STATE OF MINNESOTA
PUBLIC UTILITIES COMMISSION

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July 23, 2020

In the Matter of an Investigation into Self-Commitment and Self-Scheduling of Large Baseload Generation Facilities — **Docket No. E999/CI-19-704**

RESPONSE COMMENTS OF FRESH ENERGY

Fresh Energy submits these comments in response to the questions posed in the Commission's June 10, 2020 *Notice of Extended Reply and Response Comment Period* and to other parties' *Reply Comments*.

1. Are the March 1, 2020 filings by the utilities adequate?

We are satisfied that Xcel Energy (Xcel) and Otter Tail Power (OTP) submitted adequate filings but agree with the Department of Commerce ("the Department") that more clarity and comparability across utilities and reporting years would be useful. Accordingly, we support the Department's recommendation in *Initial Comments* "that the Commission require the utilities to file a compliance filing within 30 days of the Commission's order containing an Excel spreadsheet of the required data, with formulas intact, that the utilities will fill out for each unit in future filings, including clear definitions of the inputs."[1] **(Recommendation 1)**

The Department identified three questions for the Commission to consider regarding the content of this compliance filing and future Annual Reports in this docket:

a) Whether a breakdown into unit fuel cost and unit variable O&M cost is necessary or if only a total variable cost is necessary;
b) Whether ancillary services revenues should be included in the overall calculation of hourly net benefit / (cost); and

[1] Department of Commerce, *Initial Comments* filed June 8, 2020 in Docket 19-704, p. 16 (link)

c) Whether data regarding unavoidable self-commitment should be added to the utilities' filings in the future.

Fresh Energy recommends that the 30-day compliance filings and future Annual Reports in this docket address these questions as follows:

a) Utilities should report on net benefit / (cost) using total production cost and include both unit fuel cost and unit variable O&M cost in their workpapers. Having these cost components broken out continues to be useful to Fresh Energy and other stakeholders in identifying potential data inconsistencies and comparing unit performance.
b) Ancillary service market (ASM) revenues should not be required components of the overall calculation of hourly net benefit / (cost). Based on the data Fresh Energy has reviewed covering 2016-2019, ASM revenues are roughly 1% of total MISO revenue and are unlikely to significantly alter the cost-benefit analysis or the determination of how to structure a unit commitment plan. However, utilities should be free to report ASM revenues and discuss their relevance to the analysis as appropriate.
c) Utilities should include data for "unavoidable must run hours" in their reports and workpapers. Our understanding is that only Xcel has excluded this data from their reports. For consistency across units, Fresh Energy recommends that all utilities use the same set of hours. If the data includes "unavoidable must run hours" utilities should identify these hours and the reason for self-commitment in workpapers.

(Recommendation 1)

Minnesota Power (MP) failed to provide the analysis required by the Commission's November 13, 2019 *Order Accepting 2017-2018 Electric Reports and Setting Additional Requirements ("Order")*,[2] to evaluate the potential for economic and/or seasonal commitment at its Boswell coal fired power plant either in their March 1 *Initial Filing* or in *Reply Comments*. It is unacceptable that MP continue delaying this analysis, avoiding scrutiny from the Commission, and deferring action to address its practice of year-round self-commitment.

Accordingly, Fresh Energy recommends that MP adjust commitment strategy at Boswell to an economic commitment-based strategy[3] by this fall, when likely lower prices would enable significant customer savings. This recommendation is discussed in more detail under Fresh Energy's response to question 5.

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[2] Minnesota Public Utilities Commission, *Order Accepting 2017-2018 Electric Reports and Setting Additional Requirements* filed November 13, 2019 in Docket 18-373, Order Point 8 (link)

[3] Fresh Energy understands that until there is a multi-day market, exclusively using economic commitment for every day of the year may not always result in the overall most efficient or lowest-cost outcome. We are advocating for an "economic commitment-based strategy" that employs economic commitment as the default but may use self-commitment to bridge short periods of low prices. While market prices are dynamic, modern forecasting, including MISO's recently established Multi-Day Operating Margin Forecast, and modeling tools are widely available that enable utilities to make informed decisions for their commitment strategy.

2. What conclusions can be drawn from the data filed by the utilities on March 1, 2020 in conjunction with what has been learned earlier in this investigation?

Fresh Energy believes the question this proceeding is intended to address is not whether plants can make money while using self-commitment under certain circumstances, or whether these coal units have had positive net annual revenue in the past. The question is, could customers pay less for electricity if these unit(s) utilized economic commitment? There is clear evidence in this record that the answer is yes.

Fresh Energy appreciates the thorough analysis done by the Department and Sierra Club in this proceeding. While the Department, Sierra Club, and Fresh Energy evaluated the utilities' March 1, 2020 Annual Reports with somewhat different methodologies and timeframes, several conclusions are consistent across the board:

- Self-committed units operate at a loss for a significant portion of the year; and
- Periods of sustained losses could be avoided or minimized with a different unit commitment strategy.

The Department found that from July 2018-December 2019, fully 39.3% of dispatched capacity from these coal units was uneconomic.[4] The Department examined several units on a rolling week-long basis, and found that for Boswell 3, Boswell 4, and Big Stone "total benefit / (cost) hovered near zero for an extended duration"[5] and that "occasionally the King and Sherco units operated at a sizable net cost over a 1 week duration."[6]

Similarly, Sierra Club found that Boswell 3 and 4, Big Stone and Coyote were uneconomically dispatched in a significant portion of hours across the three years examined (2017-2019), ranging from 30-58% for Boswell,[7] 46-76% for Big Stone, and 45-73% for Coyote.[8,9] Sierra Club also identified over the three years 2017-2019: [MP TS] [redacted] [MP TS] periods of potentially avoidable losses at Boswell 3 and 4, for which losses exceeded [MP TS] [redacted] [MP TS][10] and [OTP TS] [redacted] [OTP TS] periods of potentially avoidable losses at Big Stone and Coyote, for which losses exceeded [OTP TS] [redacted] [OTP TS].

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[4] Department of Commerce, *Initial Comments* filed June 8, 2020 in Docket 19-704, p. 6 (link)
[5] *Id*, pp. 15 and 21
[6] *Id*, p. 34
[7] Sierra Club, *Initial Comments: Minnesota Power 2020 Annual Compliance Filing,* filed June 8, 2020 in Docket 19-704, p. 12 (link)
[8] This Coyote analysis considered all fuel costs as variable.
[9] Sierra Club, *Initial Comments: Otter Tail Power 2020 Annual Compliance Filing,* filed June 8, 2020 in Docket 19-704, p. 24 (link)
[10] Sierra Club, *Initial Comments: Minnesota Power 2020 Annual Compliance Filing,* filed June 8, 2020 in Docket 19-704, p. 14 (link)

Fresh Energy's analysis found that all units had several months in 2019 with negative or extremely low revenue: Boswell 3 and 4 had [MP TS] [redacted] [MP TS] such months, respectively, Big Stone and Coyote had [OTP TS] [redacted] [OTP TS] such months respectively, and Sherco 3 had [Xcel TS] [redacted] [Xcel TS] such months.[12] Fresh Energy conducted a more granular analysis of the Boswell units, which revealed 26 periods at Boswell 3 and 33 periods at Boswell 4 when the units sustained losses for at least two days in a row. Combined, these 59 periods had a net cost to customers of $2,733,150.[13]

The rigorous analysis provided by these three parties clearly demonstrates that self-committed units are incurring sizable losses, and more importantly, that unit revenues could be increased by altering commitment strategies to use economic commitment. As discussed earlier, Fresh Energy is not advocating for *exclusively* using economic commitment at this time, but for an "economic commitment-based strategy" that employs economic commitment as the default but may use self-commitment to bridge short periods of low prices, similar to what Otter Tail and Xcel are already doing with some of their units. The record supports the conclusion that such a strategy is significantly more efficient and cost-effective than year-round self-commitment.

There is also insufficient evidence in the record to determine that any of these coal units faces an insurmountable barrier to moving to an economic commitment-based strategy. Between Xcel and OTP, four of the coal units serving Minnesota customers have shifted from year-round self-commitment to utilizing economic commitment for at least half of the year. The example of Big Stone proves that economic commitment can be coordinated across multiple plant owners. As discussed in our Initial Comments, concerns raised by MP about resource adequacy, replacement power, and reliability are not barriers to economic commitment.[14]

Economic commitment is becoming a new best practice across the country and in Minnesota. If a utility seeks to continue exclusively using self-commitment, the burden should be on that utility to demonstrate that the status quo of default self-commitment is likely to deliver *greater* customer benefit than economic commitment going forward.

3. How should the Commission use the information provided by the utilities in this docket going forward?

Fresh Energy recommends the Commission continue to require annual filings in this docket. While Xcel and OTP have made significant progress in reducing the use of self-commitment,

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[11] The result is [OTP TS] [redacted] [OTP TS] months for Coyote if only half of fuel costs are considered variable, as per the fuel contract.
[12] Fresh Energy, *Initial Comments* filed June 8, 2020 in Docket 19-704, pp. 7-10 (link)
[13] *Id*, p. 8
[14] *Id*, p. 6

continued annual reports are important for reviewing the effectiveness of these operational changes and for continuing to investigate the feasibility and cost impacts of economic commitment at the remaining coal units.

As discussed above, the Department, Sierra Club, and Fresh Energy all reached similar high-level conclusions based on the data submitted by utilities, but used different durations for the analysis. As the Department notes, the duration of analysis is an important methodology choice and significantly impacts the net benefit / (cost) results. The Department uses one week as the minimum duration to consider, while Fresh Energy used two days as the duration for analysis. However, we believe the Sierra Club's method of calculating the time it takes each unit to cycle to and from "warm" status is most accurate and appropriate to use for evaluating commitment choices.

As Sierra Club's comments state, "in general, it is more economical for [the utility] to de-commit [the units] during periods in which (a) the units will likely incur net losses over a time period greater than the time it takes to first cool-down to "warm" status and then start back up from warm status; and (b) the expected losses over that period exceed the warm startup costs."[15] The length of one cycle to and from "warm" status is a good approximation of the minimum length of decommitment (e.g. minimum time offline).

In other words, if a unit is being committed economically and market needs drop such that the unit is decommitted, the unit needs to cool down from its generating level. If market needs pick back up, the unit may cool down to warm, and then start up again from warm. To optimize unit operations and cost-effectiveness, a unit would decommit if the operator expects losses over one cycle to and from "warm" to be greater than the unit's warm startup cost. Or, if the unit would likely be decommitted for a longer period and cool down fully, the optimization would consider losses over one cycle to cold versus the unit's cold startup cost. If expected losses are greater than startup cost, the unit would save money by decommitting and starting back up. If losses are expected to be less than startup cost, it may be more cost-effective to move the unit to must run status for that period to "bridge" the period of lower prices.

The calculation of minimum decommit time is relatively simple, as is the calculation of losses over that period versus startup cost. We believe this would improve the precision of the analysis in this investigation and help to indicate the scale of potential savings from changing unit commitment from must run to economic. Fresh Energy recommends that the utilities provide this analysis for each unit in future compliance reports:

a. Length of minimum decommit time for each unit

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[15] Sierra Club, *Initial Comments: Minnesota Power 2020 Annual Compliance Filing,* filed June 8, 2020 in Docket 19-704, p. 13 (link)

b. Number of times during the analysis period that each unit incurred losses over a duration greater than or equal to its minimum decommit time
c. Of the periods identified in (b), the number of periods when losses were greater than the relevant startup cost (warm or cold startup cost, depending on length of the period)
d. Sum of losses in excess of startup cost that were incurred during periods identified in (c)

(Recommendation 2)

4. Should the Commission require the utilities to evaluate any specific facilities for economic commitment?

Fresh Energy reiterates our recommendation that the Commission require an analysis of the relative cost/benefit of alternative commitment and dispatch strategies, such as economic or seasonal dispatch, for the following facilities as part of the 2021 Annual Reports in this docket:

- Otter Tail Power: Coyote Station
- Xcel: Sherco 3

(Recommendation 3)

Otter Tail Power
Coyote Station is the only unit being investigated that has a large fixed component of its fuel contract. When including all fuel costs, the plant had just [OTP TS] [redacted] [OTP TS] with meaningful positive revenue in 2019. We urge the Commission to require OTP to evaluate economic commitment at Coyote under two scenarios: using current variable fuel costs and using all fuel costs as variable, and present its findings in the 2021 Annual Report in this docket. **(Recommendation 3a)**

We understand that the current contract with Coyote Creek Mine contains a large fixed component and that requesting to renegotiate the contract would require agreement from all four co-owners. However, the analysis requested above is important for ensuring that the co-owners, the Commission, and stakeholders understand what the potential savings could be for OTP customers if Coyote had a variable price contract and was economically committed. Fresh Energy notes that if the analysis reveals significant potential savings, all co-owners of Coyote will have an interest in altering the fixed portion of the contract.

To provide more insight into the feasibility of contract adjustment, we continue to recommend that OTP includes in their next Annual Report a discussion of the options and potential costs of changing the Coyote Creek Mike contract to reduce or eliminate fixed fuel costs. **(Recommendation 4)**

Xcel Energy

Sherco 3 is the only Xcel coal unit still using primarily self-commitment. Our analysis found that on a variable basis, Sherco 3 lost money in [Xcel TS] [redacted] [Xcel TS] months of 2019 and had extremely low revenues in an additional [Xcel TS] [redacted] [Xcel TS] months. Fresh Energy continues to recommend that the Commission require Xcel to evaluate the financial costs and benefits of moving Sherco 3 to economic commitment in the next Annual Report in this docket, which Xcel has since agreed to do.[16] **(Recommendation 3b)**

We also reiterate our recommendation that Xcel work with SMMPA to evaluate the cost impacts of this shift, including potential revenue impacts to the steam contract at Sherco 3, and identify potential solutions for coordinating commitment and dispatch decisions in the next Annual Report in this docket. **(Recommendation 5)**

5. Should the Commission establish enforcement procedures for this issue?

The Commission first directed Minnesota's investor owned utilities to evaluate the costs and benefits of self-commitment and self-scheduling in January 2019. It has been well-established through this proceeding (docket 19-704), the previous fuel clause adjustment proceedings in dockets 17-492 and 18-373, and through Xcel's proposal for seasonal unit commitment (docket 19-809) that year-round self-commitment is <u>not</u> the only practical commitment strategy for coal units in Minnesota, and that significant savings can be achieved by shifting to an economic commitment-based strategy.

In its March 2 *Compliance Filing* and July 8 *Reply Comments*, in addition to failing to provide "potential options and strategies for utilizing 'economic' commitments for specific coal-fired generating plants" as ordered,[17] Minnesota Power failed to provide any valid or compelling reason that Boswell 3 and 4 could not be moved to an economic commitment-based strategy. As discussed in Fresh Energy's *Initial Comments*, MP's concerns about resource adequacy, replacement power, and reliability are misplaced in discussions of economic commitment and do not constitute barriers.

Secondly, MP has not presented any evidence that must-run is a lower-cost, higher revenue operational strategy for either Boswell unit. On the contrary, the Department, Sierra Club, and Fresh Energy all pointed to evidence of potential savings from a change to an economic commitment-based strategy.

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[16] Xcel, *Reply Comments* filed July 8, 2020 in Docket 19-704, p. 3 (link)

[17] Minnesota Public Utilities Commission, *Order Accepting 2017-2018 Electric Reports and Setting Additional Requirements* filed November 13, 2019 in Docket 18-373, Order Point 8 (link)

Xcel and Otter Tail have taken concrete steps to lower costs for customers by reducing their use of self-commitment at a total of four coal units serving Minnesota customers. The record in this proceeding does not contain any compelling reason that MP could not take similar action at Boswell. Given this, Fresh Energy believes it is appropriate for the Commission to begin considering enforcement procedures should MP continue to delay taking action.

In initial comments we recommended that MP provide a plan in *Reply Comments* for moving one or more Boswell units to an economic commitment-based strategy by September 1, 2020. In light of MP's failure to provide this plan in *Reply*, we continue to recommend that MP make changes to its Boswell commitment strategy by this fall, when likely lower prices would enable significant customer savings through a change to an economic commitment-based strategy.

This will help to ensure that customers are not over-paying for Boswell operations this fall. Moreover, this urgent action is appropriate to help Minnesota families and businesses who are facing continuing hardship and economic strain during the COVID pandemic and associated recession. Minnesota Power should take every possible step to make sure its customers are not over-paying for electricity during this crisis, including by optimizing the commitment strategy at Boswell.

If MP does adjust the commitment strategy of either Boswell unit for the coming fall, Fresh Energy expects that MP will report on the operational change(s) in its March 1, 2021 Annual Fuel Charge True-Up and Self-Commitment Investigation reports and include a calculation of expected impacts to actual fuel costs versus the forecast, variable operations and maintenance (O&M) costs, and fixed O&M and capital costs as relevant, in both reports.

If MP does not adjust the commitment strategy of either Boswell unit for fall 2020, Fresh Energy recommends that the Commission review the losses that may have been avoidable via economic commitment during the 2021 fuel charge true up proceeding (truing up 2020 FCA rates). Specifically, we recommend the Commission require MP to report on losses in excess of startup cost incurred during periods greater than or equal to minimum decommit time (as discussed on pages 5-6) from September 1, 2020 – December 31, 2020 for each Boswell unit. This accounting should be included in the 2021 annual filing in this docket as well as MP's 2021 fuel charge true up request. **(Recommendation 6)**

The total of these losses in excess of startup cost would approximate the unnecessary cost to customers of MP's (potential) failure to decommit the unit when cost-effective to do so. If the Commission finds these losses to be unreasonable, the Commission should determine whether to allow recovery and whether to adjust proposed FCA true-up amounts accordingly. **(Recommendation 7)**

Summary of Recommendations

Fresh Energy recommends the Commission:

1. Require Xcel, OTP and MP to file a compliance filing within 30 days of the Commission's order containing an Excel spreadsheet of the required data, with formulas intact, that the utilities will fill out for each unit in future filings, including clear definitions of the inputs. This compliance filing and future Annual Reports in this docket should:
    a. Report net benefit / (cost) using total production cost but provide columns for hourly unit fuel and variable O&M in workpapers.
    b. Not include ancillary service market (ASM) revenues in the calculation of net benefit / (cost), but utilities may report ASM revenues and discuss their relevance to the analysis.
    c. Include data for "unavoidable must run hours" in future reports and data sets and identify these hours and the reason for "unavoidable self-commitment" in workpapers.

2. Require Xcel, OTP and MP to provide in future Annual Reports in this docket:
    a. Length of minimum decommit time for each unit
    b. Number of times in the analysis period that each unit incurred losses over a duration greater than or equal to its minimum decommit time
    c. Of the periods identified in (b), the number of periods when losses were greater than the relevant startup cost (warm or cold startup cost, depending on length of the period)
    d. Sum of losses in excess of startup cost that were incurred during periods identified in (c)

3. Require an analysis of the relative cost/benefit of alternative commitment and dispatch strategies, such as economic or seasonal dispatch, for the following units as part of the 2021 Annual Reports in this docket:
    a. Otter Tail Power: Coyote Station, evaluated under two scenarios: using current variable fuel costs and using all fuel costs as variable.
    b. Xcel: Sherco 3

4. Require OTP to include in the 2021 Annual Report in this docket a discussion of the options and potential costs of changing the Coyote Creek Mike contract to reduce or eliminate fixed fuel costs.

5. Require Xcel to include in the 2021 Annual Report in this docket a discussion of the potential revenue impacts to the steam contract at Sherco 3 from moving to economic

commitment, and potential solutions for coordinating commitment and dispatch decisions between Xcel and SMMPA.

6. If MP does not adjust the commitment strategy of either Boswell unit for the fall 2020 season, require MP to report on losses in excess of startup cost incurred during periods greater than or equal to minimum decommit time from September 1, 2020 – December 31, 2020 for each Boswell unit. This accounting should be included in the 2021 Annual Report in this docket as well as MP's 2021 fuel charge true up request.

7. Review Boswell's losses in excess of startup cost during MP's 2021 fuel charge true-up proceeding and, if the Commission finds these losses to be unreasonable, determine whether to allow recovery and whether to adjust proposed FCA true-up amounts accordingly.

Thank you for your consideration, and for the Commission's continuing leadership investigating this issue, which is important to Minnesota customers, the health of our energy market, and the climate alike.

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