



Minnesota Power 2021 Integrated Resource Plan

Stakeholder Process Final Report

Docket No. E015/RP-15-690

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Convened by the Great Plains Institute, Center for Energy and Environment, and Lasky Consulting

About this Report

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USAGE OF THIS REPORT

This document provides a summary of the stakeholder engagement process for Minnesota Power's 2021 integrated resource plan (IRP). It is intended to support, but not replace, important discussions within the formal regulatory process. Comments captured in the meeting notes attached to this document should not be attributed to any particular individual or organization and are not intended to limit the ability of any party to take any position in future regulatory proceedings.

ACKNOWLEDGEMENTS

The Great Plains Institute, Center for Energy and Environment, and Lasky Consulting would like to thank the participants for their significant time commitment and thoughtful engagement throughout this process. In addition, we would like to thank Minnesota Power for the opportunity to serve as third-party facilitators for these important discussions.

ABOUT THE FACILITATORS

Great Plains Institute: A nonpartisan, nonprofit organization, the Great Plains Institute is transforming the energy system to benefit the economy and environment. Working across the US, we combine a unique consensus-building approach, expert knowledge, research and analysis, and local action to find and implement lasting solutions. Our work strengthens communities and provides greater economic opportunity through creation of higher paying jobs, expansion of the nation's industrial base, and greater domestic energy independence while eliminating carbon emissions. Learn more at www.betterenergy.org.

Center for Energy and Environment: Center for Energy and Environment is a clean energy nonprofit with special expertise in energy efficiency that stretches back nearly 40 years. Center for Energy and Environment provides a range of practical and cost-effective energy solutions for homes, businesses, and communities to strengthen the economy while improving the environment. More information is available at www.mncee.org.

Lasky Consulting: Randy Lasky founded Lasky Consulting in July 2018 following a 40+ year career in business and community development. In his previous role as President of the Northspan Group Inc., he provided facilitation support services and helped launch three community advisory panels (CAPs) founded by Minnesota Power in 2012. The CAPs were established in sub-regional areas around Minnesota Power's generation facilities in Cohasset, Hoyt Lakes, and Schroeder. They provide an opportunity for diverse community leaders and other stakeholders to come together on a regular basis to share information; learn about Minnesota Power and its facilities, plans, and challenges; communicate and build trust; and address other issues and opportunities of local and regional importance. ItasCAP and East Range CAP continue to meet and are facilitated by Northspan.

NOTE: GPI, CEE, and Lasky Consulting committed to serving as neutral, third-party conveners, and therefore will not be parties to the docket that will consider Minnesota Power's 2021 IRP.

ABOUT THE E21 INITIATIVE

The “e21” in e21 Initiative stands for “an electric system for the 21st century.” Since its inception in 2014, the e21 Initiative has sought to advance a decarbonized, customer-centric, and technologically modern electric system in Minnesota by ensuring that utility business models are aligned with the public interest. e21 works by convening diverse groups of stakeholders to foster learning, collaboration, and problem-solving around complex regulatory proceedings and utility proposals. In addition, the e21 Initiative seeks to keep Minnesota on the national and global forefront of energy innovations that contribute to the common good.

One of the recommendations coming out of the e21 Initiative Phase I in 2014 was to “support the development of forward-looking solutions through more collaborative stakeholder processes in advance of the quasi-judicial hearings that most often characterize regulatory proceedings.”¹ This process is intended to support that recommendation by enabling an upfront, collaborative stakeholder process in advance of the formal regulatory proceeding for Minnesota Power’s 2021 IRP.

In addition, the e21 Initiative Phase II Report included a white paper with several broadly supported recommendations for improving resource planning in Minnesota, including “increased collaboration between the utility, regulators, intervenors, customers, and the communities served by the utility;” it also suggested that the process could be improved if “important inputs to a resource plan can potentially be worked out between the utility, regulatory staff, and likely intervenors prior to filing, such as key assumptions, modeling inputs and sensitivities, and planning scenarios.”² This process sought to fulfill both recommendations, with broad stakeholder engagement to support increased collaboration, and a separate modeling subcommittee to discuss modeling assumptions prior to filing.

The e21 Initiative is co-convened by the Great Plains Institute and Center for Energy and Environment. In addition, Minnesota Power was a founding partner of the initiative. More information about e21 is available at www.e21initiative.org

QUESTIONS ABOUT THIS REPORT

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¹ Great Plains Institute, *e21 Initiative Phase I Report: Charting a Path to a 21st Century Energy System in Minnesota* (December 2014), 4: https://e21initiative.org/wp-content/uploads/2018/01/e21_Initiative_PhaseI_Report_2014.pdf.

² Great Plains Institute, *e21 Initiative Phase 2 Report: Integrated Systems Planning* (December 2016), 56: https://e21initiative.org/wp-content/uploads/2019/09/e21_Initiative_PhaseII_Report_2016-integrated-Systems-Planning.pdf.

Table of Contents

- I. Background 1**
 - Integrated Resource Planning in Minnesota 1
 - Context for Minnesota Power’s 2021 IRP 2
 - This Stakeholder Engagement Process 4
- II. Initial Education and Outreach Meetings..... 4**
 - Northern Minnesota Meetings..... 5
 - Twin Cities Meetings 6
 - Outcomes 6
 - Northern Minnesota Meetings 6
 - Twin Cities Meetings 7
- III. Joint Meetings 7**
 - Objectives..... 7
 - Participants..... 9
 - List of Meetings 10
 - The IRP Issue Map..... 11
 - Structure of the Map..... 12
 - Issue Areas and Issues..... 12
 - Forward-Looking Rating Scales 13
 - Using the Map 13
 - Issues 15
 - Issue Area: Customers 16
 - Issue 1: Customer Options 17
 - Issue 2: Large Power and Municipal Utility Competitiveness 18
 - Issue 3: Residential Affordability 19
 - Issue 4: Reliability, Quality, and Resiliency 20
 - Customer Issue Area Appendix 21
 - Issue Area: Environment 22
 - Issue 5: Direct Impacts..... 23
 - Issue 6: Indirect impacts 23
 - Issue 7: Environmental Justice 24
 - Issue 8: Climate / Greenhouse Gas emissions..... 26

Issue Area: Host Community	26
Issue 9: Tax base.....	27
Issue 10: Jobs	29
Issue 11: Large Industry Impacts.....	31
Issue 12: Community impacts.....	32
Host Community Issue Area Appendix:	34
Issue Area: Utility	34
Issue 13: Responsibility / privilege to serve.....	35
Issue 14: Planning and Operations, Utility Health, and Regional stability	36
Reflections on the Process	36
What is your top takeaway from the process so far?	37
What remaining questions do you have?	39
IV. Modeling Subcommittee	40
List of Meetings	41
Participants.....	42
Assumptions Discussed.....	43
Planning Futures and Resource Adequacy.....	43
Load Forecast	43
Conservation	44
Electric Vehicles.....	44
Distributed Solar.....	44
Utility-Scale Wind and Solar	45
Capital Costs for Renewables and Batteries.....	45
V. Conclusion.....	45
VI. Attachments.....	48

I. Background

Integrated Resource Planning in Minnesota

Resource planning is a process that energy utilities undertake to select the appropriate energy resources necessary to meet customers' energy needs over a given period of time. Resource planning is often described as the process by which utilities select the size, type, and timing of the resources that will make up their future energy supply. Utilities typically begin the process by forecasting energy needs over the planning period. They then use a modeling software to determine the mix of energy resources, the appropriate size of the resources, and the time at which each resource will be needed to meet customers' energy demand. For electric utilities, energy resources can include supply-side resources, like power plants and utility-scale wind and solar; distributed resources, like customer-sited rooftop solar; and demand-side resources, like energy efficiency and demand response.

Utility investments in energy resources are large, long term, and impactful. Energy resources not only affect the energy supply, but can also have direct and indirect impacts on the environment, the economy, the workforce, and communities. Utilities often use a combination of modeling tools and qualitative methods to consider the variety of implications of energy resource investments throughout the resource planning process.

In Minnesota, electric utility resource planning is overseen by the Minnesota Public Utilities Commission (Commission) through a public-facing docketed process. Electric utilities are required to file an integrated resource plan (IRP) with the Commission once every two years, though the two-year rule can be varied at the Commission's discretion. An IRP is a forward-looking document that lays out the mix of energy resources that a utility intends to use to meet customer energy demand over a 15-year period.³

The requirements and rules for IRPs are described in Minnesota Statute 216B.2422⁴ and in Minnesota Administrative Rule Chapter 7843.⁵ The Commission evaluates utility IRPs on their ability to do the following:

- Maintain or improve the adequacy and reliability of utility service;
- Keep customers' bills and utility rates as low as practicable, given regulatory and other constraints;
- Minimize adverse socioeconomic effects and adverse effects upon the environment;
- Enhance the utility's ability to respond to changes in the financial, social, and technological factors affecting its operations; and

³ "Resource Planning," Minnesota Public Utilities Commission (website), accessed January 13, 2021, <https://mn.gov/puc/energy/resource-planning/>.

⁴ Minn. Stat. § 216B.2422, <https://www.revisor.mn.gov/statutes/cite/216B.2422>.

⁵ Minn. R. 7843, <https://www.revisor.mn.gov/rules/7843/>

- Limit the risk of adverse effects on the utility and its customers from financial, social, and technological factors that the utility cannot control.⁶

The Minnesota IRP process allows for interested parties to review a utility's resource plan and provide input to the Commission and the utility through written and oral comments. This process begins when a utility files an IRP to a docket. Once filed, interested parties may review the IRP and provide written comments to the docket through at least one written comment period and one written reply comment period. Once the written record is complete, the Commission schedules a public hearing, at which the utility and parties to the docket may appear to provide further oral comments and answer Commission questions. Ultimately, the Commission makes a decision about the IRP at the public hearing and follows that oral decision with a written order in the docket. For investor-owned utilities like Minnesota Power, the Commission may reject, approve, or modify the IRP.⁷

Several recent and upcoming IRPs in Minnesota are of particular importance to parties and the public. Minnesota, like many states across the nation, is in the midst of a major transition in how its energy is supplied. Nearly all of Minnesota's existing power plants will be eligible for retirement in the next 20 years. The age of Minnesota's electric generation fleet, paired with recent advancements in technology, changes in the economics of different energy resources, and environmental goals of utilities and their customers, may increase the pace of that transition.

Given this energy transition, the current Minnesota Power IRP and other upcoming IRPs could have significant implications for the state's future energy mix, which in turn may impact the state's economy, workforce, environment, and consumer energy costs, as well as communities that are home to existing power plants.

Context for Minnesota Power's 2021 IRP

Minnesota Power has made significant changes to its electric generation fleet in recent years, including retiring or refueling seven of its nine coal-fired generation units. Today, it generates 50 percent of its electric supply with renewable energy and has only one large baseload power plant on its system, the Clay Boswell Energy Center (Boswell), which has two generating units in operation. These changes to Minnesota Power's generation fleet have had and will have wide-ranging and important implications for the utility system, the environment, utility employees and workers, and communities.

Recognizing the foregoing, Minnesota Power began engaging its stakeholders in 2012 to better understand their concerns and to support the communities in its service territory. The utility launched three community advisory panels (CAPs) in sub-regional areas around its generation facilities in Cohasset, Hoyt Lakes, and Schroeder. The CAPs, which continue to meet regularly,

⁶ Minn. R. 7843.0500.

⁷ "Resource Planning," Minnesota Public Utilities Commission (website), <https://mn.gov/puc/energy/resource-planning/>.

provide an opportunity for diverse community leaders and other area stakeholders to come together to do the following: foster collaboration; share information; learn about Minnesota Power and its facilities; address energy plans, challenges, and opportunities; and communicate and build trust on a sustained basis. In particular, the East Range CAP in Hoyt Lakes and ItasCAP in the Cohasset/Grand Rapids area have played an integral role in this 2021 IRP stakeholder engagement process.

The company's forthcoming IRP is of significant interest to many stakeholders because it may determine the retirement dates of the remaining two Boswell generating units. Both units will become fully depreciated in 2035 and 2036. In addition, as part of its approval of resources following Minnesota Power's 2015 IRP, the Commission required that the next IRP include the following:

- A baseload retirement study that thoroughly evaluates and includes a plan for the early retirement of its last two remaining coal-fired generation units at the Boswell plant.
- A securitization plan that could be used to mitigate ratepayer impacts of an early retirement of one or both of the two remaining coal-fired generation units at the Boswell plant.
- A proposed bidding process for supply-side acquisitions of 100 megawatts or more lasting longer than five years for Commission review and possible approval.
- Consultation with stakeholders regarding the inputs and parameters for the IRP modeling and analysis.⁸

The requests for a baseload retirement study and securitization plan both point to a desire from the Commission to consider retirement of the remaining two Boswell units earlier than their accounting end-of-life dates. For the host community and region in which it is located, the Boswell plant provides significant economic and socioeconomic benefits. Additionally, since Boswell is the last baseload power source on Minnesota Power's system, its retirement could be particularly challenging given Minnesota Power's unique customer make-up and load profile—over 70 percent of the utility's electric load is attributable to a small number of very large industrial and mining customers.

At the same time, the Boswell plant is among the last remaining coal plants in the state and retirement of the plant provides the opportunity to replace it with less carbon-intensive energy resources, bringing Minnesota Power and Minnesota that much closer to a decarbonized electric system.

In addition, the requirement to consult with stakeholders on the modeling inputs and parameters offered an opportunity for upfront collaboration between the utility and its stakeholders, with the hope of focusing dialogue about the IRP on which path to take based on the modeling, rather than on whether the modeling was accurate or not. Discussions about the modeling are described in further detail under the Modeling Subcommittee section of this report.

⁸ Minnesota Public Utilities Commission, *Order In the Matter of Minnesota Power's Petition for Approval of the Energy Forward Resource Package*, Docket Number E-015/AI-17-568 (January 24, 2019).

This Stakeholder Engagement Process

Following its history of stakeholder engagement, Minnesota Power initiated a process in 2019 to engage a broad range of interested stakeholders to solicit input that could inform the development of its next IRP filing, including customers and communities in its service territory, as well as individuals and entities who commonly engage in proceedings before the Commission to represent the perspectives of residential and small business customers, large commercial and industrial customers, and the environment.

Given the weight of the issues at hand, Minnesota Power determined that it was important to bring in third-party, neutral consultants to facilitate productive and open communication between its diverse stakeholders and the utility, and to identify stakeholder concerns and priorities that could inform development of the IRP. Minnesota Power subsequently hired the Great Plains Institute (GPI), Center for Energy and Environment (CEE), and Lasky Consulting, hereby collectively referred to as the facilitators, to design and execute a robust stakeholder engagement process for the IRP.

The facilitators designed an engagement process with the following three general components:

1. A series of initial education and outreach meetings with multiple different stakeholder groups in both Northern Minnesota and the Twin Cities.
2. A subsequent series of meetings with a joint group of volunteer representatives from each of the initial education and outreach meetings, representing a broad and diverse range of stakeholder perspectives.
3. A separate modeling subcommittee focused on discussing technical modeling assumptions and methodologies for the IRP.

This final report incorporates and builds upon the interim stakeholder engagement process report that was included in Minnesota Power's November 2, 2020 compliance filing in Commission Docket No. E015/RP-15-690 (Attachment D). In particular, this document adds the outcomes of the stakeholder engagement process, including the identification of and definitions for 14 specific issues that the stakeholder group selected as important to consider for Minnesota Power's IRP, as well as an issue map that combines these 14 issues into a single visual to support understanding and discussion going forward.

Due to several constraints that are explained in more detail below, this process ultimately did not seek to develop specific resource planning solutions and strategies, however the facilitators hope that we have provided an opportunity for all stakeholders to share their perspectives, identify and define the most important issues at hand, and enable ongoing dialogue amongst all parties that acknowledges the complexity of the situation surrounding this resource plan.

II. Initial Education and Outreach Meetings

To commence stakeholder engagement, the facilitators convened different groups of stakeholders separately for eight initial education and outreach meetings from November 2019 to March 2020, with five in Minnesota Power's service territory and three in the Twin Cities. These meetings were intended to provide a shared base of knowledge about resource planning

in general and the Commission's requirements for Minnesota Power's 2021 IRP filing, as well as to identify issues for further exploration in the second phase of the stakeholder engagement process.

Northern Minnesota Meetings

The facilitators convened four initial education and outreach meetings in Northern Minnesota, followed by a fifth meeting of the representatives from each of the initial four that volunteered to participate in the joint meetings that would follow. The general topics covered at each meeting are listed below. Detailed attendance lists, agendas, slide decks, and notes from each meeting are included in the attachments to this report.

- Itasca Community Advisory Panel (November 26, 2019 in Grand Rapids, MN)*
 - Presentation and Q&A on 2021 IRP and baseload retirement study requirements and timeline, the current state of Minnesota Power's system and service territory, policy trends and major topics of interest.
 - Discussion to identify stakeholders' key considerations for Minnesota Power's 2021 IRP filing, as well as key remaining questions.
- Duluth Morning Meeting (December 9, 2019 in Duluth, MN)*
 - Same topics as 11/26 Itasca Community Advisory Panel
- Duluth Afternoon Meeting (December 9, 2019 in Duluth, MN)*
 - Same topics as 11/26 Itasca Community Advisory Panel
- East Range Community Advisory Panel (December 12, 2019 in Biwabik, MN)*
 - Same topics as 11/26 Itasca Community Advisory Panel
- Northern Regional Meeting (January 28, 2020 in Chisholm, MN)**
 - Reviewed the input and priorities that arose in the four previous Northern Minnesota meetings and facilitated discussion to refine that input.
 - Presentation and Q&A on:
 - The process for upcoming joint meetings
 - Economic impacts of a Boswell plant retirement under multiple scenarios
 - National energy system trends and implications for resource planning

** Each of the four meetings marked with a single asterisk above was followed by a survey where participants in that meeting could review all of the considerations captured during the meeting, indicate which ones were their "must-have" considerations, and provide additional considerations that may not have been captured. The survey results have been included as an attachment to this report and are briefly summarized below.*

***The Northern Regional meeting included stakeholders from the previous four Northern Minnesota outreach meetings that volunteered for the "joint" meetings.*

Twin Cities Meetings

GPI and CEE also convened a series of three initial education and outreach meetings in the Twin Cities area, made up primarily of the organizations that typically participate in resource planning dockets at the Commission. This group covered the same information that was presented and discussed at the Northern Minnesota meetings, and went into greater depth on technical topics that were of interest to participants.

- Twin Cities Meeting 1 (December 4, 2019 in Minneapolis, MN)
 - Same topics as 11/26 Itasca Community Advisory Panel
- Twin Cities Meeting 2 (December 17, 2019 in Minneapolis, MN)
 - Presentation and Q&A on the local economic benefits of Boswell, and the related potential impacts of retirement.
 - Presentation and Q&A on how Minnesota Power conducts its load forecasting for the IRP (in response to stakeholder requests from the 12/4 Twin Cities meeting).
 - Discussion to refine the key considerations for the IRP that stakeholders began developing in the first meeting.
 - Discussion to identify stakeholder interests for discussion on transmission considerations/impacts in Meeting 3.
- Twin Cities Meeting 3 (March 3, 2020 in Minneapolis, MN)
 - Reviewed and refined the key considerations for the IRP that stakeholders began developing in the first Twin Cities meeting.
 - Presentation and Q&A on:
 - The process for the upcoming “joint” meetings
 - National energy system trends and implications for resource planning
 - Transmission and market considerations for Boswell retirement
 - Environmental impacts of Boswell and recent investments made in the plants

Outcomes

Northern Minnesota Meetings

At each of the first four meetings, in addition to a presentation from Minnesota Power staff on resource planning and subsequent discussion, facilitators asked attendees what questions or issues they felt should be considered in developing the resource plan. The responses were captured in notes taken on-screen during the meetings so that participants could ensure accuracy. Following each meeting, the facilitators sent a survey to attendees asking them to mark which questions or issues they believed must be considered, included, and addressed, if possible, in the IRP or the baseload retirement study. Survey participants also had the opportunity to add new considerations or issues in an open comment box.

The facilitators compiled the survey results into a set of lists that included comments from all four initial Northern Minnesota meetings, organized by the following themes:

- Community values (e.g., socioeconomic impacts, tax base, jobs)
- Customer values (e.g., industrial competitiveness, reliability, affordability, customer options)
- Environmental values (e.g., carbon and greenhouse gas emissions, air quality, landfill waste, water quality)
- Other values (e.g., grid impacts, national security and defense, local resources)
- Specific resource considerations (e.g., energy efficiency, demand response, electrification, renewables, storage, nuclear)
- Process suggestions (e.g., community outreach and engagement, economic impact studies, public relations and politics)

Each of these lists, which are attached to this report, included the comments as recorded during the source meeting where they originated, the percent and number of individuals from the source meeting who said that comment “must be considered, included, and addressed, if possible,” the specific meeting from which it originated, and a topical tag for organizational purposes. The lists were given to the participants in the first joint meeting to consider as they began identifying a priority list of issues for inclusion in the issue map, which is described in more detail below.

Twin Cities Meetings

The purpose of the Twin Cities meetings was to provide an opportunity for both Minnesota Power and stakeholders—primarily those who typically participate in the utility’s regulatory proceedings—to share and discuss the opportunities and challenges for the resource plan, many of which were carried forward into the joint meeting discussions and the modeling subcommittee.

In addition, the participants in these meetings developed a collective set of “must-have” and “nice-to-have” considerations for Minnesota Power to take into account with its analytical work to support the IRP. The complete list of must-haves and nice-to-haves is attached to this report. Many of the items in the list were taken up by the modeling subcommittee.

III. Joint Meetings

Objectives

The initial education and outreach meetings made clear that many stakeholders perceived Minnesota Power’s 2021 IRP to be uniquely at the convergence of serious potential impacts to consumers, communities, and the environment. In particular, the Boswell Energy Center, Minnesota Power’s last remaining coal plant and its largest source of baseload power generation, was a focal point for many stakeholders. There were several characteristics that contributed to the complexity of the conversation, including the following:

- Unlike many other utilities that have a significant portion of load attributable to residential customers, three quarters of Minnesota Power’s sales go to large commercial and industrial customers, which tend to have a need for nearly constant and very reliable

power. There were many different questions and perspectives shared in the initial education and outreach meetings as to whether the baseload power that the plant provides could reliably be provided by intermittent generation, and if so, at what cost.

- The Boswell Energy Center host community, Cohasset, and neighboring communities saw the plant as a critical asset to the Northern Minnesota economy, fearing that closing the plant would cause a devastating series of ripple effects where power prices go up, the largest employers in the region close or move elsewhere, and the regional economy deteriorates, ultimately leading to a significant degradation of the quality of life in Northern Minnesota.
- Many environmental and clean energy advocates wanted to see the Boswell Energy Center retired and replaced with renewable resources as soon as possible, pointing to the urgent need to reduce carbon and greenhouse gas emissions in order to avoid devastating climate impacts, in accordance with guidance from the Intergovernmental Panel on Climate Change.
- Many of the large industrial customers are trade-exposed, such that they compete in global markets and are particularly sensitive to the electricity rates that comprise a significant portion of their expenses. Moreover, the relatively small proportion of residential and commercial customers on Minnesota Power's system also made it difficult to spread out system costs across customer classes without impacting rates of those other customer classes.

With these challenges in mind, the facilitators thought it was most important to design a process where stakeholders could build mutual understanding of the many unique perspectives and considerations that were important to this resource plan and, if possible, begin to collaborate towards consensus-based solutions.⁹ In addition, the facilitators also wanted to ensure that, at minimum, the dialogue would inform Minnesota Power's considerations as the company conducted its resource planning efforts.

To accomplish this, the facilitators invited a joint group of volunteer representatives from the multiple Northern Minnesota and Twin Cities meetings to come together for a series of conversations to further explore the issues that were raised in the preceding meetings and to accomplish the following objectives:

- A. Build a shared understanding of the diversity of stakeholder perspectives, priorities, and concerns regarding Minnesota Power's IRP, including customer, community, and environmental concerns.
- B. Enable collaboration among stakeholders to identify key challenges and potential solutions for Minnesota Power's service territory that relate to resource planning.
- C. Inform considerations for the 2021 IRP and review and provide feedback to an early draft of the plan.

Importantly, as the process unfolded, the facilitators chose to focus on objective A and the first part of objective C—informing considerations for the IRP. There were several reasons for this.

⁹ As noted later in this report, there was not enough time in this process to discuss potential solutions.

The first was that the process was interrupted by the COVID-19 pandemic immediately after the first joint meeting. This required the facilitation team to redesign the process around a series of virtual meetings. In addition, the joint meetings were temporarily paused because the group included several representatives from local governments and companies who were either re-allocating their staffing resources to address immediate pandemic impacts or facing serious economic challenges that would inhibit their participation. In addition, the facilitators felt that amidst the immediate challenges of the pandemic it would be difficult for many parties to have a conversation about the long-term planning horizon of the IRP.

The second reason was that modeling and analysis to support dialogue around objective B would not be available in time. Originally, the process was designed to allow Minnesota Power to present draft modeling results to the group, as stated in objective C. This was important because in the initial education and outreach meetings, stakeholders had expressed divergent opinions about the benefits and drawbacks of different resource options, including cost-effectiveness, reliability, and technical feasibility; the facilitators did not want to convene a conversation about potential solutions without being able to rely on sound modeling and analysis to support productive dialogue. Following the initial impacts of the COVID-19 pandemic, Minnesota Power sought a six-month extension for the IRP, seeking to move the deadline to April 1, 2021. The Commission ultimately selected a new deadline of February 1, 2021, after which Minnesota Power told the facilitators that the company would not be able to present draft modeling and analysis results before the deadline.

Finally, and perhaps most importantly, the dialogue to support objective A took longer than planned. This was partly due to the challenge of convening a very sensitive conversation in a virtual format with a group of nearly 50 individuals, but the sheer breadth and depth of the fourteen issues also required a significant amount of time. Ultimately, the facilitators feel that this was time well spent, as it allowed all parties to develop a deeper understanding of a wide range of issues and perspectives before commencing the formal regulatory process. Moreover, the Commission's quasi-judicial format is well suited to sifting through the many details and considerations that will need to be weighed in considering this resource plan that so many stakeholders feel is consequential to the issues they care about most.

Participants

The joint group consisted of approximately 60 individuals representing a broad range of perspectives, including residents, small businesses, large commercial and industrial consumers, economic development organizations, labor unions, clean energy and environmental advocates, consumer advocates, local governments, tribes, schools and colleges, and state government agencies. All participating organizations are listed below and an attendance list for each meeting is attached to this report.

- Barr Engineering Co.
- BlueGreen Alliance
- Citizen's Climate Lobby Two Harbors
- Citizens Utility Board
- City of Cohasset
- City of Duluth
- City of Grand Rapids
- Clean Energy Economy Minnesota
- Cleveland-Cliffs Inc.
- Coalition of Utility Cities

- Department of Military Affairs
- Dovetail Partners
- Duluth Seaway Port Authority
- East Range Joint Powers Board
- Ecolibrium3
- Fond du Lac Band of Lake Superior Chippewa
- Fresh Energy
- Grand Rapids Area Chamber of Commerce
- Grand Rapids City Council
- Hedstrom Lumber Company
- IBEW Local 31
- Iron Mining Association of Minnesota
- Itasca Community College
- Itasca County
- Itasca Economic Development Corporation
- Laborers' International Union of North America
- Large Power Intervenors
- Minnesota Public Interest Research Group
- Minnesota Center for Environmental Advocacy
- Minnesota Chamber of Commerce
- Minnesota Department of Commerce
- Minnesota Public Utilities Commission*
- City of Mountain Iron
- Northspan Group Inc.
- Range Association of Municipalities and Schools (RAMS)
- Sierra Club – Minnesota Chapter
- UPM/Blandin Paper Company
- Vote Solar
- Western Lake Superior Sanitary District (WLSSD)
- Zabinski Consulting Services, LLC.

* *Commission staff participated as observers only.*

List of Meetings

The facilitators convened five joint meetings in total from March to November 2020. The first meeting was an all-day, in-person convening in Grand Rapids on March 9, 2020. The facilitators had planned to convene two more all-day, in-person meetings, however, due to the COVID-19 pandemic, the subsequent meetings were broken up into four virtual, half-day sessions. In addition, as noted above, the process was temporarily put on hold after the March 9 meeting because the group included several representatives from local governments and companies who were either re-allocating their staffing resources to address immediate pandemic impacts or facing serious economic challenges that complicated their participation.

The main agenda items for each meeting are listed below, and the complete agendas, slide decks, and notes are attached to this report. Importantly, the issue map that is referenced in some of the meeting agendas is explained in more detail later in this report.

- Joint Meeting 1 (March 9, 2020 in Grand Rapids, MN):
 - Stakeholder introductions and initial sharing of perspectives.
 - Formed topical small groups, each focused on one of the following four issue areas, that were tasked with identifying an initial list of the top issues in each area and developing a worst case to best case 5-point scale for each:
 - Customer
 - Community

- Utility
 - Environmental
- Formed new mixed small groups, each with a balance of representatives from the different topical groups, tasked with reviewing and providing feedback to what the morning groups developed.
- Reconvened in the topical small groups to make sense of and incorporate feedback received from the mixed groups.
- Came together as a full large group to share what was developed for each of the four issue areas, the feedback received, and the response to that feedback.
- Joint Meeting 2 (July 31, 2020, virtual meeting):
 - Reviewed, discussed, and refined the Environment section of the issue map.
 - Reviewed, discussed, and refined the Customer section of the issue map.
- Joint Meeting 3 (August 21, 2020, virtual meeting):
 - Reviewed, discussed, and refined the Host Community section of the issue map.
- Joint Meeting 4 (September 29, 2020, virtual meeting):
 - Continued to review, discuss, and refine the Host Community section of the issue map.
 - Collected feedback from all stakeholders on the overall process to date.
- Joint Meeting 5 (November 17, 2020, virtual meeting):
 - Presentation and discussion on the Rocky Mountain Institute's qualitative securitization analysis for Boswell units 3 and 4.
 - Discussed next steps for the stakeholder process.

The IRP Issue Map

As described above, the initial education and outreach meetings made clear that many stakeholders perceived Minnesota Power's 2021 IRP to be uniquely at the convergence of serious potential impacts to consumers, communities, and the environment, requiring a process that would enable honest dialogue while also acknowledging the sensitivities around the issues at hand. In addition, the facilitators felt it was vital for the group to build a more nuanced understanding of the key issues in order to ensure they could be considered in the utility's resource plan and the regulatory process around it.

To accomplish this, the facilitators sought to create an opportunity throughout the joint meetings for participants to identify and define the issues they cared about most, including what the outcomes or impacts of each issue would look like under a range of scenarios, from best case to worst case and in between. By asking participants to define the issues in this way, the facilitators hoped to create understanding around the following key questions:

1. What is most important to stakeholders?
2. What do stakeholders want Minnesota Power to optimize its system for?

3. What are the benefits stakeholders want to create and the drawbacks stakeholders want to avoid?
4. Where are there potential trade-offs, real or perceived, in trying to balance the full set of issues that stakeholders care about?

The answers to these questions were consolidated into an issue map (see figure 1) that is intended to provide a framework for understanding different stakeholder perspectives regarding the IRP and a foundation for ongoing discussions that will take place during and after the formal regulatory process. While the facilitators had hoped to convene a conversation about the fourth question—potential trade-offs amongst the issues—there was not enough time in the process to allow this, as noted above.

Importantly, the issue map is a forward-looking tool for discussion. It was not designed to be used as a tool to assess Minnesota Power’s current performance. In addition, the issue map helps to capture the perspectives of stakeholders who participated in this process, but who may not have time and resources to participate in the formal regulatory process.

Structure of the Map

ISSUE AREAS AND ISSUES

The issue map includes four issue areas or themes that were identified by the facilitators based on the discussions, surveys, and priority-setting exercises that took place during the initial education and outreach meetings. Throughout the joint meeting process, participants were invited to work together to identify the most important issues under each area that should be considered as part of Minnesota Power’s resource planning efforts. The four issue areas and 14 issues are listed in table 1 below. Importantly, the issues are numbered for reference purposes only; the numbers do not indicate a ranking or priority.

Table 1. Issue areas and issues

Issue Area	Issues
Customers	1. Customer options
	2. Large power (LP) and municipal utility competitiveness
	3. Residential affordability
	4. Reliability, power quality, resiliency
Environment	5. Direct impacts
	6. Indirect impacts
	7. Environmental justice
	8. Climate/greenhouse gas emissions
Host Community	9. Tax base
	10. Jobs
	11. Large industry impacts
	12. Community impacts
Utility	13. Responsibility/privilege to serve
	14. Planning and operations, utility health, and regional stability

While some of these issues may be more directly connected to resource planning than others, the facilitators included any issue that the stakeholder group felt was important, especially given the broad evaluation criteria for integrated resource planning under Minnesota Administrative Rule 7843.0500, Subpart 3 (as listed in the background section of this report).

FORWARD-LOOKING RATING SCALES

For each of the 14 issues, the participants worked together to develop a forward-looking, five-point rating scale that lists indicators or outcomes on that issue under a best-case scenario, a worst-case scenario, and three levels in between. The rating scale for each issue is defined as follows:¹⁰

0. Worst-case scenario
1. Poor
2. Barely acceptable
3. Good
4. Best-case scenario

The facilitators asked participants to focus the rating scales on outcomes and impacts, but otherwise gave stakeholders the opportunity to customize each rating scale to each individual issue, acknowledging that while some issues may lend themselves to quantitative measurement, others may be more suited to qualitative assessment. Moreover, the facilitators did not require the scales to accommodate any particular time horizon, as some issues had clear target years while others did not. The goal was to allow stakeholders the freedom to define the issues as they saw fit.

USING THE MAP

While the issue map is not intended to be used to assess current performance, it is intended to be used to support dialogue about how different future resource planning scenarios (or factors outside the scope of the IRP) might impact the things that stakeholders care about most.

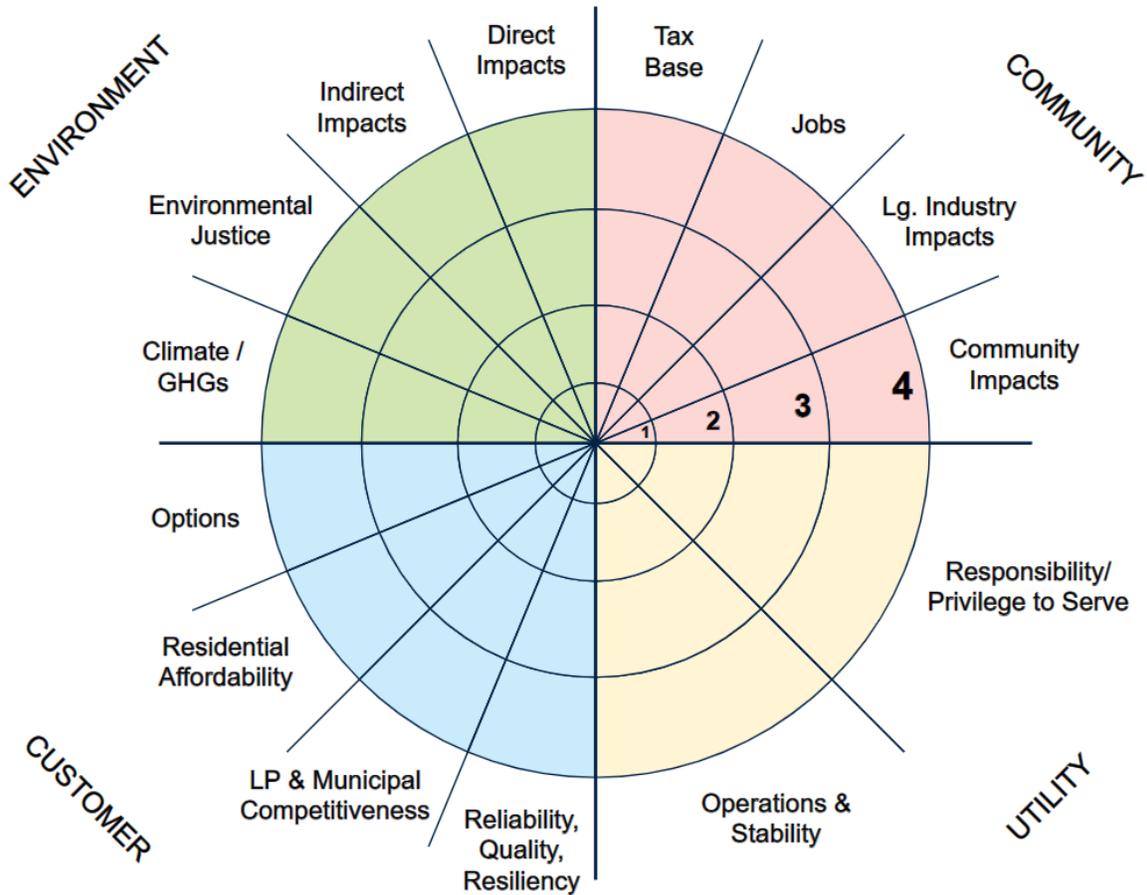
To use the map to assess a resource planning scenario or decision, the segments of the map can be filled in corresponding to the rating scale for that issue (see tables 2-15 in this report) as depicted in figure 1 below, starting with a “0” rating in the center, and each consecutive circle representing the next number on the scale, with a “1” rating represented by the smallest circle and moving out to a “4” for the largest. The result is a visual aid that can quickly be used to compare how different scenarios or decisions might impact the things that stakeholders care about most, as well as to call attention to possible interdependencies or trade-offs.

Figures 1 and 2 illustrate how the map can be used in this way. The first is a blank issue map without any segments filled in. Even in this format, the map helps to show the breadth of issues

¹⁰ Originally, the ends of the scale were defined as “best possible” and “worst possible,” however the scale was changed for two reasons: (1) it became clear during the process that there was broad uncertainty about what is and is not possible for a power plant host community facing plant retirement; (2) there was not consensus for many of the issues about what it is possible for Minnesota Power to do from a resource planning perspective without modeling and analysis to support the discussion.

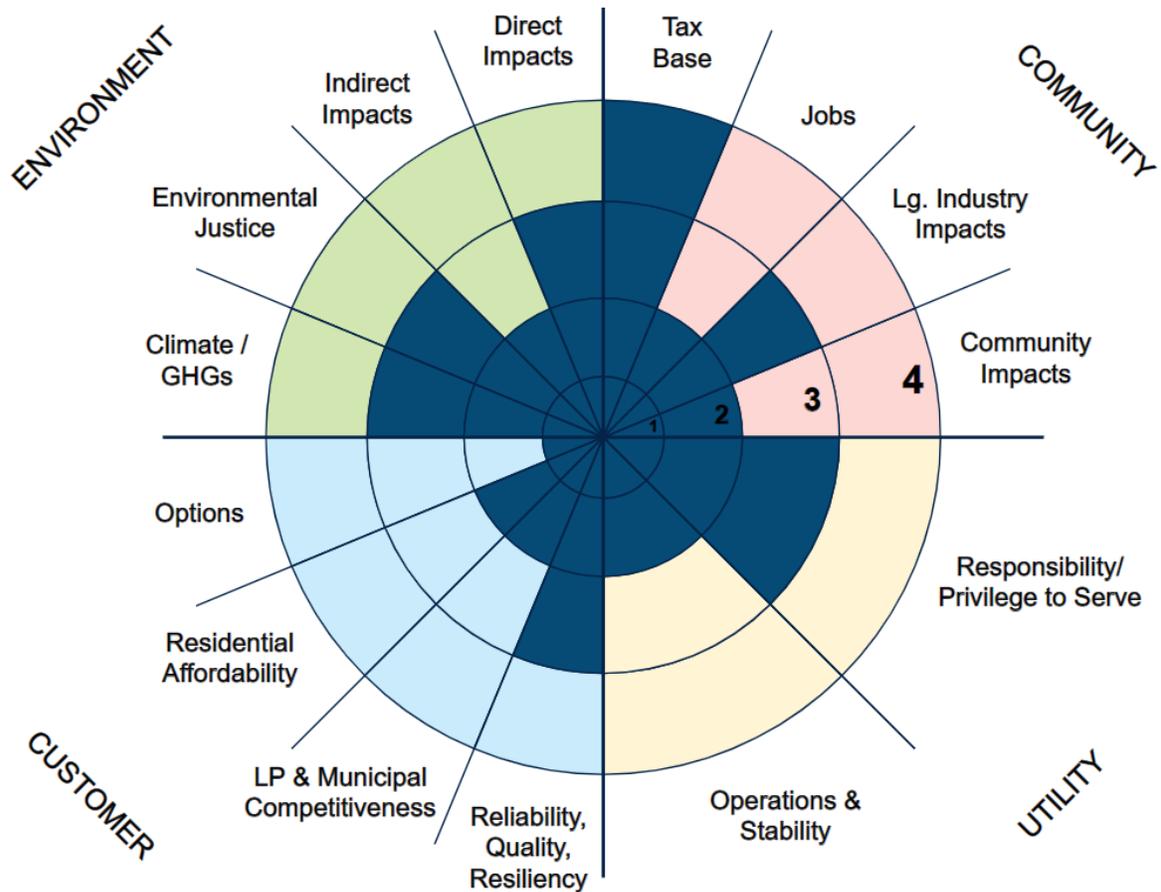
that stakeholders care about. The second, which is for illustration purposes only and does not represent a real scenario, is a map with the segments filled in to show how it can quickly provide a picture of perceived impacts on the issues that stakeholders care about most.

Figure 1. Blank IRP issue map



Source: The issue map is an adapted version of the Sustainability Value Map developed by Chris Butters / GAIA Norway. For more information, please see <https://butters.no/the-sustainability-value-map/>.

Figure 2. Completed IRP issue map (for illustration purposes only)



Source: Adapted from the Sustainability Value Map developed by Chris Butters / GAIA Norway.

While the map can be used to assess the impacts of a single scenario, it may be more useful to compare multiple options, as having multiple versions of the map will help to highlight how certain decisions or scenarios would or would not change the outcome for specific issues.

An editable version of the IRP issue map that can be filled out, saved, and printed is available online at https://scripts.betterenergy.org/PowerMap/MN_Power_Map.html.

Issues

In the section below, we describe each of the 14 issues and their corresponding rating scales. These were initially drafted at the March 9, 2020, in-person meeting, and then reviewed, discussed, and iteratively refined during the subsequent virtual meetings. In some cases, the facilitators also convened small groups of volunteers to refine the issues and rating scales outside of the larger joint meetings. The issues are numbered within each area for reference purposes only; the numbers do not indicate a ranking or priority.

For each issue, we have included a description of that issue, the rating scale, and notable points of discussion that occurred while developing the rating scale. In addition, some issues include an overall desired condition for clarity. Some issue areas also include one or more appendices for context.

Importantly, the facilitators asked participants to identify discrete issues to support understanding to be able to more easily assess potential impacts to those issues. However, as many stakeholders pointed out throughout the discussions, in reality these issues can be interrelated, interdependent, and overlapping.

Issue Area: Customers

Minnesota Power has a unique mix of customers compared to many other utilities, both in Minnesota and nationally. In total, the company serves approximately 147,000 retail customers. Among these, industrial customers account for 74 percent of annual sales, with residential and commercial customers each making up roughly 13 percent. The company also provides service to an additional 48,000 customers through wholesale power contracts with fifteen municipal utilities.

Minnesota Power's size and large proportion of total sales to industrial customers is part of what makes it unique. As a point of comparison, Xcel Energy serves approximately 1.3 million electric customers in Minnesota, with industrial customers making up only 26 percent of its annual electricity sales. Minnesota Power also serves a relatively large electric load for the number of customers it has, selling nearly three times as much power per retail customer, on average, as Xcel Energy in Minnesota.

In addition, the large industrial customers that Minnesota Power serves—which are collectively referred to as “large power” and include taconite mines that produce 85 percent of all domestic iron, as well as the majority of the state's forest products industry—compete globally with companies located in countries that socialize or reduce the cost of power in order to make those companies more competitive. This makes these customers particularly sensitive to increases in electricity prices. Moreover, the small proportion of residential and commercial customers on Minnesota Power's system also makes it difficult to spread out system costs across customer classes without significantly impacting rates of those other customer classes.

For these reasons, this issue area is particularly complex. The facilitators are grateful to the participants for their willingness to work together to develop the issues presented below, which include the following:

1. Rate and program options for all customers.
2. Competitive rates for large power and municipal customers.
3. Affordable rates for residential customers.
4. Power reliability, quality, and resiliency that's balanced with affordability.

ISSUE 1: CUSTOMER OPTIONS

Desired Condition: Minnesota Power offers all customers rate and program options.

Description: This issue focuses on the breadth of options available to customers, including the ability for customers to find clean energy and rate design options that meet their needs and desires. In developing this rating scale, stakeholders considered affordability for all customers interested in accessing clean power and how the program offerings are paid for by customer classes that value these alternatives, including income-qualified customers.

Minnesota Power currently offers customers opportunities to improve their energy efficiency, utilize clean energy program options for wind and solar on individual and community levels, and opt into demand response programming for large power, commercial, small business and residential customers. These options, which are detailed in the customer issue area appendix at the end of this section, are communicated through various media and Minnesota Power’s customer service representatives.

Table 2. Customer options rating scale

Issue 1: Customer Options				
0 Worst Case	1 Poor	2 Barely Acceptable	3 Good	4 Best Case
Customers referenced as “load” without rate and program options offered (viewed as a burden on the system).	Demand response offered on limited occasions, with limited rate and program options for all customers.	Some rate and program options are available, but with limited choices (offer 1 major option, 1–2 limited options).	All customers have rate and program options that are communicated well and are focused on the things consumers value (including price and other things). Customers understand the rationale behind options (e.g., lower nighttime EV rates help reduce system peak).	“Good” and all customers have multiple rate and program options, appropriately segmented and targeted by usage patterns. These could be utility or market driven.

Discussion Notes: Much of the discussion for this issue focused on which options were important. Participants cited energy efficiency, rate design options, clean energy programs, demand response, among other things. Ultimately the group came to consensus around the term “rate and program options,” along with the desire to have those options communicated well and aligned to the things consumers value, as described under the good rating.

ISSUE 2: LARGE POWER AND MUNICIPAL UTILITY COMPETITIVENESS

Desired Condition: Minnesota Power offers competitive rates for large power and municipal utility customers.

Description: Both this rating scale and the next one (Issue 3—Residential Affordability) are focused on competitive and affordable rates for all of Minnesota Power’s customers. Notably, the concerns about rates differ across customer types. Large power and municipal utility customer representatives are concerned with rate impacts leading to lack of investment, stagnant growth, or closures for major employers.

Dollar figures below are intended to represent average delivered cost of electricity on a MWh basis (total revenues in a year divided by total MWh consumed). These numbers are intended to be inclusive of the energy-intensive, trade-exposed (EITE) rate credit.¹¹

Table 3. Large power and municipal utility competitiveness rating scale

Issue 2: Large Power and Municipal Utility Competitiveness				
0 Worst Case	1 Poor	2 Barely Acceptable	3 Good	4 Best Case
\$70–\$80 MWh Uncompetitive rates—large power (LP) facilities could/would close, and investments made elsewhere.	\$60–\$70 MWh Uncompetitive for LP and a tipping point for closures/redirected investments (e.g., two LP customers recently idled). Currently high end for wholesale municipal rates and a tipping point for rates passed on to local customers.	\$50–\$60 MWh Ratings 1 and 2 represent a tipping point for these two customer classes. Based on recent experience, LP customers need rates at least in this range to have a reasonable opportunity to sustain current operations.	\$40–\$50 MWh Better rate mix favorability, which can stimulate investment and potential job growth.	\$30–\$40 MWh Competitive rates. Job growth likely. Greater ability to attract new LP customers.

Discussion Notes: Originally, this issue was combined with residential affordability, but the two were split up in recognition that these customer types have very different needs and considerations. This rating scale is one of the few that provides quantitative indicators. Some participants raised the concern that despite the clear numbers, rates for large power customers are difficult to access due to precautions around trade secrecy.

¹¹ More information on the EITI rate credit is available at <https://www.mnpower.com/CustomerService/EITE>.

ISSUE 3: RESIDENTIAL AFFORDABILITY

Desired Condition: Minnesota Power offers affordable rates for residential customers.

Description: Both this rating scale and the previous one (Issue 2 – Large Power and Municipal Competitiveness) are focused on competitive and affordable rates for all of Minnesota Power’s customers. Notably, the concerns about rates differ across customer types. Residential and small business customer representatives are concerned with affordability and equity, including for the most vulnerable customers.

Table 4. Residential affordability rating scale

Issue 3: Residential Affordability				
0 Worst Case	1 Poor	2 Barely Acceptable	3 Good	4 Best Case
<p>15+% of customers are in arrears, as a measure of energy burden.</p> <p>Assistance programs fall way short.</p> <p>Ratepayers and consumers bear the brunt of rising costs, with disproportionately lower impact to investors.</p> <p>Utility has no way of even identifying inequities.</p>	<p>10–15% of customers are in arrears.</p> <p>Assistance programs are falling short for many.</p> <p>Utility has the means to identify inequities, but isn’t doing it.</p>	<p>5–10% of customers in are in arrears, and percentage not increasing.</p> <p>Bills not increasing faster than inflation, adjusted for electrification.</p> <p>Assistance programs are insufficient to help everybody, yet are still helpful to some.</p> <p>Utility is identifying inequities and is making plans to address them.</p>	<p>Less than 5% of customers in arrears, and percentage decreasing.</p> <p>Assistance programs can help almost all customers.</p> <p>Utility is identifying inequities and is addressing them.</p>	<p>Consistently at 1% or fewer of customers in arrears.</p> <p>Everybody can afford their bills and nobody gets disconnected.</p> <p>Utility is identifying and addressing inequities, such that there are none.</p>

Discussion Notes: One of the challenges for this rating scale was defining affordability in a measurable way, especially looking 15 years into the future. The group discussed arrears, coupling rate increases to inflation, adequacy of energy assistance, and using a 3 percent threshold of household income as a standard for electrical affordability, which is a definition that Minnesota Power uses in their customer affordability of residential electricity (CARE) program.¹²

¹² More information on the CARE program is available at <https://www.mnpower.com/customerservice/careprogram>.

Ultimately, a volunteer group of stakeholders worked together to refine this scale, selecting arrearages as the best measure of whether customers can afford to pay their bills. However, some of these other measures of affordability may still be useful. In addition, some participants raised the concern that the best case may not be realistic, but found the overall rating scale acceptable.

ISSUE 4: RELIABILITY, QUALITY, AND RESILIENCY

Desired Condition: Power reliability, quality, and resiliency that are balanced with affordability.

Description: This rating scale is focused on reliable power that meets quality of power and resiliency needs, especially by some key customer classes including large industrial, medical institutions, and education facilities, as well as for residential personal safety. For Minnesota Power’s stakeholders, these variables are an integral part of energy competitiveness, along with affordable and competitive rates. Additionally, the impact on growth and investments, business retention and mitigating the potential closure of some businesses and related socioeconomic impacts was referenced in this integrated area of concern. The tipping point referenced in the rating scale is related to customers choosing to generate alternative power to mitigate certain individual reliability situations.

Table 5. Power reliability, quality, and resiliency rating Scale

Issue 4: Power Reliability, Quality, and Resiliency				
0 Worst Case	1 Poor	2 Barely Acceptable	3 Good	4 Best Case
<p>Long-term power outages (outages occur 5–6 consecutive days on multiple occasions) or sustained intermittent outages (off 1–2 hours daily/every other day) with poor service quality (e.g., voltage drops).</p> <p>Impacts on low-income residents and affecting personal safety, especially in winter.</p>	<p><i>Sliding scale depending on customer reliability, service quality, resiliency needs.</i></p> <p>Would be a tipping point to trigger self-generation and/or drive plant closures by large power customers.</p>	<p>Outages and service quality issues only in extreme or very rare circumstances.</p> <p>Could be a resiliency issue for medical and emergency services.</p> <p>A tipping point for alternative action consideration by multiple customer classes.</p>	<p><i>Sliding scale depending on customer reliability, service quality, resiliency needs.</i></p>	<p>No outages, excellent service quality (no voltage drops), and not needing to call on emergency demand response resources, other than due to natural disasters.</p> <p>Micro-grid capabilities to limit impacts and enhance resiliency in response to outages due to natural disasters.</p>

Discussion Notes: The stakeholders that worked on this issue found it challenging to define a rating scale that aligned to the very different needs of multiple customer types. For example, this scale originally included power outage frequencies (i.e., outage every 2–3 months), but was revised to reflect the fact that an outage frequency and duration that’s barely noticeable for one customer could physically damage equipment for another customer. Ultimately, participants arrived at including sliding scales for the poor and good ratings, to reflect this variation in customer needs.

Some stakeholders felt it was important to mention balancing this issue with affordability and competitiveness, for fear of encouraging a power system that is very reliable but unaffordable or uncompetitive.

CUSTOMER ISSUE AREA APPENDIX

Current Customer Options:

From a clean energy options perspective, Minnesota Power’s Energy Forward resource plan, which came out of the 2015 IRP, is on track to achieve 50 percent renewable power for all customers by 2021. In addition, retail customers may currently select from the following options to increase the amount of renewable power supplied to them:¹³

- Renewable Source is a green pricing program that allows customers pay an extra cost on their bill to have Minnesota Power add more renewable energy to the power grid equal to their monthly consumption, up to 100 percent renewable. Currently, this program is supplied by wind generated in Iowa, but has the potential for a broader renewable energy mix in the future.
- The Community Solar Garden program provides an opportunity for customers to offset their energy usage with up to 100 percent solar power from two facilities in Minnesota Power’s service territory—a one megawatt array in Wrenshall and a 40 kilowatt array in Duluth. The program is available to retail customers not exempt from Solar Energy Standard costs. While the program is currently fully subscribed, Minnesota Power has a waitlist for interested customers.
- Solar Sense offers rebates to reduce the upfront cost of solar installations for retail customers not exempt from Solar Energy Standard costs. The program has an annual budget cap, which will be \$350,698 in 2021.

In addition, Minnesota Power offers the following demand response programs, which offer incentives for customers who choose to reduce their electricity usage during peak times or for grid emergency purposes:

- Residential Dual Fuel Interruptible Electric Service: This discounted rate applies to the interruptible electric heating service requirements of all-year Residential Customers where a non-electric source of energy is available to satisfy heating requirements during periods of interruption.

¹³ Additional information on Minnesota Power’s clean energy programs is available at <https://www.mnpower.com/ProgramsRebates/RenewableChoices>.

- Commercial/Industrial Dual Fuel Interruptible Electric Service: This rate applies to the interruptible electric service requirements of commercial/industrial customers where an alternative source of energy is available to satisfy service requirements during periods of interruption. Approved installation requires a secondary or backup energy source capable of continuous operation.
- Rider for Large Power Incremental Production Service (“IPS”): This voluntary rate is available to any customer taking service under the Large Power Service rate whose Electric Service Agreement has a minimum term of at least four years beyond the initiation of Incremental Production Service.
- Large Power Demand Response (Product A): One-year capacity/emergency only product. Minnesota Power will only call on this capacity if required by the Midcontinent Independent System Operator or if curtailment of firm power is threatened.

Issue Area: Environment

Minnesota Power has taken several steps in recent years to address the environmental impacts from its power plants. Air emissions of sulfur dioxide, nitrogen oxides, and mercury from the company’s plants have all decreased substantially in recent years, primarily due to two factors:¹⁴

1. The refueling, idling, and retirement of multiple power plants, including the following:
 - a. Refueling of the Laskin Energy Center from coal to natural gas in 2015.
 - b. Idling and retirement of the coal-fired Taconite Harbor Energy Center.
 - c. The Hibbard Renewable Energy Center began consuming 90 percent or greater biomass on an annual average (or 85 percent on a 3-year average). Compared to coal, biomass has generally lower emissions of sulfur dioxide, mercury, and various other pollutants.
 - d. Retirement of Boswell units 1 and 2.
2. Multiple environmental upgrades completed at the Boswell Energy Center, totaling roughly \$670 million invested, including the following:
 - a. Emissions controls at Boswell units 1, 2, and 4 in 2008.
 - b. Emissions controls at Boswell unit 3 in 2009.
 - c. Additional emissions controls at Boswell unit 4 in 2015.
 - d. Boswell turbine upgrades that improved efficiency, resulting in a lower rate of emissions.

In consideration of these actions and investments, the joint meeting participants identified the following four environmental issues that they felt were important for any future portfolio of resources:

1. Direct, on-site impacts to air, water, and land.
2. Indirect impacts to the environment, people, public health, and the economy.

¹⁴ Emissions reduction graphs from the Minnesota Pollution Control Agency and Minnesota Power are included in the slide deck from the third Twin Cities initial education and outreach meeting, attached to this report. Additional information is also available on Minnesota Power’s “Reducing Emissions” web page at <https://www.mnpower.com/Environment/ReducingEmissions>.

3. Specific actions to foster environmental justice.
4. Planning with an eye towards decarbonization.

ISSUE 5: DIRECT IMPACTS

Description: All electric system resources can have direct environmental impacts on air, water, and land. These resources are subject to federal and state environmental, health, and safety standards. Importantly, more stringent standards sometimes apply to new resources. Beyond those standards, there are national and international frameworks for benchmarking the environmental impacts of power generators.

This issue rating scale is focused on how Minnesota Power’s electric system resources comply with or exceed federal and state environmental, health, and safety standards. For the good and best possible ratings, the focus is ongoing benchmarking against other similar generators (e.g., natural gas is compared to natural gas, not solar).

NOTE: greenhouse gas emissions, including carbon dioxide, are not included in this issue, but in a separate issue described below (see table 9).

Table 6. Direct environmental impacts rating scale

Issue 5: Direct Environmental Impacts				
0 Worst Case	1 Poor	2 Barely Acceptable	3 Good	4 Best Case
Non-compliance with standards. Specific resources, or permits that cover more than one resource, are out of compliance with minimum standards for air, water, or waste.	Resources all meet standards, but this includes resources that only meet grandfathered standards.	Resources meet new source standards for air and established best practices for water and waste (generally exceeding minimum regulatory standards).	On average Minnesota Power’s resources are within the top 25% of benchmarked generation facilities (nationally or internationally).	On average Minnesota Power’s resources are within the top 10% of benchmarked facilities (nationally or internationally).

Discussion Notes: One concern raised was that some electric system resources can have direct impacts on people within the immediate vicinity of the plant in addition to impacts on air, water, and land. However, the group seemed satisfied that this was captured under the indirect impacts issue.

ISSUE 6: INDIRECT IMPACTS

Description: Electric system resources and system design choices have indirect impacts on the environment, people, public health, and the economy. While some of these impacts are not easily measured, they are an important consideration for Minnesota Power’s stakeholders.

Indirect environmental impacts acknowledge two categories of impact: (1) impacts from Minnesota Power’s resources, such habitat, water quality, and waste impacts that do not occur on-site; and (2) impacts from the supply chain for those resources, including supply chain greenhouse gas emissions. In addition, stakeholders considered science-based decision-making important to this issue.

In essence, this rating scale says that if Minnesota Power will be making investments in new resources, it should do so in a way that brings about as many broad benefits as possible.

For this issue, co-benefits are defined as solutions that incorporate beneficial environmental, economic, and social aspects. An example of capturing co-benefits would be building a solar array that incorporates pollinator habitat and water resource management to maximize the positive impacts of the array. In this way, one solution provides multiple benefits.

Table 7. Indirect environmental impacts rating scale

Issue 6: Indirect Environmental Impacts				
0 Worst Case	1 Poor	2 Barely Acceptable	3 Good	4 Best Case
<p>Degradation of indirect impacts to the environment, health, and the economy.</p> <p>Supply chain impacts are not considered.</p> <p>Decisions not informed by science.</p>	<p>No attempt is being made to acknowledge or address indirect impacts.</p> <p>Supply chain impacts are considered, but do not affect procurement decisions.</p>	<p>Acknowledging indirect impacts and addressing negatives, but not capturing positive co-benefits.</p> <p>Supply chain impacts are fully considered and affect procurement decisions.</p>	<p>Addressing negative indirect impacts and capturing some positives via co-benefits.</p> <p>Supply chain impacts are fully considered and drive procurement decisions.</p>	<p>Fully considering indirect impacts and capturing co-benefits to the environment.</p> <p>Capturing supply chain co-benefits through procurement decisions.</p> <p>Decisions informed by science</p>

Discussion Notes: There was significant ongoing discussion about how to define indirect impacts since this issue captures so many potential impacts from both a sectoral and geographic perspective. In response, the group sought to better clarify this issue by adding the two categories of indirect impact in the description. In addition, environmental justice was originally included under this issue, but was later pulled out and established as a separate issue altogether to both highlight its importance and make both issues clearer.

ISSUE 7: ENVIRONMENTAL JUSTICE

Description: The economic, social, and health impacts of electric system resource choices affect different populations (specifically low-income communities, indigenous communities, and communities of color) disproportionately. This disproportionate impact on communities creates issues of environmental justice. For example, mercury pollution in a lake is an environmental

issue whereas mercury accumulating in the fetuses of women from a specific community is an environmental justice issue. This rating scale is focused on how Minnesota Power addresses environmental justice.

For this issue, stakeholders adopted the definition of environmental justice from the Minnesota Pollution Control Agency’s Environmental Justice Framework, which is the following:

“The fair treatment and meaningful involvement of all people regardless of race, color, national origin, or income with respect to the development, implementation, and enforcement of environmental laws, regulations, and policies. This will be achieved when everyone benefits from the same degree of environmental protection and has equal access to the decision-making processes that contribute to a healthy environment.”¹⁵

Table 8. Environmental justice rating scale

Issue 7: Environmental Justice				
0 Worst Case	1 Poor	2 Barely Acceptable	3 Good	4 Best Case
No policy or strategy. Minnesota Power does not recognize that inequities exist and does not recognize MP’s role in a larger system that has created inequities.	Incomplete policy and/or strategy. Recognize inequities exist, but not yet acting or effectively engaging to understand them.	Minnesota Power has a policy and a strategy around effectively implementing environmental justice actions. Minnesota Power is able to identify environmental justice communities and work with them.	Policy and action. Making progress on implementing environmental justice actions.	Healing and reparations that uphold environmental justice. Inequities no longer exist.

Discussion Notes: As noted above, environmental justice was originally included in indirect impacts, but was later pulled out and established as a related but distinct issue. Importantly, the stakeholders that weighed in on this issue did not feel that they could speak on behalf of environmental justice communities. Therefore, they drew from the approach described in the Minnesota Pollution Control Agency’s Environmental Justice Framework.¹⁶ The group also

¹⁵ Minnesota Pollution Control Agency, *Environmental Justice Framework* (December 15, 2015): <https://www.pca.state.mn.us/sites/default/files/p-gen5-05.pdf>.

¹⁶ Ibid.

noted that the Minnesota Department of Transportation has additional useful resources on environmental justice.¹⁷

ISSUE 8: CLIMATE / GREENHOUSE GAS EMISSIONS

Description: Electric system resource choices impact greenhouse gas (GHG) emissions and climate change. This rating scale is focused on how Minnesota Power’s system is being planned with an eye towards decarbonization.

For this rating scale, GHG emissions are intended to be measured across Minnesota Power’s resource portfolio. Importantly, this scale is targeted at total emissions, not emissions on a per kWh or per capita basis, so the measurement is absolute regardless of load growth or load loss.

Table 9. Climate / greenhouse gas emissions rating scale

Issue 8: Climate / Greenhouse Gas Emissions				
0 Worst Case	1 Poor	2 Barely Acceptable	3 Good	4 Best Case
Minnesota Power’s system is on a path to increase total GHG emissions by 2050.	Minnesota Power’s system is not on a path to reduce GHG emissions beyond 50% carbon reduction by 2021.	Minnesota Power’s system is on a path to achieve 80% carbon reductions by 2050, in line with state goals.	Minnesota Power’s system is on a path to fully decarbonize by 2050.	Minnesota Power’s system is on a path to fully decarbonize by 2035.

Discussion Notes: This rating scale was originally written with the best possible target being carbon-negative by 2050, but it was updated to reflect the latest guidance from the Intergovernmental Panel on Climate Change. Some stakeholders expressed concerns that fully decarbonizing would either be unattainable for Minnesota Power or would come at a cost of uncompetitive and unaffordable rates, decreased reliability, or both. Ultimately, however, the group was satisfied that their concerns would be captured under other issues.

Issue Area: Host Community

As noted above, Minnesota Power’s Boswell plant is its last remaining coal-fired plant and the only baseload plant currently on its system. The Boswell plant is located in Cohasset, Minnesota in Itasca County. The Cohasset community and the region more broadly are rural, with a dispersed population and a unique economy, bolstered by taconite mining and production and

¹⁷ “Environmental justice at MnDOT,” Minnesota Department of Transportation (website), <http://www.dot.state.mn.us/environmentaljustice/>.

the paper industry. The regional mining and paper industries have both experienced downturns in recent years, which resulted in job losses and other negative economic consequences for the region.

The Boswell plant is a large and important employer in the region and provides additional, substantial economic benefits to the region in the form of tax revenue and commerce with other regional businesses. Additionally, community members employed by the plant, directly and indirectly, contribute to the region economically, through real estate investments, taxes, and commerce; philanthropically through charitable giving; and as volunteers by donating time to local schools and community organizations.

Minnesota Power’s IRP filing will include a baseload retirement study to consider the possible retirement of Boswell units 3 and 4 and may also include a proposed retirement date for Boswell units 3 and/or 4 in one or more of the scenarios included in the resource plan. Therefore, the IRP filing could have wide-ranging, long-term, and deep implications for the community. Stakeholders captured those implications in the following four issues and rating scales.

Importantly, it became clear during the process that there was broad uncertainty about what is and is not possible for a power plant host community facing plant retirement. In particular, stakeholders were not sure if the community could feasibly replace the full wide-ranging benefits provided by the Boswell plant if the plant retired. Given the high level of uncertainty around this issue area, stakeholders agreed to consider the rating scales under this issue as aspirational.

ISSUE 9: TAX BASE

Desired Condition: Sustain and grow property tax base necessary to support a healthy city, county, school district, Taconite Assistance Area, and broader region.

Description: Minnesota Power’s Boswell plant currently contributes a significant amount of property tax revenues to the City of Cohasset, Itasca County, the Independent School District 318, the Taconite Assistance Area, and the region. In 2019, Boswell paid \$6.8 million in property taxes and 95 percent of those revenues stayed in Itasca County.

Table 10. Tax base contribution by the Boswell plant (2020)

Entity	Percent of Tax Base Contributed by the Boswell plant (2020)
City of Cohasset	72%
Itasca County	11%
Independent School District 318 (Grand Rapids, Cohasset & Bigfork)	16%
Iron Range Fiscal Disparities Program	15%*

*Based on an analysis of the 2020 program year.

Plant workers and people employed by businesses that serve the Boswell plant also contribute substantially to the tax base.¹⁸ These tax revenues support city, county, school district, and regional services and infrastructure, while also stabilizing taxes for residents and other businesses. The retirement of Boswell would result in the loss of tax revenues from the plant and businesses providing goods and services used in the plant’s operation. Such a loss would have major implications for the area’s tax base, as well as how much and from whom tax revenues are collected.

This rating scale focuses on the future state of the tax base for the city, county, school district, and region.

Table 11. Host community tax base rating scale

Issue 9: Host Community Tax Base				
0 Worst Case	1 Poor	2 Barely Acceptable	3 Good	4 Best Case
Close the plant immediately and lose all tax base and associated tax revenues.	Close the plant quickly with no plan or effort to replace the tax base or associated tax revenues.	Give closure date with a realistically achievable plan to replace tax revenues at a sufficient level to replace services and infrastructure.	Maintain the necessary tax revenues to maintain a healthy community indefinitely for the communities most impacted.	Grow long-term, sustainable tax revenues indefinitely in the communities most impacted.

Discussion Notes:

Stakeholders broadly agreed that this issue is of critical importance to the host community issue area. One stakeholder noted that community tax base can be viewed as a proxy or indicator of all other host community issues. Participants stated that they would like to see the community and region grow tax base and revenues in a sustainable manner. However, many noted concern that such growth may be impossible or unlikely if the Boswell plant were to retire, noting the magnitude of tax revenues provided by the plant and the economic interdependencies of the plant and other regional businesses and industries.

Stakeholders involved in economic development efforts for the region described the immense challenges in attracting new businesses and building a broader tax base for the region. Those challenges include geographic location and existing infrastructure (for example, lack of broadband internet access), climate, and the rural nature of the region.

¹⁸ Business Research Division, Leeds School of Business, University of Colorado Boulder, *Minnesota Power Economic Impact Study* (March 2020), [https://www.mncee.org/getattachment/Resources/Projects/Power-Plant-Transition-in-Host-Communities/Minnesota-Power-MN-Economic-Impact-Analysis-Final-Report-March-2020-\(1\).pdf.aspx](https://www.mncee.org/getattachment/Resources/Projects/Power-Plant-Transition-in-Host-Communities/Minnesota-Power-MN-Economic-Impact-Analysis-Final-Report-March-2020-(1).pdf.aspx).

Though stakeholders focused on desired outcomes related to tax base and revenues rather than strategies to achieve such outcomes, many participants indicated that statewide, and possibly federal, support would be needed in order to achieve the desired outcomes associated with this issue.

ISSUE 10: JOBS

Desired Condition: Sustain and grow a sufficient number of high-quality jobs in diverse sectors to support a healthy community.

Description: Minnesota Power’s Boswell plant directly employs approximately 170 full-time, highly-skilled, highly engaged workers and another 150–200 highly-skilled, short-term workers for regular plant maintenance. Plant jobs are diverse, mostly union jobs and are all high-wage, family-sustaining jobs. Plant jobs are stable, long-term positions; pay well above the median income for Itasca County and Minnesota more broadly; and provide medical, retirement, and other important benefits; have a strong focus on workplace safety and protections; offer advancement opportunities; and provide a high quality of life. Additionally, the plant provides many indirect jobs for entities that provide services and materials for the plant and plant workers and their families, as well as local public sector jobs, like teachers, that serve plant workers and their families. As such, plant jobs, both direct and indirect, contribute significantly to the economy and stability of the region.

This rating scale focuses on the quality and quantity of jobs available in the region after a Boswell retirement. Stakeholders considered the speed of a retirement and the amount of planning as important factors affecting job outcomes.

Table 12. Host community jobs rating scale

Issue 10: Host Community Jobs				
0 Worst Case	1 Poor	2 Barely Acceptable	3 Good	4 Best Case
Upon retirement, all direct Boswell plant jobs are lost, leading to job losses in related industries and loss of jobs due to necessary migration out of the region (spouse jobs, jobs in school, etc.).	A retirement of Boswell with no replacement and not enough time to build out the economy and grow employment opportunities in other sectors.	A planned retirement of Boswell with a sustained, advanced injection of philanthropic, state, and federal dollars for worker retention and retraining and economic development to diversify the local and regional economy and grow jobs (of undetermined quality) to survive transition.	A planned retirement of Boswell with a replacement facility that provides high-quality jobs at a similar level as the current plant.	A planned retirement, through which high-quality jobs in the energy sector are preserved and grow, creating opportunities for new industry and new high-quality jobs to come to region. Ultimately the region has more and better high-quality jobs than before a Boswell retirement.

Discussion Notes:

Notably, much of the discussion of this issue occurred during the COVID-19 pandemic, which has had significant negative impacts on the economy and employment of the region. Between March and July of 2020, Itasca County experienced a large increase in new unemployment applications. New unemployment applications in that four-month time period represent 29 percent of the entire civilian labor force for Itasca County. Several large employers temporarily ceased operations, laying off hundreds of employees. Some of the county’s largest industries were among those with the largest negative change in employment: leisure and hospitality (-41.8 percent), retail trade (-12.8 percent), and mining and logging (-11.5 percent). Though stakeholders focused on future outcomes related to jobs in the region, the existing economic conditions provide context for this rating scale.

Participants determined that the best possible outcome related to jobs would be to see improvement over current conditions. This includes not only the number of jobs available in the community, but also the quality and stability of those jobs. In particular, stakeholders view the existing jobs associated with the Boswell plant as high-quality and are therefore concerned about the quality of potential replacement jobs. As with the first issue in the host community issue area, stakeholders noted uncertainty about what would be possible regarding the quantity and quality of jobs in the community if the Boswell plant retired. Given that uncertainty, stakeholders chose to create an aspirational rating scale for this issue.

Some participants noted skepticism about the value and success of workforce retraining efforts. Ultimately, stakeholders determined that maintaining jobs in the energy industry within the community was optimal, both because of the historic quality of those jobs and the skillset of the existing workforce.

ISSUE 11: LARGE INDUSTRY IMPACTS

Desired Condition: Support existing and potential large regional industries.

Description: The region served by Minnesota Power has a unique economy compared to the rest of the state and is sustained by large industrial customers, including paper mills, mines, and other manufacturing facilities that create US domestically-sourced essential products for daily life (building materials, vehicles, appliances, etc.) in an environmentally superior way.¹⁹ These large industrial customers require large amounts of reliable, competitively-priced electricity to remain operating in a global market place. Continued operation or expansion of these businesses and production of their domestically-sourced products could be impeded by a decrease in reliability or an increase in costs.

The region is also rural, which means that large industry in the region has a disproportionate and large impact on jobs, population, and the overall economy. Large industry is essential to the area, providing the economic anchor for a network of suppliers, service providers, other businesses, and regional nonprofit organizations, having significant indirect impacts on the communities and region.

Additionally, Minnesota Power's large customers contribute significant revenues to the utility, which in turn helps to keep rates low for other businesses and residents served by Minnesota Power.

This rating scale focuses on reliability, sustainability, and competitively-priced electricity for the region's large industrial and mining businesses.

¹⁹ Ali Hasanbeigi and Cecilia Springer, *How Clean is the U.S. Steel Industry, An International Benchmarking of Energy and CO₂ Intensities* (Global Efficiency Intelligence, November 2019), <https://static1.squarespace.com/static/5877e86f9de4bb8bce72105c/t/5f0f05e6e3579d515fb48bb9/1594820086813/How+Clean+is+the+U.S.+Steel+Industry.pdf>.

Table 13. Large industry impacts rating scale

Issue 11: Large Industry Impacts				
0 Worst Case	1 Poor	2 Barely Acceptable	3 Good	4 Best Case
Upon power plant closure, there is no affordable, reliable, available energy resource alternative, and that forces large industry to stop operating. This results in catastrophic job losses in the region and higher electric rates for the remaining Minnesota Power customers.	Upon power plant closure, the alternative energy resource is more expensive or not reliable. This risks closures of large industrial plants served by Minnesota Power.	Maintain the status quo with regard to affordability, reliability, and availability of electricity with the capacity for growth. Currently there are important industrial plants that have idled or closed due to global economic factors, including COVID-19.	The region shifts to a more dependable, affordable, cost-efficient, reliable energy source(s) that is environmentally sustainable and allows the large industries to continue operations.	The region shifts to a continually improving, more dependable, affordable, cost-efficient, reliable energy source(s) that is environmentally sustainable and allows the large industries to continue operations, attracting new opportunities for economic growth, and growing family-sustaining jobs in the region.

Discussion Notes:

Much of the discussion of this issue focused on the current challenges faced by large businesses in the region. Stakeholders described the major industries within the region as having very tight margins to remain competitive in global markets, making those industries especially vulnerable to economic and financial pressures. At the time of this report, a number of large mining operations and manufacturing facilities were idled due to a variety of economic pressures, including the COVID-19 pandemic. Stakeholders noted that the recent idling of facilities came on top of permanent closures of other facilities in recent years.

For the rating scale, stakeholders focused on the availability of reliable and affordable energy, a key driver of financial health and competitiveness for local industries and a factor within the purview of the utility and its regulators.

ISSUE 12: COMMUNITY IMPACTS

Desired Condition: Sustain and grow a healthy, vibrant community, including local businesses, nonprofits, community organizations, and social fabric.

Description: Stakeholders identified growth as an important outcome and indicator of the health of the region that Minnesota Power serves. Stakeholders defined desired growth in terms of population, income, and well-being as well as the domestic product of the region. This rating

scale provides a measure of community growth, from the worst case future scenario (one in which the community shrinks) to the best (one in which the community grows and prospers).

Table 14. Community impacts rating scale

Issue 12: Community Impacts				
0 Worst Case	1 Poor	2 Barely Acceptable	3 Good	4 Best Case
Population declines, taxes increase beyond capacity, schools, and other community amenities close, poverty increases.	<i>Sliding scale</i>	Population remains stagnant, county GDP is equal to that of 2020.	<i>Sliding scale</i>	Population is growing; school-aged population is growing; social fabric is strong; community is healthy and vibrant; ²⁰ poverty is eliminated; median income goes up.

Discussion Notes:

In considering the community impacts issue, stakeholders discussed the role that Minnesota Power, its employees, and indirect plant workers play in the social fabric of the community. Stakeholders noted Minnesota Power as a good “corporate citizen” in the community, contributing financially to local charities and causes and providing staffing for local community organizations. Stakeholders also discussed the high engagement of Minnesota Power employees and indirect workers in the community, noting that Minnesota Power employees and workers tend to volunteer and participate in community events at high levels. Stakeholders also noted that another important characteristic of plant workers are their families who work, attend school, and contribute to the community.

For the rating scale, stakeholders focused on the outcomes that most represent the health of the community, drawing upon the work of the Blandin Foundation, an important regional foundation, in defining the dimensions of a healthy community. Participants agreed that a key indicator of health for the community was growth, both in terms of population and median income of the population. Ideally, stakeholders hope to see more young families living and working in the area.

²⁰ “Healthy, vibrant community” is defined by the Blandin Foundation Community Leadership Program, Dimensions of a Healthy Community (January 2017). This includes dimensions of spirituality and wellness, life-long learning, inclusion, recreational and artistic opportunity, environmental stewardship, infrastructure and services, safety and security, community leadership, and economic opportunity.

HOST COMMUNITY ISSUE AREA APPENDIX:

Resources:

- *Minnesota's Power Plant Communities: An Uncertain Future*, Center for Energy and Environment. February 2020.
https://www.mncee.org/getattachment/Resources/Resource-Center/Technical-Reports/Minnesota-s-Power-Plants-An-uncertain-future/Host-Communities-Study-Report-FINAL_2-24-20_updated.pdf.aspx.
- *Minnesota Power Economic Impact Study, Economic Impact of Utility Scenarios on Itasca County and the State of Minnesota*, University of Colorado at Boulder, Leeds School of Business. March 2020.
[https://www.mncee.org/getattachment/Resources/Projects/Power-Plant-Transition-in-Host-Communities/Minnesota-Power-MN-Economic-Impact-Analysis-Final-Report-March-2020-\(1\).pdf.aspx](https://www.mncee.org/getattachment/Resources/Projects/Power-Plant-Transition-in-Host-Communities/Minnesota-Power-MN-Economic-Impact-Analysis-Final-Report-March-2020-(1).pdf.aspx).
- *Itasca County Highlights*, Itasca Economic Development Corporation. 2020. Attached as an appendix to this report.

Issue Area: Utility

Unlike the other three issue areas, the utility area was not a direct theme from the initial education and outreach meetings. However, the facilitators felt that it was important to create this issue area for two primary reasons: first, to acknowledge the fact that the company itself is a key stakeholder in its resource planning efforts, and to position it as such in this process; second, to create space for issues that may be important to Minnesota Power, but that may not have been captured in the other issue areas.

Importantly, the issues under this area are not the only issues important to Minnesota Power. On the contrary, the facilitators asked Minnesota Power staff to specifically focus on issues that were not likely to be addressed in the other areas.

Due to time constraints, this rating scale was not presented and discussed at a follow-up meeting of the full group. The facilitators made this decision to ensure that Minnesota Power's stakeholders had ample opportunity to discuss the other three issue areas that they had worked on. However, these rating scales were sent out to the group for review and comment by email. One specific concern raised by stakeholders was that these issues do not speak to the interests of Minnesota Power's shareholders and financiers.

This area includes the following two broad issues:

1. How well Minnesota Power is serving all of its customers, with a focus on consultation/collaboration with stakeholders in making decisions, customer satisfaction, and equity.
2. How well Minnesota Power is operating and planning its electric system, meeting regulatory requirements, and managing impacts to regional economic stability.

NOTE: These rating scales do not represent an official communication or set of positions on behalf of Minnesota Power or ALLETE.

ISSUE 13: RESPONSIBILITY / PRIVILEGE TO SERVE

Description: As a regulated electric utility, Minnesota Power has a responsibility to provide service to its customers, but also views the ability to provide service as a privilege. This rating scale speaks to how well Minnesota Power is serving all of its customers, with a focus on three components: consultation/collaboration with stakeholders in making decisions, customer satisfaction, and equity, which is defined within this specific issue as serving customers how they want to be served.

For this rating scale, “customers” includes all customers—residential, commercial, industrial, and municipal.

Importantly, customer satisfaction and equity are among several areas of electric utility performance where expectations of utilities are changing, and adequate measurement tools may not yet be readily available. At the March 9 meeting, Minnesota Power staff listed several considerations that they see as related to satisfaction, including reliability, power quality, customer service, and products and service offerings, among other things.

Table 15: Responsibility/privilege to serve rating scale

Issue 13: Responsibility/Privilege to Serve				
0 Worst Case	1 Poor	2 Barely Acceptable	3 Good	4 Best Case
<p>Stakeholders were not consulted in utility decision-making.</p> <p>Any customer group is totally unsatisfied with service.</p> <p>Gross inequities exist in service offerings, rate structure, and impact to customers.</p>	<p>Stakeholder consultation exists, but is not meaningful or balanced.</p> <p>Any customer group is somewhat unsatisfied.</p> <p>Inequities in service are known, but not being addressed.</p>	<p>Meaningful and balanced stakeholder consultation.</p> <p>All customer groups are satisfied, but don't view Minnesota Power as a trusted partner.</p> <p>Inequities in service are known and Minnesota Power is working to address them.</p>	<p>Meaningful and balanced stakeholder consultation well in advance of decision-making.</p> <p>All customer groups are very satisfied, though trust may be lacking for some.</p> <p>Inequities in service are known and being addressed successfully where possible.</p>	<p>“Good” + stakeholder consultation impacts decision-making, facilitates collaboration and reaches all affected/interested stakeholders.</p> <p>All customer groups are very satisfied and view Minnesota Power as a trusted partner.</p> <p>Serving customers equitably (as they want to be served).</p>

ISSUE 14: PLANNING AND OPERATIONS, UTILITY HEALTH, AND REGIONAL STABILITY

Description: This rating scale speaks to how well Minnesota Power is operating and planning its electric system and meeting regulatory requirements, as well as the impact those operations and plans have on regional economic stability. The “best possible” state is one where Minnesota Power is operating its system very efficiently, actively adapting to change, and planning with an eye to the future, all of which lead to greater economic stability for its service territory.

Table 16: Planning and operations, utility health, and regional stability rating scale

Issue 14: Planning and Operations, Utility Health, and Regional Stability				
0 Worst Case	1 Poor	2 Barely Acceptable	3 Good	4 Best Case
<p>Brownouts and blackouts</p> <p>Frequent punitive action by regulators.</p> <p>Broad economic instability (system, customers, utility).</p> <p>Reactive planning to changes that occur.</p>	<p>Issues with reliability, power equality, and availability.</p> <p>Frequent regulatory inquiries (i.e., North American Electric Reliability Corporation/MPUC/EPA/etc. compliance issues).</p> <p>Lack of forward planning creates utility and regional instability.</p>	<p>Meeting minimum regulatory requirements for operations and planning.</p> <p>Minimal interaction with regional entities.</p> <p>Minimal forward planning to help ensure utility health and regional stability.</p>	<p>Operating efficiently and ensuring safety and reliability.</p> <p>Meeting regulatory requirements and anticipating change.</p> <p>Robust forward planning and flexible to adapt to change.</p>	<p>“Good” + exceeding regulatory requirements for operations and planning with a defined process for managing change.</p> <p>Utility engages in supporting broad economic stability for the region.</p> <p>Constructive regulatory / stakeholder relationship and productive outcomes.</p> <p>Regulation allows for timeliness, innovation, and flexibility.</p>

Reflections on the Process

During the fourth joint meeting, facilitators invited each participant, one-by-one, to state their top takeaway from the process so far, as well as any remaining questions they had. Participants were given the opportunity to pass if they so desired. Responses were captured on-screen during the meeting so that participants could ensure accuracy in the notes. Below, we have listed these comments as they appeared on-screen in the meeting, re-organized by facilitators

into general themes and edited only for grammar or clarity, in order to capture the voices of the participating stakeholders.

Notably, some of the takeaways, and especially the questions, reflect the fact that this process was the first of many steps that will take place towards developing a final resource plan. The facilitators hope that including these comments and questions in this report will increase the likelihood that they are addressed as the process move forward.

WHAT IS YOUR TOP TAKEAWAY FROM THE PROCESS SO FAR?

1. **Takeaways that express a deeper understanding of diverse perspectives, the interrelatedness of issues, and the complexity of the challenge at hand:**
 - a. Surprised and impressed with the magnitude and depth of conversation.
 - b. Impressive piece of work that illustrates the complexity of the challenge.
 - c. Impressed with everybody seeking understanding of different viewpoints.
 - d. Value of relationship-building and deeper understanding of perspectives, including common ground across parties.
 - e. The issue map helps with balancing different issues and identifying needs for give-and-take across parties.
 - f. Appreciate the opportunity to hear from multiple host community stakeholders.
 - g. There is a massive difference between what's happening on the Iron Range, and what's happening in the rest of Minnesota Power's territory.
 - h. The issues are very interrelated, like a game of pickup sticks (impacting one affects many others). Hopeful to have a conversation about solutions that can have positive impacts on multiple issues.
 - i. Enjoyed getting to know different stakeholders and getting educated around jobs and property tax implications.
 - j. Recognize the importance and value of electric service in community health, success, vitality, and ability to thrive and be sustainable. Encouraged by the time, talent, and expertise of this group.
 - k. Learned that we cannot discount concerns of any individual or group, just because their concerns are not ours, and in doing so we would risk alienating the decision makers. Have learned to take others' concerns seriously.
 - l. Recognition of the significance and magnitude of how important Boswell is to Cohasset and Northern Minnesota.
 - m. Jobs and tax base are part of the social fabric of communities, and so is the environment, since environmental impacts also have health and economic impacts.
 - n. The steel industry is moving to a lower carbon footprint, and doing that requires having competitive electric rates.

- o. We have to think long and hard and be innovative to find scenarios that have wins around the issue map.

2. Takeaways that express a desire for host community and industrial solutions:

- a. There is a common desire for best possible outcomes for Minnesota Power's service territory and communities.
- b. There is a need for state or federal policy to help power plant host communities facing this transition. This requires a broader public interest policy shift that goes beyond the utility and its ratepayers.
- c. Appreciate thoroughness, but shouldn't lose sight of efforts Minnesota Power has undertaken since 2005 to transition its electric system. State or federal policy needs to be in place before dramatic decisions are made that could exacerbate impacts to industrial customers, or it might be too late to address the issue.
- d. The Northern Minnesota group has a broad and good understanding of potential socioeconomic impacts if resource planning is done too quickly, without plans and readiness in place.
- e. We need to consider work that has been done to date on Minnesota Power's system, and costs related to that work. In the next 20 years, we need to incentivize businesses to relocate to this region.
- f. Recognition of the sheer magnitude of the threat to both Boswell host communities and large industry in the region, and the need to mitigate that.
- g. The challenge is coming one way or another, so the focus needs to be on transitioning successfully. Minnesota has a strong planning context to support this.
- h. Hope that the conversation going forward accurately reflects the issue map, which has a heavy weighting on socioeconomic issues and cost concerns, especially for rural communities.

3. Takeaways that express disappointment in the process:

- a. The process has upheld the status quo and deepened divisions. It's easy to pit jobs against the environment. The utility is seen as continuing to control the narrative. We need to focus on local opportunities.
- b. Concerned that climate was not a priority in discussions, because the issues were separated out.
- c. We talk about balancing a choice between fossil fuels and the outcomes we desire, but it isn't a choice. We need to do something, and waiting is not a choice. Wish we had talked more about how to implement that transition. Major disappointment.
- d. Trying to reach understanding between groups can stifle conversation that needs to take place.

4. Other takeaways:

- a. Technology can advance rapidly. Important to keep that in mind.
- b. Hope this will have long-lasting positive outcomes.
- c. We need solutions, and acknowledge those are in the control or purview of different levels and agencies of government.
- d. Impressed by the devotion of time to this effort, including folks for whom this is not their day job. Economic development is a marathon, not a sprint.
- e. There is a lot of overlap with environmental, social, and governance issues.

WHAT REMAINING QUESTIONS DO YOU HAVE?

1. Questions about how the process will be captured, utilized, or have influence:²¹

- a. How will these be captured and utilized?
- b. How will this process be perceived and received by regulators and the state? How will it be utilized? Concerned about this creating division, rather than creating solutions.
- c. How will this influence the IRP filing?
- d. Will this have an impact, or just be put on a shelf somewhere?
- e. How we do translate our concerns into a document that will help decision-makers deal with enormity of possible outcomes?
- f. Interested in more on how the IRP process works, and if this process stands alone, or if there's an opportunity to comment on this document?
- g. How do we continue to carry forward the voices of those for whom this is not their job?

2. Questions around what actions different parties will take in the future, or how to address challenges and opportunities:

- a. How will Minnesota Power stay vested and part of communities as the plan moves forward? Both as a community partner and an economic engine.
- b. How are we all (not just Minnesota Power) going to work together as a region and a state to advance the kind of economic development communities need now and into the future?
- c. Can Minnesota Power and the community transition Boswell into the green economy, while meeting the desired host community outcomes?
- d. How will Minnesota Power engage to lift up workers and communities in its IRP?

²¹ Following the meeting where these questions were raised, stakeholders were given the opportunity to review and provide feedback to this summary report, which seeks to address some of the questions under this theme.

- e. How are we going to incentivize more businesses to use Minnesota Power's 50 percent renewable energy sources in the future, and how do we continue to incentivize our current industries to maintain and grow operations, without outsourcing to other nations?
- f. How will the communities impacted be engaged in trying to prepare themselves for this change?
- g. How do we start creating a forward-looking plan today?

3. Questions about the issue map specifically:

- a. What in the rating scales is within the purview of the Commission, given its regulatory authority?
- b. Do the unusual times we're in ask us to prioritize some areas of the issue map over others?
- c. Are there different weights to different parts of the issue map?
- d. How do you begin to prioritize and weight the issues in the context of the changes that have been made in Minnesota Power's system in the last 15 years? And what is the right timing?
- e. Who will Minnesota Power be working with to look into the issues?

4. Other questions:

- a. Where is Blackrock (i.e., the utility investor community) in this process? We should have invited them.
- b. Can this stakeholder process be expanded, both within and beyond this IRP process, and can we expand beyond the two "camps" of Duluth environmentalists and large power customers?
- c. Who is responsible for paying the costs of solutions?
- d. We didn't talk about electrification as a strategy. How can that be addressed going forward?
- e. How does this process overlap with Minnesota Power's environmental, social, and efforts?
- f. How are we going to address the opportunities and challenges that fall outside the authority of the Commission in the IRP process?

IV. Modeling Subcommittee

In addition to the stakeholder meetings described above, GPI and CEE convened a smaller group of stakeholders to work with Minnesota Power staff on understanding and refining modeling assumptions for the 2021 IRP, as required by the Commission's January 24, 2019, order in Docket No. E-015/AI-17-568:

“In developing the modeling analysis to be used in its next resource plan, Minnesota Power shall consult with stakeholders, including but not limited to the Department of Commerce and the Clean Energy Organizations, regarding the company’s modeling inputs and parameters.”

While recruiting participants for the subcommittee, multiple stakeholders expressed that they did not want to be asked to reach consensus on modeling assumptions. Therefore, the modeling subcommittee was established with the following ground rules in place to support a productive discussion and enable the full participation of all parties:

- Minnesota Power is seeking feedback from stakeholders on assumptions used in the IRP modeling analysis.
- Any comments or suggestions made by stakeholders or the company during these meetings is not intended to bind parties later in the IRP proceeding and associated modeling analysis.
- Notes will be taken and submitted in the IRP docket, although comments or suggestions will not be tied to a specific party or individual.

The modeling subcommittee held four virtual meetings from March to September 2020. Minnesota Power staff came to each meeting with a slide deck of draft modeling assumptions and supporting data sources from which to solicit stakeholder feedback. At the end of each meeting, facilitators asked participants what else they wanted to discuss and shaped future meeting agendas around those requests. Stakeholders also communicated with Minnesota Power staff by email between meetings, reviewing the slide decks and offering questions or feedback to be addressed at the next meeting. While stakeholders were not asked to reach consensus on the modeling assumptions, all participants seemed generally satisfied with the final set of assumptions that Minnesota Power proposed to use for its EnCompass modeling.

In addition, facilitators from GPI and CEE observed that the conversations amongst the modeling subcommittee participants were casual, collaborative, and productive. Notably, some stakeholders remarked that they enjoyed the opportunity to have an open, honest, and candid conversation with utility staff ahead of a formal regulatory proceeding on an IRP.

Note on Modeling in Encompass:

While this subgroup focused on the assumptions for Minnesota Power’s IRP modeling, the tool used for modeling based on those assumptions was also an occasional and important discussion topic. For several years, Minnesota’s investor-owned utilities and regulators have used Strategist as the primary modeling tool for resource planning. However, the owner of Strategist notified the Department of Commerce in 2017 that it would stop supporting the tool. Following an evaluation process, the utilities selected EnCompass as the new modeling tool for IRPs. This subgroup provided an opportunity for Minnesota Power and stakeholders to collaborate on how to most effectively use EnCompass for IRP modeling in Minnesota.

List of Meetings

Below, we have listed the main agenda items from each meeting. We have also attached the full slide decks and meeting notes to this report. The final modeling assumptions resulting from

these meetings were included in Minnesota Power's November 1, 2020, interim report, as required by the Commission's September 25, 2020, order on this matter.

- Meeting 1 (March 18, 2020, virtual meeting)
 - Developed collective objectives and ground rules for the group.
 - Presentation and discussion of how EnCompass will be used in the IRP.
 - Explored and discussed perspectives on an initial set of key modeling assumptions including, but not limited to:
 - Technology alternatives;
 - Demand assumptions for conservation, electric vehicles, and distributed solar; and
 - Sensitivity analysis framework.
 - Identified topics of interest for future meetings.
- Meeting 2 (May 28, 2020, virtual meeting)
 - Presentation and discussion on follow-up questions from the previous meeting.
 - Discussion around:
 - Planning futures and externality costs being modeled, and
 - Detailed review of modeling sensitivities.
 - Identified topics of interest for future meetings.
- Meeting 3 (July 29, 2020, virtual meeting)
 - Presentation and discussion of:
 - Update on conservation, electric vehicle, and distributed solar base assumptions and alternatives;
 - MISO Interconnection cost for new wind and solar; and
 - Minnesota Power's approach to modeling new and existing wind and solar in IRP.
 - Responses to follow-up questions from the previous meeting.
 - Identified topics of interest for final meeting.
- Meeting 4 (September 30, 2020, virtual meeting)
 - Presentation and discussion of:
 - Capital and technology curves for wind, solar, and batteries; and
 - EnCompass onboarding.
 - Responses to follow-up questions from the previous meeting.
 - Final discussion and next steps.

Participants

The following organizations participated in the modeling subcommittee. A complete attendance list for each meeting is attached to this report.

- Energy Futures Group
- Fresh Energy
- GridLab (on behalf of Citizens Utility Board of Minnesota)

- Large Power Intervenors
- Minnesota Center for Environmental Advocacy
- Minnesota Department of Commerce*
- Sierra Club – Minnesota Chapter
- Vote Solar

**Members from the Minnesota Department of Commerce attended the first meeting as observers.*

Assumptions Discussed

Below, we have summarized some of the main discussion items from the modeling subcommittee meetings. However, for a complete review of content discussed during these meetings, please reference the slide decks and notes included in the attachments of this report.

Planning Futures and Resource Adequacy

“Planning futures” are sets of assumptions about future environmental and regulatory costs, which Minnesota Power uses to test various sensitivities. These include future costs for carbon dioxide, criteria pollutants, and environmental externalities that Minnesota Power is required to use in its modeling per the Order Establishing 2020 and 2021 Estimate of Future Carbon Dioxide Regulation Costs published under Docket No. E999/CI-07-1199 and E999/DI-19-406.

In Meeting 2, Minnesota Power staff presented 12 planning futures they were considering—six each for their summer and winter peaks (while some utilities primarily have only a summer peak to plan around, Minnesota Power is a winter-peaking utility with a similar but slightly lower summer peak). Additionally, company staff stated that they planned to apply their MISO summer planning reserve margin to their winter peak, since MISO doesn’t currently have a winter adequacy requirement, acknowledging that doing so incurs a trade-off between simplicity and accuracy.

Some stakeholders questioned whether looking at winter and summer as separate planning futures was necessary given the small differential between the two, and if the difference could instead be adequately explored through the sensitivities. In addition, there was concern that using the summer planning reserve margin for the winter peak may go too far in trading simplicity for accuracy, given that most MISO utilities are summer-peaking, potentially reducing Minnesota Power’s winter reserve margin in comparison to summer. Minnesota Power staff responded that they would monitor the difference between winter and summer peak in the load forecast.

Load Forecast

Minnesota Power’s base load forecast is captured in the company’s Annual Forecast Report (AFR), which was filed on July 20, 2020, in Docket No.: E-999/PR-20-11. The AFR takes into account several variables, including energy usage and pricing, customer count by sector, industrial production, peak demands, weather, and national and regional economic metrics.

Conservation

Minnesota Power staff stated in the third meeting that they plan to evaluate three energy efficiency and conservation scenarios for the IRP, all of which are based on the 2018 Minnesota Energy Efficiency Potential Study prepared by CEE for the Minnesota Department of Commerce: a base scenario aligned to CEE's program potential, a very high scenario aligned to CEE's max potential, and a high scenario that is in the middle of the base and very high scenarios.²²

Stakeholders wanted more information on what percentages of sales are assumed in the scenarios. Company staff clarified in the fourth meeting that the three scenarios range from about 2.5 percent to 4.5 percent of CIP-eligible sales.

Electric Vehicles

Minnesota Power staff presented in the third meeting that the company is currently serving 135 electric vehicles (EVs) and forecasts needing to serve 4,160 vehicles by 2030 in its AFR. However, similar to efficiency and conservation, for the IRP analysis the company will model sensitivities for EV adoption.

Stakeholders were interested as to whether the company has looked at different load shapes for EVs, since charging behavior can impact the extent to which EVs contribute to peak. Company staff stated in the third meeting that current charging behavior shows primarily evening charging, with some scattered charging throughout the day. In the fourth meeting, they clarified that for modeling residential EV demand, they will use daily charging patterns derived from the National Renewable Energy Laboratory (NREL) 2016 National Economic Value Assessment of Plug-In Electric Vehicles, with usage based on installed fleet size in the company's territory, and average EV kWh requirements.

Distributed Solar

In the third meeting, company staff presented that they currently have about 3.3 MW of solar installations under 40 kW in size and are projecting to have 27 MW of new installed capacity by 2030 in their AFR. Similar to energy conservation and EVs, for the IRP analysis Minnesota Power will model sensitivities to evaluate different levels of distributed solar adoption.

Following this presentation, stakeholders asked for more information on the number of solar installations that support the numbers presented. In the fourth meeting, company staff responded by showing some of the key assumptions for distributed solar from the AFR.

²² Center for Energy and Environment, Optimal Energy, and Seventhwave, *Minnesota Energy Efficiency Potential Study: 2020-2029* (December 4, 2018), https://www.mncee.org/MNCEE/media/PDFs/MN-Potential-Study_Final-Report_Publication-Date_2018-12-04.pdf.

Utility-Scale Wind and Solar

For modeling utility-scale wind and solar, Minnesota Power staff presented in the third meeting that they will develop projections for the effective load carrying capacity (ELCC) of wind—a value used to determine how much capacity is accredited to a resource in order to ensure adequate supply—based on MISO’s Renewable Integration Impact Assessment.

During the third meeting, there was a discussion about whether the ELCC values of wind and solar would be bolstered if considered together rather than separately. Multiple stakeholders offered resources on this topic and Minnesota Power staff agreed to follow-up on those offers. In the fourth meeting, they came back to the group after speaking with MISO staff and proposed to increase the individual wind and solar ELCC base curves to account for the co-benefits of wind and solar together. Stakeholders said they appreciated the company making this change.

Capital Costs for Renewables and Batteries

Minnesota Power staff presented the following proposed assumptions for wind, solar, and storage capital costs in the fourth meeting:

- Wind assumptions will be based on internal and external expertise, and will be lower than the 2020 NREL Annual Technology Baseline (ATB).
- Solar assumptions will be taken directly from the 2020 NREL ATB.
- Storage assumptions will be based on review by a third-party engineering consultant, with capital costs for four-hour lithium-ion storage roughly in line with NREL assumptions.

Stakeholders were also interested as to whether Minnesota Power was modeling a solar plus storage hybrid resource. Company staff responded that as of the fourth meeting, they were hoping to include a hybrid resource, but noted that even without this, the model could select solar and storage resources at the same time.

V. Conclusion

In the eyes of the stakeholders that participated in this process, Minnesota Power’s 2021 integrated resource plan is uniquely at the convergence of serious potential impacts to consumers, communities, and the environment. In particular, the Boswell Energy Center, Minnesota Power’s last remaining coal plant and its largest source of baseload power generation, was a focal point for many participants.

Through this process, stakeholders collaborated to define those serious potential impacts by developing forward-looking, five-point rating scales for each of fourteen key issues that they feel are important to consider as part of Minnesota Power’s resource planning efforts. The rating scales, which are described in this report, list indicators or outcomes under a best-case scenario, a worst-case scenario, and three levels in between, collectively helping to answer the following key questions:

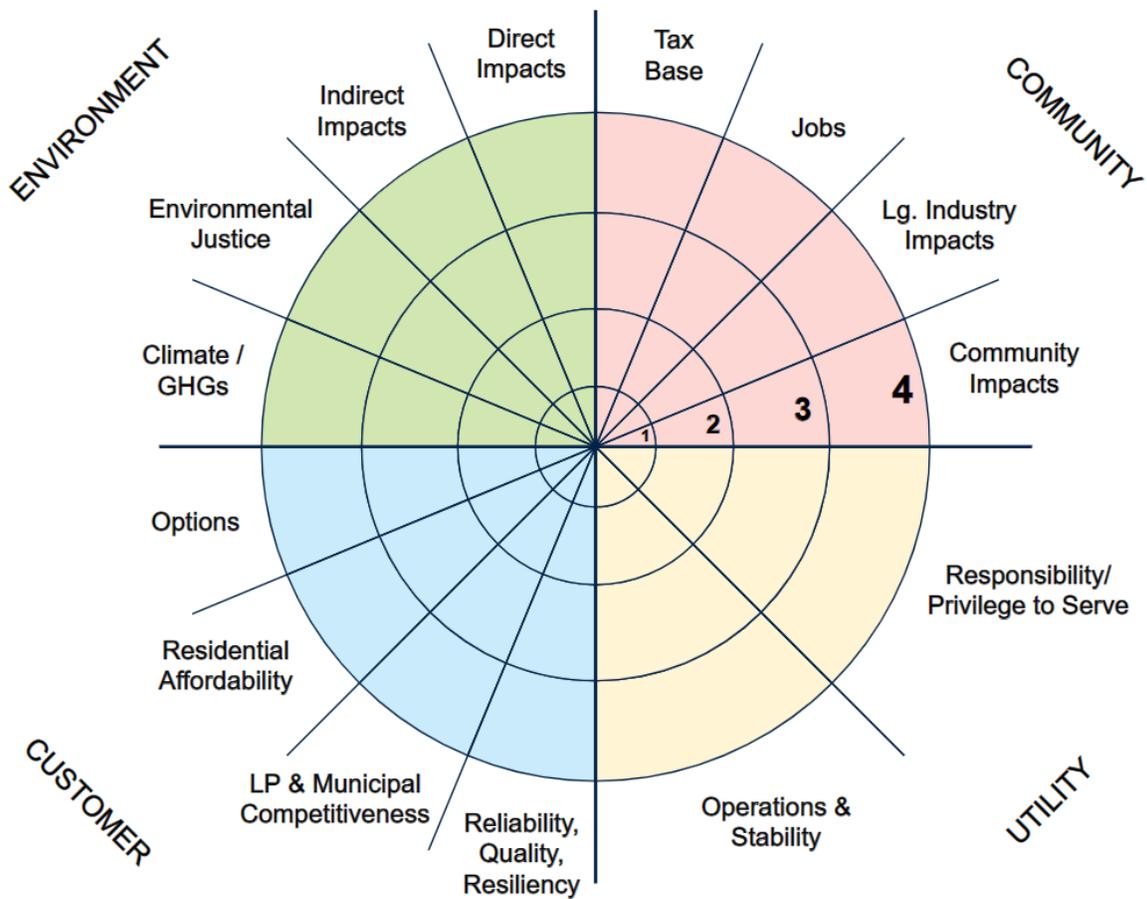
1. What is most important to Minnesota Power’s stakeholders?
2. How do stakeholders want Minnesota Power to optimize their system?

3. What are the benefits stakeholders want to create and the drawbacks stakeholders want to avoid?

In addition, each of the fourteen issues have been compiled into an IRP issue map (see Figure 3 below) that can be used to support ongoing dialogue around the following two additional questions:²³

4. How might different resource planning scenarios impact the issues that stakeholders care about most?
5. Where there are potential trade-offs, real or perceived, in trying to balance the full set of issues that stakeholders care about?

Figure 3. Blank IRP issue map



Source: Adapted from the Sustainability Value Map developed by Chris Butters / GAIA Norway.

²³ An editable version of the issue map is available online at https://scripts.betterenergy.org/PowerMap/MN_Power_Map.html

Importantly, this process did not consider solutions, strategies, or scenarios that would be necessary to answer these latter two questions. That work is left to Minnesota Power, regulators, and the stakeholders who will participate in the forthcoming regulatory proceeding that will follow Minnesota Power's official IRP filing on February 1, 2021.

The IRP issue map does, however, provide a framework for understanding the breadth and depth of stakeholder perspectives regarding the IRP and a foundation for ongoing discussions. It also helps to capture the perspectives of stakeholders who participated in this process, but who may not have time and resources to participate in the formal IRP proceeding.

In addition, appropriately addressing the 14 issues may require action beyond the scope of integrated resource planning. If this turns out to be the case, the issue map can continue to be used as a tool for discussion and planning to ensure that stakeholder concerns and aspirations are taken into account.

The facilitators would like to thank all of the stakeholders for their time, thoughtfulness, and patience throughout this process, as well as Minnesota Power for the opportunity to convene these important conversations.

VI. Attachments

Table of Contents – Attachments:

Attachment 1: Northern Minnesota Meeting Materials	1
Slide deck shared at all four meetings	2
ItasCAP Meeting – November 26,2019.....	20
Meeting Agenda	20
Meeting Attendance.....	22
Meeting Overview.....	23
Meeting Notes	27
Duluth Outreach Meetings – December 9,2019	32
Invitation Letter from President of ALLETE	32
Morning Meeting Agenda.....	33
Morning Meeting Attendance	34
Afternoon Meeting Agenda	35
Afternoon Meeting Attendance	36
East Range Meeting – December 19,2019	37
Meeting Agenda	37
Meeting Attendance.....	40
Meeting Overview.....	41
Meeting Notes	44
Northern Regional Stakeholders Meeting – January 28, 2020	49
Meeting Agenda	49
Meeting Attendance.....	51
Slide Deck	52
Meeting Notes	69
On-Screen Meeting Notes	71
Northern Minnesota Survey Results	77
Community Values	78
Customer Values.....	80
Environmental Values.....	85

Other Values	87
Process Suggestions.....	88
Resource Considerations	91
Attachment 2: Twin Cities Meeting Materials.....	1
Meeting 1 – December 4, 2019.....	2
Meeting Agenda	2
Meeting Attendance.....	3
Meeting Notes	4
Meeting 2 – December 17, 2019.....	6
Meeting Agenda	6
Meeting Attendance.....	8
Slide Deck	9
Meeting Notes	56
Meeting 3 – March 3, 2020	59
Meeting Agenda	59
Slide Deck	60
Meeting Notes	181
Attachment 3: Joint Meeting Materials	1
Pre-Read Slide Deck	2
Attendance (for all joint meetings)	28
Meeting 1 – March 9, 2020	30
Meeting Agenda	30
Meeting Notes	31
Meeting 2 – August 21, 2020	36
Meeting Agenda	36
Slide Deck	37
Meeting Notes	53
Meeting 3 – August 21, 2020	56
Meeting Agenda	56

Slide Deck	57
Meeting 4 – September 29, 2020.....	72
Meeting Agenda	72
Slide Deck.....	73
Meeting Notes	85
Meeting 5 – November 17, 2020.....	89
Meeting Agenda	89
Slide Deck.....	90
Meeting Notes	137
IEDC – Itasca County Highlights Report	143
Attachment 4: Modeling Subcommittee Meeting Materials.....	1
Attendance (for all subcommittee meetings)	2
Meeting 1 – March 18, 2020	3
Meeting Agenda	3
Slide Deck.....	4
Meeting Notes	22
Meeting 2 – May 28, 2020	28
Meeting Agenda	28
Slide Deck.....	29
Meeting Notes	48
Meeting 3 – July 29, 2020.....	51
Meeting Agenda	51
Slide Deck.....	52
Meeting Notes	70
Meeting 4 – September 30, 2020.....	76
Meeting Agenda	76
Slide Deck.....	77
Meeting Notes	91