

**STATE OF MINNESOTA  
PUBLIC UTILITIES COMMISSION**

Dan Lipschultz	Commissioner
Matt Schuerger	Commissioner
Katie Sieben	Commissioner
John Tuma	Commissioner

February 20, 2019

**Petition for Approval of Minnesota Power's  
Industrial Demand Response Product**

**Docket No. E015/M-18-735**

**INITIAL COMMENTS OF FRESH ENERGY IN RESPONSE TO THE  
COMMISSION'S JANUARY 2, 2019 NOTICE**

Fresh Energy respectfully submits comments in response to Minnesota Power's ("MP" or the "Company") petition for approval of an updated Large Power customer demand response offering. Fresh Energy appreciates that the design of MP's new offering, particularly Product B – Long-Term Emergency Capacity Curtailable with Firm Load Control Periods (hereinafter "Product B"), is designed as a system resource that enhances the operational flexibility of the demand response. Increased flexibility on MP's system through demand-side options as well as with non-thermal generation options will provide near-term benefits and will be increasingly important as MP's, Minnesota's and MISO's systems transition to predominately renewable. As such, we support approval of the petition with one operational modification and reporting recommendations.

**A. MP's Proposal is Designed as a System Resource with Enhanced Flexibility**

MP's petition has three demand response product offerings. We focus our comments on Product B, but first briefly comment on Product A. Product A is the traditional interruptible load product that qualifies as a capacity resource in MISO, but is only

called in MISO-designated emergencies. This product has value as a MISO capacity resource, but has no additional operational value to MP and does not provide system flexibility. As such, it is priced at a modest \$0.60/kW-month. MP continuing to offer this product is worthwhile and important for its existing DR customers that do not want to change operations and provides cost-effective capacity on MP's system.

Product B importantly includes the necessary requirements to qualify as a capacity resource in MISO, but also includes an operational component that is designed to provide system benefits similar to a peaking resource that MP can dispatch, similar to how it would bid a peaking plant into MISO's energy market. Specifically, Product B allows MP to call firm load control periods under the following parameters:

- Maximum number of annual (calendar year) Firm Load Control hours: 600 hours
- Maximum of 2 Firm Load Control periods per day
- Maximum of 12 hours of Firm Load Control periods per day
- Maximum Firm Load Control duration per occurrence: 12 hours
- Minimum Firm Load Control duration per occurrence: 4 hours
- No more than four Firm Load Control periods in any seven days of the week (Sunday-Saturday)
- Notice will be given either the day-ahead or real-time with four hours advance notice through an e-mail notice.<sup>1</sup>

These load control period conditions allow for flexible operation similar to a combustion turbine ("CT"). For example, 600 hours is approximately 6.8 percent of yearly hours, which is in line with typical CT capacity factors. Product B's other

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<sup>1</sup> Minnesota Power, *Petition for Approval of Minnesota Power's Industrial Demand Response Product* (hereinafter "Petition"), December 7, 2019 at 17-18.

operating conditions allow for sufficient flexibility to align the product's value with its cost with one exception – the minimum firm load control duration – which we discuss in detail below.

### *Pricing*

Since Product B is designed akin to a peaking system resource, its capacity pricing is based on CT pricing. Product B's capacity price is \$7/kW-month.<sup>2</sup> A useful comparison for this capacity payment is MISO's cost of new entry, or "CONE", metric that MISO provides as a capacity value proxy as part of its annual Planning Resource Auction. As MISO states in its FERC filing explaining CONE, "MISO used a NPV analysis to determine an appropriate CONE value for hypothetical advanced CTs located in each of the LRZs."<sup>3</sup> MISO's CONE for the 2018/2019 planning year based on the April 2018 calculation is \$247.59/MW-day, or approximately \$7.53/kW-month.<sup>4</sup> There are other approaches to valuing capacity, such as competitive solicitation, but given the unique circumstances for this product – specifically that there are less than 10 customers that can provide it – an administrative capacity price is reasonable. Moreover, while MP could potentially procure a CT at an overall capital cost lower than MISO CONE, there are positive attributes of DR compared to a CT that merit consideration for valuing the product:

- Product B is emissions-free
- Product B has no infrastructure or stranded asset risk to MP or its other customers
- Product B has firm pricing, both for capacity and energy
- Product B has no fuel price volatility

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<sup>2</sup> Petition at 1.

<sup>3</sup> Midcontinent Independent System Operator, *FERC Filing: Filing of the Midcontinent Independent System Operator, Inc. Regarding LRZ CONE Calculation*, September 1, 2017, available at: <https://cdn.misoenergy.org/Final%20MISO%202017%20Annual%20CONE%20filing51321.pdf> at 4.

<sup>4</sup> Midcontinent Independent System Operator, *2018/2019 Planning Resource Auction Results*, April 13, 2018, available at: <https://cdn.misoenergy.org/2018-19%20PRA%20Results173180.pdf> at 8.

- Product B has a “dispatch” or marginal energy cost that is at least 25% less than conventional CT dispatch costs
- Product B provides the financial value to Minnesota Power’s industrial customers that are providing the service

Product B’s load-control, or energy component, pricing is reasonable and has the potential to provide significant benefits. Product B’s cost to curtail participating load is \$30/MWh.<sup>5</sup> Therefore, MP has the ability to call on Product B capacity to avoid energy market prices during high cost periods with a savings to customers. MP compares the \$30/MWh credit to an estimated peaking energy cost of \$41/MWh.<sup>6</sup> That estimate is a reasonable dispatch cost estimate for a CT.

While MP’s general estimate shows the energy price is reasonable, there is an opportunity for significant savings if MP uses Product B to avoid the most expensive energy over the year. Looking at MP’s locational marginal price node (MP.MP) from 2015 through Q2 2018, 13% of hours were at or above \$30/MWh. Further, in 2017, the most recent year with full data, the average price of the most expensive hours was the following:

- Most expensive 0.5% of hours was \$143/MWh
- Most expensive 1% of hours was \$113/MWh
- Most expensive 2% was \$86/MWh
- Most expensive 600 hours (the amount of hours MP is able to call Product B) was \$56.89/MWh

Therefore, there is ample opportunity for MP to utilize Product B with substantial system savings with the energy price set at \$30/MWh. Given this significant value

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<sup>5</sup> Petition at 20.

<sup>6</sup> *Id.*

potential, we recommend specific reporting and/or the option of a performance incentive, as we discuss in more detail in section C.

## B. Recommended Modification

We recommend that Product B be modified to remove the minimum firm load control duration that is proposed at four hours.<sup>7</sup> This minimum duration significantly limits the flexibility of Product B in that whenever MP calls on it, the load control must last for at least four hours. As such, the use of Product B cannot be as targeted or nimble, and as such, its opportunity to target the highest cost hours is limited. For example, the average price of the most expensive 1% of hours at MP.MP was \$113 in 2017. But, in 2017, there were only four days that had a consecutive four hour period with an average price above \$110/MWh. The minimum firm load control period is the outlier when comparing the flexibility of Product B with a CT. Moreover, there is no apparent operational or policy reason for the minimum period in the petition. Therefore, we recommend that the minimum be removed.

## C. Reporting

Given that the capacity pricing of Product B is premised on its role as a peaking, flexible system resource akin to a CT, and the significant opportunity for energy savings through utilizing Product B, we recommend that the Commission require MP to file quarterly reports on when it called Product B, for how much capacity, and the market price avoided for each hour. This reporting would not need to show which actual customer was being curtailed and when, but would be aggregated, anonymous data. This reporting would provide transparency and accountability to make sure MP is maximizing the value from this not insignificant investment.

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<sup>7</sup> Petition at 18.

Another option the Commission could consider is a performance mechanism based on MP's utilization of Product B. A shared savings mechanism could further incentivize and reward MP for maximizing savings from Product B. This is not to suggest MP does not intend to use DR for the full benefit of its customers, but as an option for the Commission to align the Company's direct financial interest with its customers' in this specific use-case. A performance mechanism option could also be added later, if reporting shows that there is room for improvement in Product B utilization.

#### D. Recommendations

Fresh Energy recommends that the Commission approve the Petition with the following modifications:

- 1) Remove the minimum load control duration for Product B
- 2) Order MP to file quarterly reports with the following information:
  - i. each instance when Product B was called
  - ii. date, time and duration for when Product B was called
  - iii. the amount of capacity called for each instance
  - iv. whether and how much buy-through was utilized for each instance; and
  - v. the market price avoided for each hour Product B was utilized

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