Order in Docket No. E-999/AA-06-1208, page 5.

corresponding to the 2021 generation forced outages were reasonable under the circumstances.

Because (1) the amount of generation maintenance expense is linked to a utility's forced outages, (2) utilities have an incentive to minimize generation maintenance expense between rate cases, and (3) utilities do not have a strong incentive to minimize the replacement power costs for which they receive flow through recovery, the Department intends to continue to monitor the difference between investor-owned utilities' actual and approved generation maintenance expenses in future FCA true-up filings.

5. Conclusion and Recommendations

Based on its review, the Department concluded that: (1) Otter Tail's actual fuel/purchased power costs for 2021 were reasonable and prudent, (2) Otter Tail correctly calculated its 2021 true-up amount and the resulting under-collection amount of $700,126 is reasonable, and (3) Otter Tail's Petition complies with the applicable reporting requirements. Therefore, the Department recommended that the Commission take the following actions:

- Find that Otter Tail's actual 2021 fuel/purchased power costs recoverable through the EAR/FCA were reasonable and prudent for 2021.
- Approve Otter Tail's EAR/FCA 2021 true-up and the resulting under-recovery amount of $700,126 and charge of $0.0008.
- Allow Otter Tail to collect the $700,126 true-up under-recovery over a four-month period, from September 1 through December 31, 2022. The Department does not object to this deviation from the twelve-month standard, because the under-recovery amount is small enough that a shorter recovery period would not result in ratepayer harm or rate shock.
- Approve the compliance reporting portions of the Otter Tail's Petition.

IV. Staff Comments

Staff has reviewed and verified Otter Tail's calculations and concurs with the Company and the Department's recommendation that Otter Tail's Petition should be approved. Staff also agrees with the Department's conclusion that, due to small surcharge amount, Otter Tail's proposal to collect the true-up amount over a four-month period will not result in ratepayer harm or rate shock.

V. Decision Alternatives

Energy Adjustment Rider True-Up Compliance Filing

1. Accept and approve Otter Tail's 2021 energy adjustment rider true-up compliance filing. (OTP, DOC)

2. Do not accept and approve Otter Tail's 2021 energy adjustment rider true-up compliance filing.

True-Up Amount

3. Authorize Otter Tail to recover the net 2021 under-collection of $700,126. (OTP, DOC)

Timing of True-Up

4. Authorize Otter Tail to recover the 2021 under-collection over a four-month period starting on September 1, 2021. (OTP, DOC did not object)

5. Authorize Otter Tail to refund the 2021 under-collection over the standard twelve-month period.