

May 10, 2024

Will Seuffert
Executive Secretary
Minnesota Public Utilities Commission
121 7th Place East, Suite 350
St. Paul, MN 55101-2147

RE: **Comments of the Minnesota Department of Commerce, Division of Energy Resources
Minnesota Power's 2023 Integrated Distribution Plan**
Docket No. E015/M-23-258

Dear Mr. Seuffert:

Attached are the comments of the Minnesota Department of Commerce, Division of Energy Resources (Department) in the following matter:

In the Matter of Minnesota Power's 2023 Integrated Distribution Plan

Minnesota Power's Integrated Distribution Plan (IDP) was filed on October 16, 2023, by Jess McCullough, Public Policy Advisor II for Minnesota Power.

The Department recommends **that the Commission approve Minnesota Power's IDP, subject to certain modifications**. The Department is available to answer any questions the Minnesota Public Utilities Commission may have.

Sincerely,

/s/ Dr. Sydnie Lieb
Assistant Commissioner of Regulatory Affairs

SL/ar
Attachment



Before the Minnesota Public Utilities Commission

PUBLIC Comments of the Minnesota Department of Commerce Division of Energy Resources

Docket No. E015/M-23-258

I. INTRODUCTION

The Department appreciates the opportunity to further comment on Minnesota Power's Integrated Distribution Plan (IDP) and the notice topics put forth by the Commission. The Department provides its comments in response to select topics addressed by Minnesota Power in its reply comments and also addresses topics for which the Department did not make a recommendation in initial comments.

II. PROCEDURAL HISTORY

On October 16, 2023, Minnesota Power (MP or the Company) filed its IDP and Transportation Electrification Plan (TEP) in Docket No. E015/M-23-258.¹ On November 15, 2023, the Commission issued its Notice on the issues of whether the Commission should accept or reject Minnesota Power's 2023 IDP and TEP.² The Notice included the following topics open for comment:

2023 Minnesota Power Integrated Distribution System Plan

1. Should the Commission accept or reject Minnesota Power's IDP?
2. Did Minnesota Power adequately address the Commission's IDP filing requirements and prior Orders, as outlined in Attachment A to this notice? Is additional information necessary for improved clarity?
3. Feedback, comments, and recommendations on the following areas of Minnesota Power's IDP:
 - a. Non-wires alternatives analysis and potential pilot project
 - b. Planned grid modernization initiatives
 - c. Forecasted distribution budget
 - d. Distributed Energy Resource (DER) scenarios and forecasts, including electric vehicle forecasts
4. Are there any aspects of Minnesota Power's non-wires alternative analysis or its conclusions the Commission should address? Was the analysis conducted appropriate and were the conclusions reasonable?
5. Has Minnesota Power appropriately discussed its plans to maximize the benefits of the Inflation Reduction Act (IRA) and the IRA's impact on the utility's planning assumptions pursuant to Order Point 1 of the Commission's September 12, 2023 Order in Docket No. E,G-999/CI-22-624?

¹ 2023 Integrated Distribution System Plan, Minnesota Power, Docket No. E015/M-23-258 (October 16, 2023) (eDocket No. [202310-199614-01](#)). Hereinafter "IDP."

² The comment period was extended on January 19, 2024. Notice of Extended Comment Period – In the Matter of Minnesota Power's 2023 Integrated Distribution Plan, Docket No. E015/M-23-258 (January 19, 2024). (eDocket No. [20241-202350-01](#)).

6. What should the Commission consider or address related to enhancing the resilience of the distribution system within Minnesota Power's IDP?
7. Other areas of Minnesota Power's IDP not listed above, along with any other issues or concerns related to this matter.

2023 Minnesota Power Transportation Electrification Plan (TEP)

8. Should the Commission approve, modify, or reject Minnesota Power's Transportation Electrification Plan (TEP)?
9. Did Minnesota Power adequately address the Commission's TEP filing requirements and prior Orders, as outlined in Attachment A to this notice? Is additional information necessary for improved clarity?
10. How should the Commission consider modifications or supplements to Minnesota Power's Transportation Electrification Plan?
11. Should the Commission establish any procedural or filing requirements for future TEPs under Minn. Stat. 216B.1615?
12. Are there gaps in Minnesota Power's transportation electrification programs the Commission should address to ensure equitable customer outcomes?
13. Are there other issues or concerns related to this matter?

The Commission issued a Notice of Extended Comment Period on January 19, 2024.³ Comments were submitted by the Minnesota Department of Commerce (Commerce or Department)⁴ and Clean Energy Group (CEGs)⁵ on April 5, 2024. The Commission issued a second Notice of Extended Comment Period on April 16, 2024.⁶ MP submitted reply comments on April 26, 2024.⁷ The Department submits these reply comments in response to MP reply comments.⁸

³ Notice of Extended Comment Period – In the Matter of Minnesota Power's 2023 Integrated Distribution Plan, Docket No. E015/M-23-258 (January 19, 2024). (eDocket No. [20241-202350-01](#)).

⁴ Initial comments, Minnesota Department of Commerce, In the Matter of Minnesota Power's 2023 Integrated Distribution Plan, Docket No. E015/M-23-258 (April 5, 2024). (eDocket No. [20244-205042-01](#)). Hereinafter "Department initial comments."

⁵ Initial comments, Clean Energy Groups, In the Matter of Minnesota Power's 2023 Integrated Distribution Plan, Docket No. E015/M-23-258 (April 5, 2024). (eDocket No. [20244-205056-01](#)). Hereinafter "CEGs initial comments."

⁶ Notice of Extended Comment Period – In the Matter of Minnesota Power's 2023 Integrated Distribution Plan, Docket No. E015/M-23-258 (April 16, 2024). (eDocket No. [20244-205487-01](#)).

⁷ Reply comments, Minnesota Power Company, In the Matter of Minnesota Power's 2023 Integrated Distribution Plan, Docket No. E015/M-23-258 (April 26, 2024). (eDocket No. [20244-206050-01](#)). Hereinafter "MP reply comments."

⁸ The Department includes responses MP provided to Department Information Requests on April 5, which were not received in time to incorporate into the Department's initial comments. These responses are included with these comments as Attachment A, which is submitted as a public version and a trade-secret version.

III. DEPARTMENT ANALYSIS

OVERVIEW OF COMMENTS

In these reply comments, the Department focuses on specific issues raised through the Notice of Comment Period and the filed comments in this proceeding. The Department does not devote equal attention to all topics but rather prioritizes discussion of certain matters – namely, the purpose of the IDP and need for enhanced transparency and informational quality, and issues concerning beneficial electrification and load forecasting.

The order of these reply comments is as follows:

- A. *Recommendation concerning acceptance of the IDP*
- B. *Recommendation concerning acceptance of the TEP*
- C. *Requests for additional information from Minnesota Power*
- D. *The Purpose of the IDP*
- E. *Recommendations for enhanced informational requirements*
- F. *Beneficial electrification and related issues*

A. RECOMMENDATION CONCERNING ACCEPTANCE OF THE IDP

After careful review, the Department concludes that the Company sufficiently addressed each of the IDP Filing Requirements and Commission Orders.

The Department recommends that the Commission accept Minnesota Power's 2023 IDP, subject to certain modifications.

These recommended modifications are detailed in these comments.

B. RECOMMENDATION CONCERNING ACCEPTANCE OF THE TEP

In initial comments, the Department evaluated the Company's TEP using the criteria established in Minn. Stat. § 216B.1615, Subd. 3, and found the TEP to be reasonable and in the public interest. The Department also requested additional information from MP. The Company's responses to these requests are summarized in the table below.

Table 1. TEP Requests for Additional Information to be Provided in Reply Comments

Topic	Request for Discussion/Data Relating to:	Reply from MP
Off-Peak Charging	"[MP's] strategy to increase off-peak charging among EV owners in its service territory, including its assessment of the effectiveness of the Residential Time-of-Day rate to promote off-peak charging."	MP indicates it does not yet have sufficient data to measure the effectiveness of the Residential Time-of-Day rate for EV charging and continues to engage EV owners to understand adoption barriers and charging preferences. ⁹
Home Charger Rebates	"how [MP] plans to increase utilization of its home charger rebates."	MP indicates participation in its rebate programs has steadily increased over time, from 4 rebates in the first year to 48 rebates thus far in the third year, but customers do not identify MP's EV programs as the main driver for EV adoption. MP anticipates that the rebate program will grow in alignment with EV adoption. ¹⁰
Labor Costs	"... how [MP's] planned increased spending for labor costs will be utilized to further transportation electrification."	MP indicates its labor costs assume 1.5 full-time employees per year, consistent with prior assumptions, but historical spending has been lower than budgeted amounts. ¹¹

The CEGs initial comments also requested information from MP regarding its TEP, and MP's response provides additional relevant information regarding MP's promotion of off-peak charging. MP indicated that it is aware of 56 EV owners participating in the Residential Time-of-Day rate and noted that additional EV owners may not have notified MP at the time of EV purchase and may also be participating in the rate.¹² The Department notes that more than twice as many EV owners participate in the Residential Time-of-Day rate than the 27 customers enrolled in MP's Residential EV tariff.¹³

The Department has reviewed MP's responses and concludes that the Company has generally responded sufficiently in its reply comments to the Department's requests for additional information. The Department maintains its conclusion from initial comments that the Company's TEP is reasonable and in the public interest and sufficiently addressed the TEP Filing Requirements.

⁹ MP reply comments at pages 10-11.

¹⁰ MP reply comments at page 11.

¹¹ *Ibid.*

¹² MP reply comments at page 3.

¹³ IDP Appendix E, TEP at page 10.

The Department recommends that the Commission approve Minnesota Power's 2023 TEP.***C. REQUESTS FOR ADDITIONAL INFORMATION FROM MP***

In its initial comments, the Department requested additional information and also made recommendations for future modifications. MP's responses to these requests and recommendations are summarized in the two tables below.

In this section, the Department provides discussion and recommendations to improve the quality of information in MP's IDP, to enhance the usefulness of this plan. The Department stresses that the IDP is the venue for the Company to provide detailed information about its grid investment plans. Even if the Company has already provided relevant information in another proceeding, it should not fear redundancy in including the same information in the IDP. Moreover, the fact that information has already been filed in a separate proceeding does not necessarily obviate the need for MP to include the same information in its IDP.

Table 2. IDP Requests for Additional Information to be Provided in Reply Comments

Topic	Request for Discussion/Data Relating to:	Reply from MP
IRA Impacts	"... how [MP's] distribution system planning will evolve with the incorporation of additional impacts from the IRA."	MP anticipates increased electrification from IRA and ECO programs and intends to refine its DER forecast as more information is available. MP indicates that it will leverage AMI and other existing data sources to assist in planning. ¹⁴
IDP Scheduling	"... how to schedule the IDP filing to better integrate the IDP's inputs and outputs with other Commission proceedings in reply comments."	MP supports the Department's interest in streamlining the IDP process and further discussion about improving coordination between the IDP and other proceedings. ¹⁵
Beneficial Electrification	"...provide data on the fraction of its customers that rely on the primary heating sources of natural gas, electric resistance heat, or all other heat sources."	MP provides two tables on percentage of households by fuel type and by heating equipment and discusses the 2018 Minnesota Energy Efficiency Potential Study where the survey data were collected. ¹⁶
NWA Process	"Include calculated benefits for all Minnesota Test Cases, and to the extent practicable, present the results in reply comments."	MP states that it is not feasible to provide these calculations in reply comments but indicates that it will evaluate and incorporate benefits into the 2025 IDP. ¹⁷

¹⁴ MP reply comments at page 9.

¹⁵ MP reply comments at page 10.

¹⁶ MP reply comments at pages 9-10.

¹⁷ MP reply comments at page 6.

Topic	Request for Discussion/Data Relating to:	Reply from MP
	“Recalculate its BCA benefits starting with an “Avoided Capital Cost” benefit at the beginning of the BCA period of analysis and present the results in reply comments.”	MP provides a table with Avoided Capital Cost benefits moved to the beginning of the cost-benefit analysis period. ¹⁸
	“Discuss in reply comments planned 2023 to 2027 budget allocations for the Kerrick, Wrenshall, Silver Bay, and Cloquet NWA projects, including any budget dedicated to NWA solutions.”	MP states that the Kerrick Battery Energy Storage project is the only project MP is developing—and that the estimated budget allocation for this project is \$1.8M in 2024 and \$1.2M in 2025. MP indicates that the budget is subject to updates once a vendor is selected. ¹⁹
	“Present the full BCA for each NWA project studied by Black & Veatch in reply comments.”	MP states that cost-benefit analyses (CBAs) were delayed during the discovery process, but that full CBAs were provided in the response to DOC IR 042. ²⁰
Grid Modernization	“...present in reply comments additional information about its FLISR program, which includes a discussion of the cost recovery mechanism, an analysis of alternative investments, a discussion of customer anticipated benefits, a discussion to manage bill impacts, a presentation of the impact to the net present value of system costs, and a cost-benefit analysis, if available.”	MP indicates its intentions to expand the fiber optic network and evaluate each distribution feeder for the best FLISR solution available. MP identifies barriers to its plan including lack of an available feeder to create a back-up feed and cost-prohibitive fiber communication. MP anticipates FLISR benefits to include improved reliability and resiliency. MP states that FLISR costs will be recovered through rate cases, and that it is seeking grant funding to help manage bill impacts. MP does not provide a CBA or impacts to NPV of system costs. ²¹

¹⁸ MP reply comments at pages 6-7.

¹⁹ MP reply comments at page 7.

²⁰ MP reply comments at page 7.

²¹ MP reply comments at pages 7-8.

Topic	Request for Discussion/Data Relating to:	Reply from MP
	“...present in reply comments additional information about its Smart Sensor program, which includes a discussion of the cost recovery mechanism, an analysis of alternative investments, a discussion of customer anticipated benefits, a discussion to manage bill impacts, a presentation of the impact to the net present value of system costs, and a cost-benefit analysis, if available.”	MP indicates that Smart Sensors will provide system visibility where SCADA and fiber communication is not readily available, and anticipates benefits to include improved reliability, resiliency, and power quality. MP states that program costs will be recovered through standard rates, and that it is seeking grant funding to help manage bill impacts. MP does not discuss alternative investments, nor does it provide a CBA or impacts to NPV of system costs. ²²
	“...present in reply comments additional information about its OMS and GIS programs, which includes a discussion of the proposed budget, deployment plan, cost recovery mechanism, an analysis of alternative investments, a discussion of customer anticipated benefits, a discussion to manage bill impacts, a presentation of the impact to the net present value of system costs, and a cost-benefit analysis, if available.”	MP indicates that the OMS has a budget of \$4 Million, and GIS has a budget of \$2.07 Million, with deployment anticipated in December 2024 for both programs. MP indicates that program benefits are discussed in the IDP at pages 41-44. MP states that program costs will be recovered through rate cases, and that it is seeking grant funding to help manage bill impacts. MP does not discuss alternative investments, nor does it provide CBAs or impacts to NPV of system costs. ²³
	“...provide in reply comments a status update of any plans and budgets to deploy its EMS upgrade, a DERMS, or ADMS in its 2023 to 2027 budget.”	MP states that EMS was upgraded in February 2024, and indicates that it has no current plans to install DERMS or ADMS between 2023-2027. ²⁴

After careful review, the Department concludes that the Company has generally responded sufficiently in its reply comments to the Department’s requests for additional information. However, the Department notes that certain required information on grid modernization is still missing. Notably, MP has not provided cost-benefit analyses for FLISR, the Smart Sensor program, or OMS and GIS projects. These informational gaps are discussed in a subsequent section of these comments.

²² MP reply comments at page 8.

²³ MP reply comments at pages 8-9.

²⁴ MP reply comments at page 9.

Table 3. IDP Requests for Additional Information to be Provided at a Later Date

Topic	Request for Commission to Direct MP to:	Reply from MP
NWA Process	“Consider demand response, energy efficiency, and renewable generation into its NWA process for the 2025 IDP.”	MP indicates that it will evaluate incorporating the requested information in the next IDP. ²⁵
	“Calculate future NWA ratepayer disbenefit categories based on the ratepayer cost of outages rather than in the calculated categories of “Compliance Risk,” “Power Quality Consequences,” and “Improved Customer Satisfaction.””	MP indicates that it will evaluate incorporating the requested information in the next IDP. ²⁶
	“Present an NWA process, which includes the project screening process, the NWA analysis scope of work, cost estimation, and the Engineering, Procurement, and Construction (EPC) process, timeline and goals in its next IDP.”	MP states that evaluation for NWAs is more cost-effective on a case-by-case basis rather than through a blanket process. MP acknowledges the important role of NWAs, but notes that most spending in the IDP is tied to replacing aging assets, and states that NWAs cannot displace these needs. ²⁷
Beneficial Electrification	“...file a supplemental filing that proposes a plan to accelerate beneficial electrification for its customers, including a discussion of how to incentivize dual fuel adoption, and provide forecasts of expected grid impacts of the same.”	MP discusses its intentions to encourage beneficial electrification through modifying its 2024-2026 ECO Plan (including incorporating efficient fuel switching measures) and engagement with IRA HOMES and HEAR programs. MP states that it likely won’t have data on electrification impacts prior to the next IDP. MP requests that distribution impacts from electrification continue to be explored through the IDP rather than in a separate filing. ²⁸
Resiliency Metrics	“...develop a suite of metrics to track resiliency, including SAIDI and SAIFI, MEDs, and other metrics to the extent warranted.”	MP states that it already files resiliency metrics in its Safety, Reliability, and Service Quality filing. ²⁹

The Department has certain concerns relating to MP’s responses to requests for additional information on NWAs, on beneficial electrification, and on resiliency performance. These concerns are detailed in the sections that follow.

²⁵ MP reply comments at page 4.

²⁶ MP reply comments at page 4.

²⁷ MP reply comments at page 6.

²⁸ MP reply comments at page 5.

²⁹ MP reply comments at page 5.

D. THE PURPOSE OF THE IDP

The Department notes the need for clarity about the purpose of the IDP in Minnesota. The Department stresses that a clearer understanding of the Commission's view on this matter is needed to establish objective standards of review for the IDP and to resolve potential disagreements relating to the extent of information that MP should reasonably be expected to provide in its IDP filings. Moreover, certain topics in the Notice of Comment Period for this proceeding invite clarification on the role of the IDP. For example, Topic 2 asks whether "additional information [is] necessary for improved clarity."

The Department has reviewed MP's IDP based on its view of the objectives of the IDP, which is informed by the language of the Commission's IDP filing requirements. In the Department's view, the IDP is intended to be informational in nature, but with enough substance to be able to *inform* decisions made in other proceedings, including cost recovery proceedings. To this end, the Department is encouraged by the Company's statement in reply comments in support of further discussion on improving the coordination between the IDP and other proceedings.³⁰

The Department notes that its recommendations in these comments are geared toward improving the quality of information included in MP's IDP with an eye toward improving the coordination between the IDP and other proceedings and enhancing the usefulness of the IDP to inform cost recovery proceedings.

E. RECOMMENDATIONS FOR ENHANCED INFORMATIONAL REQUIREMENTS

In this section, the Department provides discussion and recommendations to improve the quality of information in MP's IDP, to enhance the usefulness of this plan. The Department especially focuses on the need for detailed information about grid modernization investments, other distribution grid spending, NWAs, and on resiliency reporting.

The Department stresses that the IDP is *the* venue for the Company to provide detailed information about its grid investment plans. In its IDP, MP should clearly identify its grid investment objectives and the benefits and costs of its planned investments. Further, goals, benefits, and costs should be quantified to the maximum extent possible, although the Company should still address these effects qualitatively if complete quantification is not possible. Even if the Company has already provided relevant information in another proceeding, it should not fear redundancy in including the same information in the IDP.

i. Grid Modernization Investment Plans and Cost-Benefit Analysis

Noting a lack of information about grid modernization investment plans in MP's IDP, the Department requested MP to provide in reply comments discussion in the following areas related to its grid modernization investments:

To the extent practicable, the Department expects a discussion of the overall investment plan (Filing Requirement 3.D.1.a) and a discussion of

³⁰ MP reply comments at page 10.

customer anticipated benefit and cost (Filing Requirement 3.D.1.g). For projects over \$2 million, the Department expects a discussion of the above, as well as a discussion of alternative investments that were analyzed (Filing Requirement 3.D.1.c), a discussion of a plan to mitigate bill impacts (Filing Requirement 3.D.1.i), a presentation of the net present value of system costs (Filing Requirement 3.D.1.j), and a cost-benefit analysis of the project (Filing Requirement 3.D.1.k).

First, the Department clarifies that the \$2 million threshold established in the excerpted section above was included in error, but the Department decided not to formally issue a correction of its initial comments. The Department clarifies that it is not recommending that there be any cost threshold bearing on the requirement for the Company to evaluate alternatives, bill impacts, or NPV impacts for grid modernization projects, nor should there be a cost threshold limiting when the Company is obligated to provide CBAs for these projects.

In these reply comments, the Department has focused on the missing grid modernization information in MP's IDP out of a view that reviewing grid modernization in an integrated context is especially key to achieving the objectives of the IDP. As the Department has recently expressed in its comments in other proceedings, grid modernization investments are often optional, interdependent, and interactive with other parts of the distribution grid and so evaluation of their cost effectiveness is most appropriately undertaken in an integrated context.

Unlike traditional grid investments that are generally not optional, grid modernization investments are often undertaken electively, because they promise to yield incremental benefits. These benefits may include avoidance of the need for traditional investments, but it is incumbent on the utility to demonstrate that the benefits justify the (elective) costs. This evaluation of benefits and costs should assess the range of alternatives and account for both interdependencies between grid modernization components and interactions with the wider grid.

The Department maintains its position from initial comments that MP has not provided all of the required information on benefits and costs for its grid modernization investments. Even if cost recovery is not at issue, the Company should still be including the pertinent cost and benefit information about these investments in its IDP. Specific informational deficiencies are discussed in the following sections. Specifically, the Department observes that the Company has not provided cost-benefit analyses for its FLISR project, Smart Sensor Program, or OMS and GIS projects, though the Department understands the IDP filing requirements as establishing the need for the Company to provide CBAs for each of these projects and programs.

The Department recommends that the Commission direct MP to file separate cost-benefit analyses for FLISR, the Smart Sensor Program, OMS, and GIS, through supplemental filings, to be provided within 180 days of the Commission's final Order in this proceeding.

ii. Measuring the Impact of Distribution Grid Investments

To optimize planning and investment, MP should also endeavor to quantify the impacts of its traditional distribution grid investment in key dimensions. While the informational requirements for grid modernization are more stringent and extensive for the reasons discussed above, MP should still aim to quantify the impacts of its traditional expenditures on reliability and capacity. By quantifying the impacts of its investments, MP can better demonstrate that its various budgets are right-sized, with cost effective investments in grid modernization to maximize customer benefits and minimize overall costs.

To this end, and to the extent relevant and measurable, the Company should be quantifying the following impacts for its investments, irrespective of whether investments are required or discretionary:

- Capacity – marginal expected increase in MW capacity (at the level of system/substation/feeder)
- Reliability – marginal expected increase in reliability, as per SAIDI/SAIFI or other metrics
- Ratepayer impacts – marginal increase/decrease in rates and average bills
- Equity impacts – impacts on reliability, rates/bills, or other metrics by income group, race, environmental justice community, and potentially other dimensions.

The Department recognizes that quantifying investment impacts may be challenging. The Department thus provides the following recommendation, with scope for MP to address how it will be best able to quantify investment impacts.

The Department recommends that the Commission direct MP to provide a proposal for measuring the capacity, reliability, ratepayer, and equity impacts of its distribution grid investments in its next IDP. This proposal should specifically address the level of granularity at which MP will evaluate these impacts for each budget category, indicating for each category whether MP plans to measure these impacts at the level of the budget category, program, project, or at some other level of resolution, or not at all, and specifically accounting for the impact of any expected changes to IDP budget categories.

iii. NWA Process

The Department requested that Minnesota Power present and discuss an NWA process in its next IDP, for better transparency and in part to comply with Filing Requirements 3.E.2.d and 3.E.2.b. In the Department's view, Minnesota Power has not fulfilled this request. Instead, MP stated that establishing a blanket NWA process should not be pursued as it is less cost-effective compared to case-by-case NWA evaluation.³¹

³¹ MP reply comments at page 6.

The Department reiterates its request that the Company present and discuss an NWA process even in the event that such a process is not as cost-effective as case-by-case analysis, as the Company declares. Establishing a screening process is essential to ensure that MP remains compliant with the filing requirements and will help to avoid the scenario in which MP has an NWA-eligible project but has not conducted an NWA analysis. The Department is not in a position to independently evaluate NWA suitability and request NWA studies in the IDP, so the Department is reliant on MP's own due diligence – hence, the need for MP to establish and provide clear screening criteria.

Notwithstanding MP's assertions about the costs of establishing a screening process, the Company did not provide any evidence in support of its claim that such a process would in fact be less cost effective. Additionally, the case-by-case analysis as currently occurring is not compliant with the filing requirements and as such must be adjusted. The Company provided no statements regarding the compliance of the current case-by-case process with Filing Requirements 3.E.2.d and 3.E.2.b.

The Department recommends that the Commission provide clarification as to whether the current NWA analysis conducted by the Company is compliant with Filing Requirement 3.E.2.d and 3.E.2.b. If the Commission believes that the current analysis is not compliant, the Department recommends that the Commission require the Company to file a compliant NWA process in its 2025 IDP.

a. *Avoided Capital Costs*

In the initial comments, the Department discussed the proper methodology of conducting “avoided capital cost” benefits in the CBA by realizing the benefit in the first year that the wired solution is deferred.³² The Department is pleased that Minnesota Power reproduced Table 6 - Business Case Summary from the initial IDP with this updated change.³³ The Department provides Table 4 to demonstrate the dramatic impact caused by this change, including the shift of Wrenshall and Thomson to a project with a positive benefit-cost ratio. The Department encourages MP to continue to utilize this approach to calculated avoided capital cost benefits in future NWA analyses.

Table 4: Truncated business case summary with updated avoided capital cost methodology

Project	Total Net Present Value Net Benefits		Benefit-Cost Ratio	
	<i>Original</i>	<i>Updated</i>	<i>Original</i>	<i>Updated</i>
Kerrick and Askov	\$5,001,190	\$8,104,937	1.88	2.42
Wrenshall and Thomson	-\$1,756,525	\$33,342	0.85	1.00
Silver Bay 271 or 277	-\$1,373,185	-\$487,963	0.75	0.91
Silver Bay 271 and 277	-\$5,661,647	-\$4,776,425	0.42	0.51

³² Department initial comments at pages 9-10.

³³ MP reply comments at pages 6-7.

b. Providing CBAs for Programs

The Department appreciates that Minnesota Power provided the cost-benefit analyses for the Central Area Non-Wire Alternatives. However, the Cloquet NWA solution is not included in the provided workpapers.

The Department recommends that the Commission direct MP to provide the CBA for the Cloquet Area project be provided through a supplemental filing, to be provided within 180 days of the Commission's final Order in this proceeding.

iv. Resiliency Metrics

In its initial comments in this proceeding, the Department recommended that the Commission direct Minnesota Power to develop a suite of metrics to track resiliency. The Department begins by clarifying this recommendation, which was written with a typographical error. The recommendation in initial comments was provided as follows: "The Department recommends the Commission direct Minnesota Power to develop a suite of metrics to track resiliency, including SAIDI and SAIFI, MEDs, and other metrics to the extent warranted."³⁴

The Department clarifies that the reference to major event days (MEDs) in this recommendation is incorrect. The correct statement of this recommendation is presented below:

The Department recommends the Commission direct Minnesota Power to develop a suite of metrics to track resiliency, including SAIDI with MEDs and SAIFI with MEDs, and other metrics to the extent warranted.

The Department maintains this recommendation in these reply comments.

F. BENEFICIAL ELECTRIFICATION AND RELATED ISSUES

The Department notes that while the Company is required to include in its IDP information about distributed generation and EVs, it is not similarly obligated to address beneficial electrification. Yet electrification of heat and cooling and other beneficial electrification is key to achieving the state's climate policy goals. As such, the Department requested in its initial comments that MP provide a plan for accelerating beneficial electrification and to provide forecasts of the expected grid impacts of this beneficial electrification. At minimum, the Department is requesting that MP provide the same level of information about beneficial electrification as it did for distributed generation and EVs.

The Department observes that some of the beneficial electrification loads present much bigger challenges for grid management than do electric vehicles given that some loads are relatively impervious to load-shifting. For example, it would be unacceptable to shift cooking load to off-peak hours. The coldest part of the day is at night when heat pump loads will be at their highest and for

³⁴ Department initial comments at page 25.

longer durations, which is coincident with the ideal electric vehicle charging window. It is similarly unacceptable to expect long durations without heat input during the coldest days of winter, which may be coincident with future peak loads.³⁵ Electric-heating-only customers do not have the option to cycle their heat, while dual fuel applications offer more grid adaptability, but also require significantly more planning from the Company. Commercial and industrial electrification poses even greater challenges for managing the distribution grid. Further, long, rural feeders with many homes that rely on propane, fuel oil, or other heating fuels may not be ready to handle increased adoption of beneficial electrification technologies. These examples all illustrate the importance of planning for these new loads now, to incorporate future beneficial electrification into grid planning to avoid costly grid upgrades later.

The Department is not interested in repeating the beneficial electrification discussion provided in MP's ECO filing. The information requested by the Department is supplemental to MP's ECO filing. At minimum, the Department expects the Company to determine the number of beneficial electrification devices at a system level, and ideally on each feeder. The company should also share historical adoption rates, ideally at each feeder, and forecast beneficial electrification rates for at least a system-wide level. These forecasts should be used to identify feeders at risk of being unable to supply power to support the increased adoption of beneficial electrification technologies. Ideally, this exercise should be combined with EV forecasting to understand the interactions between these technologies. In fact, IDP Filing Requirement 3.F.3 provides a roadmap for this exercise:

Minnesota Power shall provide a discussion of how it plans to optimize EV benefits, including a discussion of how to align charging with periods of lower customer demand and higher renewable energy production and by improving grid management and overall system utilization/efficiency.

Beyond the system-level snapshot of beneficial electrification, the Commission's order from Docket E,G-999/CI-22-624 specifically mentions IDPs and beneficial electrification (other electrification measures) in its order, as reflected by the inclusion of IDP Notice Topic 5:

The utilities shall maximize the benefits of the Inflation Reduction Act in future resource acquisitions and requests for proposals in the planning phase, petitions for cost recovery through riders and rate cases, resource plans, gas resource plans, integrated distribution plans, and Natural Gas Innovation Act innovation plans. In such filings, utilities shall discuss how they plan to capture and maximize the benefits from the Act, and how the Act has impacted planning assumptions including (but not limited to) the predicted cost of assets and projects and the adoption rates of electric vehicles, distributed energy resources, and other electrification measures.

³⁵ Great Plains Institute and the Center for Energy and Environment. *Decarbonizing Minnesota's Natural Gas End Uses: Stakeholder Process Summary and Consensus Recommendations* (July 2021).

As the IDP is the central reporting mechanism for understanding all critical developments on the distribution grid, the IDP should at least include a discussion of how the IRA is impacting the distribution grid. As discussed in Docket E,G-999/CI-22-624, the Company has an obligation to ensure that the benefits of the IRA are maximized to ensure value to ratepayers. A beneficial electrification plan is expected to be heavily influenced by the IRA. Further, while the ECO Program could potentially be the appropriate venue for the inclusion of tracking all beneficial electrification IRA benefits, the ECO Program will not administer federal and state rebate programs and tax incentives. Beneficial electrification will be addressed in gas utilities' Natural Gas Innovation Act (NGIA) and Integrated Resource Plans (IRP)s. The complexity and interconnectedness of beneficial electrification planning necessitates a broader perspective and plan for the deployment of these programs. This would either require a modification of the ECO Program scope or would require a filing in non-ECO docket. The Department is not taking a position on the proper venue for a plan, but simply advocates for the creation of a plan that takes a broader perspective on all federal and state funding to ensure that ratepayers receive the maximum value from the IRA. Regardless of whether this plan is filed in this docket or another, the plan should be reported in the IDP. The Department welcomes a broader discussion about how beneficial electrification planning should be conducted and in which dockets information should be reported.

While the Department understands that the Commission's September 12th, 2023 Order did not allow sufficient time for the Company to include IRA impacts in its IDP filing, the Department requests the supplemental filing to ensure that IRA benefits are maximized by planning before the IRA-funded programs are released. Programs such as HOMES, HEAR³⁶ and the State Heat Pump Rebate³⁷ will likely require energy audits and a triage system of energy efficiency improvements that need to happen before a heat pump could be installed. This will require the development of expertise to physically deliver energy audits, but also to organize a system to deliver energy bills and coordinate and fund energy audits to support the program. The Company should be planning ahead of time to educate its partners, build internal staff capacity, and have a plan in place for how to maximize the benefits of the new IRA programs.

While MP stated in reply comments that it does not currently have fuel switching measures in its current ECO plan, this lack does not negate the need to plan for electrification. As discussed in the Department's initial comments, there are significant potential fuel savings for customers that use fuels other than natural gas for heating, and particularly for customers whose primary heating source is electric resistance heating. The latter case is not fuel switching, but is nonetheless within the ECO program. Further, given the favorable economics of fuel switching, MP has an obligation to further explore the benefits of offering fuel switching incentives in the proposed Beneficial Electrification Plan. If the Company decides not to offer incentives, it should clearly justify the reasoning for this decision. Further, in the absence of fuel switching rebates, the IRA still offers tax credits that incentivize heat pump adoption. These incentives for beneficial electrification will affect MP's distribution grid.

³⁶ Minnesota Department of Commerce. "Home Energy Rebates," (last updated February 12, 2024). Available at: <https://mn.gov/commerce/energy/consumer/energy-programs/home-energy-rebates.jsp>.

³⁷ Minnesota Department of Commerce. "Residential Heat Pump Rebate Program," (last updated February 8, 2024). Available at: <https://mn.gov/commerce/energy/consumer/energy-programs/heat-pump.jsp>.

The need for beneficial electrification planning is further justified by MP, as MP stated in its reply comments:

While the ECO Act was an important step in advancing energy policy in Minnesota, it did create administrative complexity that many stakeholders expressed concerns about. As a result, a coalition of utilities, advocates, and lawmakers worked together in 2024 to propose additional modifications to the ECO Act through the legislature.³⁸

The ECO program offers just one avenue for MP to potentially accelerate beneficial electrification, which already spurred action by the Company to mitigate administrative complexity. Other paths toward electrification may also increase administrative complexity. The Company should prepare for this complexity in advance of program rollout to optimize the benefit for ratepayers. Given that the Federal HOMES/HEAR and State Heat Pump rebate programs are income-based, MP should identify who its income-qualified customers are, and how to ensure equity in the distribution of incentives. Further resources are needed to educate partners and customers on how to navigate the complex web of federal and state rebates, federal tax credits, and utility rebates—and to ensure that funding is not double counted in any of these programs. Without this support for customers, there is a significant risk that customers will not succeed in taking advantage of the incentives available to them and end up liable for additional expenses that they had never planned on at the point of sale. Mitigating this risk requires a system to be in place to ensure internal checks on the workflow and process of which funding is eligible, which funding is awarded, and how the cash flow of rebates is directed.

A useful beneficial electrification plan would address these immediate needs. Like the TEP, there is a much higher potential for information to be shared about beneficial electrification throughout all of the regulated utilities' territories. The State of Colorado has implemented a program that requires much more comprehensive data sharing requirements than those discussed already.³⁹ Adoption of such a program would bring beneficial electrification planning more in line with TEPs.

Finally, the Department seeks to reiterate its initial message that the purpose of beneficial electrification planning at this stage is to simultaneously save ratepayers money and reduce carbon emissions. These goals can only be accomplished with proactive grid planning and engagement to ensure that the unprecedented amount of funding available for beneficial electrification is not underutilized.

³⁸ MP Reply Comments at 2.

³⁹ Colorado Revised Statutes 2023. Title 40 Statute 3.2-109 "Beneficial electrification plans for electric utilities." Available at: [C.R.S. 40-3.2-109](https://leg.colorado.gov/statutes/2023/40/3.2-109).

IV. RECOMMENDATIONS

The Department appreciates the opportunity to comment further on MP's 2023 IDP and TEP. The Department makes the following final recommendations:

- 1. The Department recommends that the Commission accept Minnesota Power's 2023 IDP, subject to certain modifications.***
- 2. The Department recommends that the Commission approve Minnesota Power's 2023 TEP.***
- 3. The Department recommends that the Commission clarify the role of the IDP.***
- 4. The Department recommends that the Commission direct MP to file separate cost-benefit analyses for FLISR, the Smart Sensor Program, OMS, and GIS, through supplemental filings, to be provided within 180 days of the Commission's final Order in this proceeding.***
- 5. The Department recommends that the Commission direct MP to provide a proposal for measuring the capacity, reliability, ratepayer, and equity impacts of its distribution grid investments in its next IDP. This proposal should specifically address the level of granularity at which MP will evaluate these impacts for each budget category, indicating for each category whether MP plans to measure these impacts at the level of the budget category, program, project, or at some other level of resolution, or not at all, and specifically accounting for the impact of any expected changes to IDP budget categories.***
- 6. The Department recommends that the Commission provide clarification as to whether the current NWA analysis conducted by the Company is compliant with Filing Requirement 3.E.2.d and 3.E.2.b. If the Commission believes that the current analysis is not compliant, the Department recommends that the Commission require the Company to file a compliant NWA process in its 2025 IDP.***
- 7. The Department recommends that the Commission require MP to consider demand response, energy efficiency, and renewable generation as part of its future NWA process in its next IDP.***
- 8. The Department recommends that MP calculate future NWA ratepayer disbenefit categories based on the ratepayer cost of outages rather than in the calculated categories of "Compliance Risk," "Power Quality Consequences," and "Improved Customer Satisfaction."***
- 9. The Department recommends that the Commission direct MP to provide the CBA for the Cloquet Area project be provided through a supplemental filing, to be provided within 180 days of the Commission's final Order in this proceeding.***

- 10. The Department recommends the Commission direct Minnesota Power to develop a suite of metrics to track resiliency, including SAIDI with MEDs and SAIFI with MEDs, and other metrics to the extent warranted.***
- 11. The Department recommends the Commission order MP to file a supplemental filing that proposes a plan to accelerate beneficial electrification for its customers, including a discussion of how to incentivize dual fuel adoption, and provide forecasts of expected grid impacts of the same.***



Minnesota Department of Commerce
85 7th Place East | Suite 280 | St. Paul, MN 55101
Information Request

Docket Number: E017/M-23-258

Requested From: Jess McCullough, Public Policy Advisor II, MP

Type of Inquiry: General

☐ Nonpublic ☒ Public

Date of Request: 3/12/2024

Response Due: 3/22/2024

SEND RESPONSE VIA EMAIL TO: Utility.Discovery@state.mn.us as well as the assigned analyst(s).

Assigned Analyst(s): Daniel Tikk, Ari Zwick

Email Address(es): daniel.tikk@state.mn.us, ari.zwick@state.mn.us

Phone Number(s): 651-539-1058, 651-539-1675

ADDITIONAL INSTRUCTIONS:

Each response must be submitted as a text searchable PDF, unless otherwise directed. Please include the docket number, request number, and respondent name and title on the answers. If your response contains Trade Secret data, please include a public copy.

Request Number:	42
Topic:	BCA Files
Reference(s):	2023 IDP, Appendix F

Request:

On p. 4 of its BCA Framework Report, Black & Veatch presents 4 files:

1. BCA Framework & Summary Final
2. Circuit Backup Calculations Final
3. FLISR Calculations Final
4. IVVC Calculations Final

Please provide each of these files. Where applicable, for any and all parts above, please provide the requested data in a Microsoft Excel executable format with all links and formulae intact. If any of these links target an outside file, please provide all such additional files.

Response:

Please see the attached excel spreadsheets. Please note, during review of these spreadsheets by Black & Veatch, an error was found in the FLISR calculations spreadsheet. This resulted in an increase to the FLISR Benefits to the Kerrick and Wrenshall Scenario. The overall NPV for Kerrick scenario stayed positive and the overall NPV for the Wrenshall scenario stayed negative.

To be completed by responder

Response Date: 4/5/2024

Response by: Nicholas Boldt – Engineer Senior

Email Address: nboldt@mnpower.com

Phone Number: 218-355-2822



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Email Address(es): daniel.tikk@state.mn.us, ari.zwick@state.mn.us

Phone Number(s): 651-539-1058, 651-539-1675

ADDITIONAL INSTRUCTIONS:

Each response must be submitted as a text searchable PDF, unless otherwise directed. Please include the docket number, request number, and respondent name and title on the answers. If your response contains Trade Secret data, please include a public copy.

Request Number:	43
Topic:	BCA Framework Report
Reference(s):	2023 IDP, Appendix F

Request:

On p. 6 of its BCA Framework Report regarding avoided capital costs, Black & Veatch states "These benefits were included in year 10 as a one-year benefit." Further, a 20-year NPV system boundary was used to calculate benefits and the choice of 10 years is not explained. Please explain the rationale behind these modeling choices.

Response:

In 2021, the Non-Wires Alternatives Study and the development of BCA Framework was used by Minnesota Power to gain experience with the evaluation, development, and justification of non-wire solutions. Even though the study focused on specific scenarios, no traditional solutions were planned in Minnesota Power's long-range plan for each of the scenarios. The estimated capital costs for traditional solutions for each scenario were added in year 10 of the 20-year NPV boundary to act as a midpoint in the avoided capital costs benefits.

To be completed by responder

Response Date: 4/5/2024

Response by: Nicholas Boldt – Engineer Senior

Email Address: nboldt@mnpower.com

Phone Number: 218-355-2822



Minnesota Department of Commerce
85 7th Place East | Suite 280 | St. Paul, MN 55101
Information Request

Docket Number: E017/M-23-258

Requested From: Jess McCullough, Public Policy Advisor II, MP

Type of Inquiry: General

☐ Nonpublic ☒ Public

Date of Request: 3/12/2024

Response Due: 3/22/2024

SEND RESPONSE VIA EMAIL TO: Utility.Discovery@state.mn.us as well as the assigned analyst(s).

Assigned Analyst(s): Daniel Tikk, Ari Zwick

Email Address(es): daniel.tikk@state.mn.us, ari.zwick@state.mn.us

Phone Number(s): 651-539-1058, 651-539-1675

ADDITIONAL INSTRUCTIONS:

Each response must be submitted as a text searchable PDF, unless otherwise directed. Please include the docket number, request number, and respondent name and title on the answers. If your response contains Trade Secret data, please include a public copy.

Request Number:	44
Topic:	BCA Assumptions
Reference(s):	2023 IDP, Appendix F

Request:

On pp. 6-13 its BCA Framework Report, Black & Veatch presents a discussion of the cost and benefit categories used to calculate its BCAs. Please provide a discussion of the key assumptions made to quantify relevant metrics and provide a discussion of how these metrics were monetized.

Response:

Key assumptions to quantify relevant metrics and how the metrics were monetized can be found in the excel spreadsheets provided for DOC IR 042.

To be completed by responder

Response Date: 4/5/2024

Response by: Nicholas Boldt – Engineer Senior

Email Address: nboldt@mnpower.com

Phone Number: 218-355-2822

CERTIFICATE OF SERVICE

I, Sharon Ferguson, hereby certify that I have this day, served copies of the following document on the attached list of persons by electronic filing, certified mail, e-mail, or by depositing a true and correct copy thereof properly enveloped with postage paid in the United States Mail at St. Paul, Minnesota.

Minnesota Department of Commerce
Comments

Docket No. E015/M-23-258

Dated this **10th** day of **May 2024**

/s/Sharon Ferguson

[illegible]

First Name	Last Name	Email	Company Name	Address	Delivery Method	View Trade Secret	Service List Name
Jess	McCullough	jmccullough@mnpower.com	Minnesota Power	30 W Superior St Duluth, MN 55802	Electronic Service	No	OFF_SL_23-258_M-23-258
David	Moeller	dmoeller@allete.com	Minnesota Power	30 W Superior St Duluth, MN 558022093	Electronic Service	No	OFF_SL_23-258_M-23-258
Generic Notice	Residential Utilities Division	residential.utilities@ag.state.mn.us	Office of the Attorney General-RUD	1400 BRM Tower 445 Minnesota St St. Paul, MN 551012131	Electronic Service	Yes	OFF_SL_23-258_M-23-258
Will	Seuffert	Will.Seuffert@state.mn.us	Public Utilities Commission	121 7th PI E Ste 350 Saint Paul, MN 55101	Electronic Service	Yes	OFF_SL_23-258_M-23-258
Dean	Taylor	dtaylor@pluginamerica.org	Plug In America	6380 Wilshire Blvd, Suite 1000 Los Angeles, CA 90048	Electronic Service	No	OFF_SL_23-258_M-23-258