APPENDIX E: ENVIRONMENTAL POLICY AND COMPLIANCE ASSESSMENT

This Appendix includes information on Minnesota Power's (or the "Company's") environmental compliance, presented in the following sections:

- Part 1: Minnesota Power's Environmental Stewardship
- Part 2: Environmental Control Summary and Facility Overview
- Part 3: Environmental Regulations Summary

A. Part 1: Minnesota Power's Environmental Stewardship

Minnesota Power has a history of excellence in environmental stewardship that has contributed to the state's overall track record of leadership on environmental issues. Strong performance has been achieved through the installation of timely, cost-effective environmental controls and new energy resources that balance customers' needs for reliable and affordable energy with sound environmental stewardship. Environmental stewardship is one of Minnesota Power's core values and the Company balances the environmental impacts of its activities with its obligation to customers, communities, shareholders, and future generations. As outlined in the Company's 2025 Integrated Resource Plan ("2025 IRP"), Minnesota Power is meeting its environmental objectives in compliance with, or in advance of, regulatory requirements and deadlines.

Part 2 of this Appendix includes an overview of the Minnesota Power generating facilities, units, and environmental controls; additional detailed information on units and controls can also be found in Appendix C. Minnesota Power's environmental compliance planning measures are highlighted in Part 3 of this Appendix. Part 3 provides an overview of environmental regulations and the Company's planned measures for compliance assumed in the 2025 IRP. These measures reinforce the Company's commitment to preserving exemplary environmental performance while delivering reliable and affordable electric service to its customers.

Minnesota Power took into consideration several environmental cost futures in the 2025 IRP analysis with varying levels of environmental costs for criteria pollutants and carbon regulation costs on emissions from existing and new sources per Minnesota requirements for resource planning. For more information on the Company's approach to modeling environmental costs and carbon regulation costs, please refer to Section IV: 2025 Modeling Approach and Appendix J: Assumptions and Outlooks.

Minnesota Power's *Energy**Forward*** strategy has achieved significant emissions reductions since the Company passed the milestone of delivering a power supply over half renewable energy in 2020.[1] Further reductions will be attained with the recommended 2025 Plan, placing Minnesota Power on a path to provide 90 percent renewable energy by 2035 and meeting Minnesota's Carbon-Free Standard ("CFS").[2]

The Company's 2025 Plan represents meaningful action on carbon emission reduction by having a plan projecting a 95 percent reduction from 2005 levels. The Company is also investigating carbon neutrality advancement efforts in the near term. Minnesota Power is particularly interested in carbon neutrality efforts that leverage the natural resources in northern Minnesota while investing in the unique region it serves. As an example of this effort, in January

[1] 2023 Annual Report, ALLETE, available at https://www.allete.com/Content/Documents/Investors/AnnualReports/2023AR.pdf (March 2024).
[2] Minn. Stat. § 216B.1691 Subd. 2g.

2021, Minnesota Power partnered with the University of Minnesota's Natural Resources Research Institute ("NRRI") on a grant application to the United States Forest Service to investigate the production of biochar at Minnesota Power facilities, evaluate carbon credit opportunities, and deploy a biochar soil amendment at a Company or customer site. In late 2022, NRRI completed a small-scall demonstration project with Minnesota Power, applying a small quantity of balsam fir biochar to a capped coal ash landfill at the Boswell Energy Center ("BEC") in Cohasset, Minnesota.[3]

Biochar is carbonized biomass that is obtained from sustainable sources (like northern Minnesota timber) and sequestered in soils to sustainably enhance their agricultural and environmental value.[4] As the paper industries that have supported northern Minnesota's economy for over a century face challenges with declining demand, finding new and sustainable markets for wood resources is critical to the regional economy and forest management. Minnesota Power looks forward to investing in this initiative and other carbon neutrality efforts on its path to a carbon-free energy future.

Ongoing proceedings related to the implementation of Minnesota's CFS are currently considering what role biomass resources may play in the state's energy future.[5] In November 2024, the Minnesota Public Utilities Commission ("Commission") initiated a proceeding to develop a record on full and partial compliance with the CFS, including whether biomass, renewable natural gas, and solid waste should be eligible as fully or partially carbon-free generation resources based on a fuel life-cycle analysis.[6] Minnesota Power continues to hold that that carbon-free energy should be determined via a life-cycle analysis, because some fuels (such as biomass) can be shown to be carbon neutral or even carbon negative under certain circumstances. Minnesota Power's perspective on this matter is discussed further in Appendix I.

On March 12, 2025, the United States Environmental Protection Agency ("EPA") announced its intent to reevaluate numerous environmental regulations across a variety of topics, including coal ash, industrial water discharges, greenhouse gases, particulate emissions, regional haze, and others.[7] Several of these regulations are discussed in detail in this Appendix and were included as part of 2025 IRP planning assumptions.

However, the EPA's March 12, 2025 announcement does not constitute a formal rulemaking process, and does not contain technical details or other necessary information about any specific potential changes to environmental regulations. Therefore, the Company cannot speculate on outcomes resulting from this new EPA initiative, and no changes are being made to this Appendix or the 2025 Plan at this time as a result.

[3] Ancient biochar method revamped for modern challenges, University of Minnesota Duluth, available at https://nrri.umn.edu/news/balsam-fir-biochar (Feb. 7, 2023).
[4] What is Biochar?, Biochar for Sustainable Soils, available at https://biochar.international/the-biochar-opportunity/what-is-biochar/.
[5] *In the Matter of an Investigation into Implementing Changes to the Renewable Energy Standard and the Newly Created Carbon Free Standard under Minn. Stat. 216B.1691*, Docket No. E-999/CI-23-151 and *In the Matter of a Commission Investigation into a Fuel Life-Cycle Analysis Framework for Utility Compliance with Minnesota's Carbon-Free Standard*, Docket No. E-999/CI-24-352.
[6] *In the Matter of a Commission Investigation into a Fuel Life-Cycle Analysis Framework for Utility Compliance with Minnesota's Carbon-Free Standard*, Docket No. E-999/CI-24-352, Order Initiating New Docket and Clarifying "Environmental Justice Area" (Nov. 7, 2024).
[7] EPA Launches Biggest Deregulatory Action in U.S. History, United States Environmental Protection Agency, available at https://www.epa.gov/newsreleases/epa-launches-biggest-deregulatory-action-us-history (Mar. 12, 2025).

Outcomes from rulemaking or other actions taken by the EPA in response to this new initiative will be incorporated into the Company's regular business planning at the time of their implementation. This may include new, revised, or repealed regulations, or other directives.

Minnesota Environmental Leadership

Minnesotans and their neighbors value the quality of the state's natural resources and share a desire to improve the quality of these resources for everyone's enjoyment. Minnesota Power has delivered emission reductions that have improved air and water quality through responsible environmental stewardship while meeting its obligation to serve its customers. Since 2005, the Company has reduced nitrogen oxide ("NOx") emissions by 87 percent and sulfur dioxide ("SO2") emissions by 98 percent.[8] Mercury emissions have also collectively decreased by 92 percent in the Company's thermal fleet.[9] In addition, numerous policies at the state and federal level provide for effective solid waste management and protection of groundwater resources. Minnesota Power has reduced total water use by 90 percent, for an average water reduction of over 150 billion gallons per year since 2005.[10] This has been the result of decreased cooling water use following retirements at Taconite Harbor Energy Center ("THEC") and BEC Units 1 ("BEC1") and 2 ("BEC2"), along with the natural gas conversion of Laskin Energy Center ("LEC").[11]

Air quality in Minnesota has steadily improved over recent decades and the state anticipates continuing to achieve federal air quality standards set by the United States Environmental Protection Agency ("EPA"). State policies have provided for significant reductions in regional mercury emissions in advance of national regulatory measures and Minnesota has reduced pollutant loading into water bodies while expanding monitoring for environmental quality indicators.

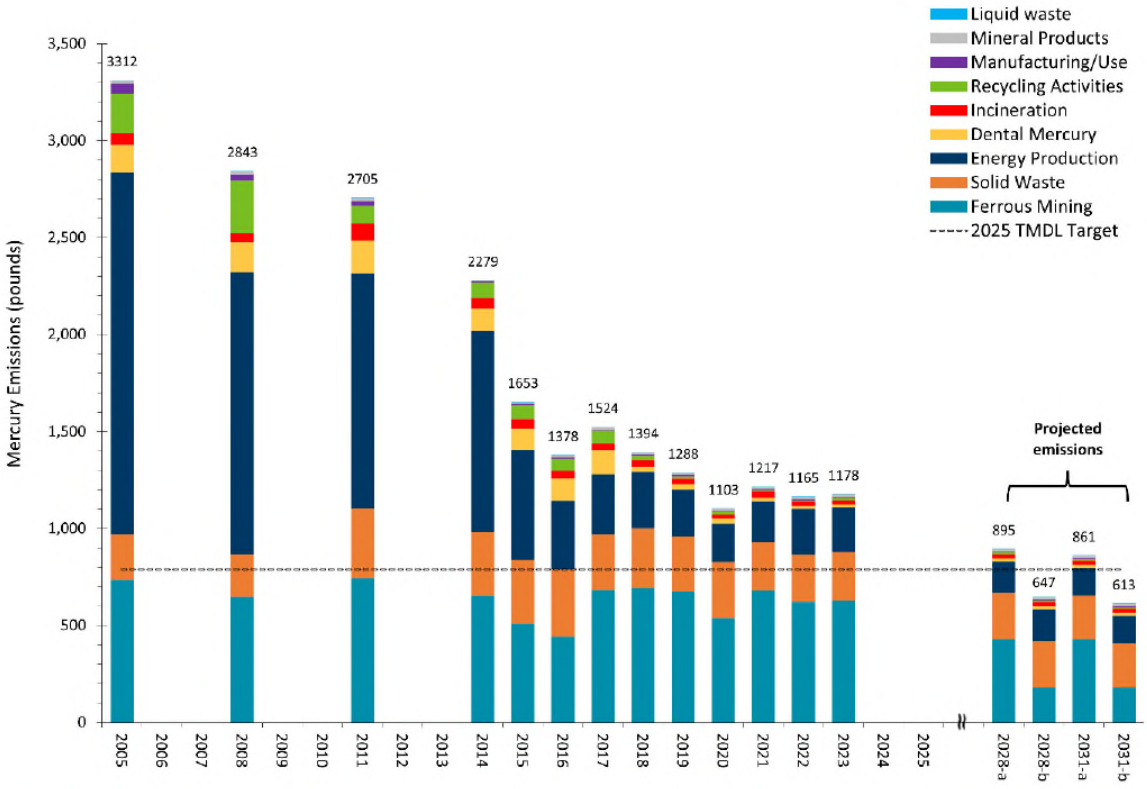
Minnesota has demonstrated leadership in several important environmental and energy policy initiatives, including:

- Conservation and energy efficiency improvement programs have been in place for several decades in the state. Minnesota Power continues to meet and exceed these program goals annually.
- SO_2, NO_x, and volatile organic compound emission reductions through early programmatic initiatives like Clean Air Minnesota, the Metropolitan Emission Reduction Program, and the 2006 Arrowhead Regional Emissions Abatement Plan ("AREA Plan"), all of which improved Minnesota air quality in advance of federal programs such as the Clean Air Interstate Rule (later the Cross State Air Pollution Rule) and numerous other air quality regulations.
- Visibility impairment improvement measures through the Minnesota Pollution Control Agency's ("MPCA's") Northeast Regional Emissions Abatement program, which required 20 to 30 percent collective reductions in targeted Minnesota SO_2 and NO_x emissions. This is in line with the Regional Haze program and its decennial "Reasonable Further Progress" requirements.

[8] 2024 Corporate Sustainability Report at 83-84, ALLETE, available at https://allete.blob.core.windows.net/allete/CSR/ALE-Sustainability-Report.pdf.
[9] 2024 Corporate Sustainability Report at 84, ALLETE, available at https://allete.blob.core.windows.net/allete/CSR/ALE-Sustainability-Report.pdf.
[10] 2024 Corporate Sustainability Report at 24, ALLETE, available at https://allete.blob.core.windows.net/allete/CSR/ALE-Sustainability-Report.pdf.
[11] 2024 Corporate Sustainability Report at 24, ALLETE, available at https://allete.blob.core.windows.net/allete/CSR/ALE-Sustainability-Report.pdf.

- Minnesota's plan to reduce mercury releases by 2025, based on its Total Maximum Daily Load ("TMDL") Study, approved by the EPA in 2007. Under this initiative, the largest coal-fired electric generation units were required to reduce mercury emissions by 90 percent in 2018 from 2005 levels. The electric utility sector met this goal early, by 2015.[12]

Figure 1. Minnesota Mercury Reduction Initiative TMDL Goal Progress[13]



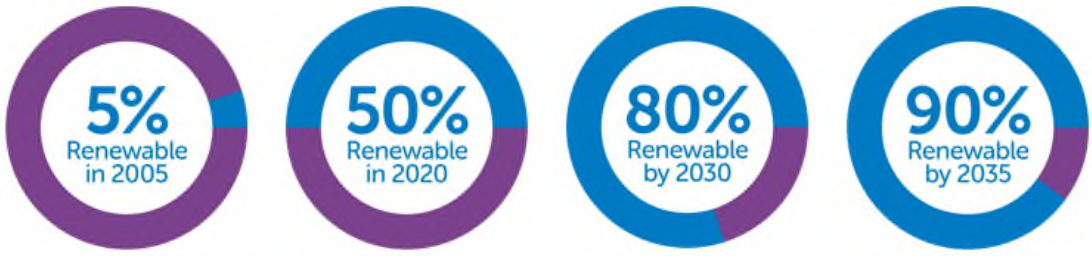
a - These projections are based on the taconite industry meeting the new mercury limits in EPA's national standards.
b - These projections are based on the taconite industry meeting the required 72% reduction specified in Minn. R. 7007.0502.

- Minnesota's Renewable Energy Standard ("RES") requirements phased in expanded renewable energy under Minn. Stat. § 216B.1691, which requires Minnesota utilities to generate or procure the following standard percentages of total retail sales from eligible renewable energy technologies: 12 percent by 2012; 17 percent by 2016; 20 percent by 2020; 25 percent by 2025; and 55 percent by 2035.[14] The first renewables progress target was met in 2012, and Minnesota Power began providing over 50 percent renewable

[12] The Air We Breathe: Minnesota's Air Quality at 37, Minnesota Pollution Control Agency, available at https://www.pca.state.mn.us/sites/default/files/lraq-1sy25.pdf, page 37 (Jan. 2025).
[13] The Air We Breathe: Minnesota's Air Quality at 37, Minnesota Pollution Control Agency, available at https://www.pca.state.mn.us/sites/default/files/lraq-1sy25.pdf, page 37 (Jan. 2025).
[14] Minn. Stat. § 216B.1691, subd. 2a.

energy in 2020.[15] The 2025 Plan, if approved by the Commission, will provide 90 percent renewable energy by 2035.

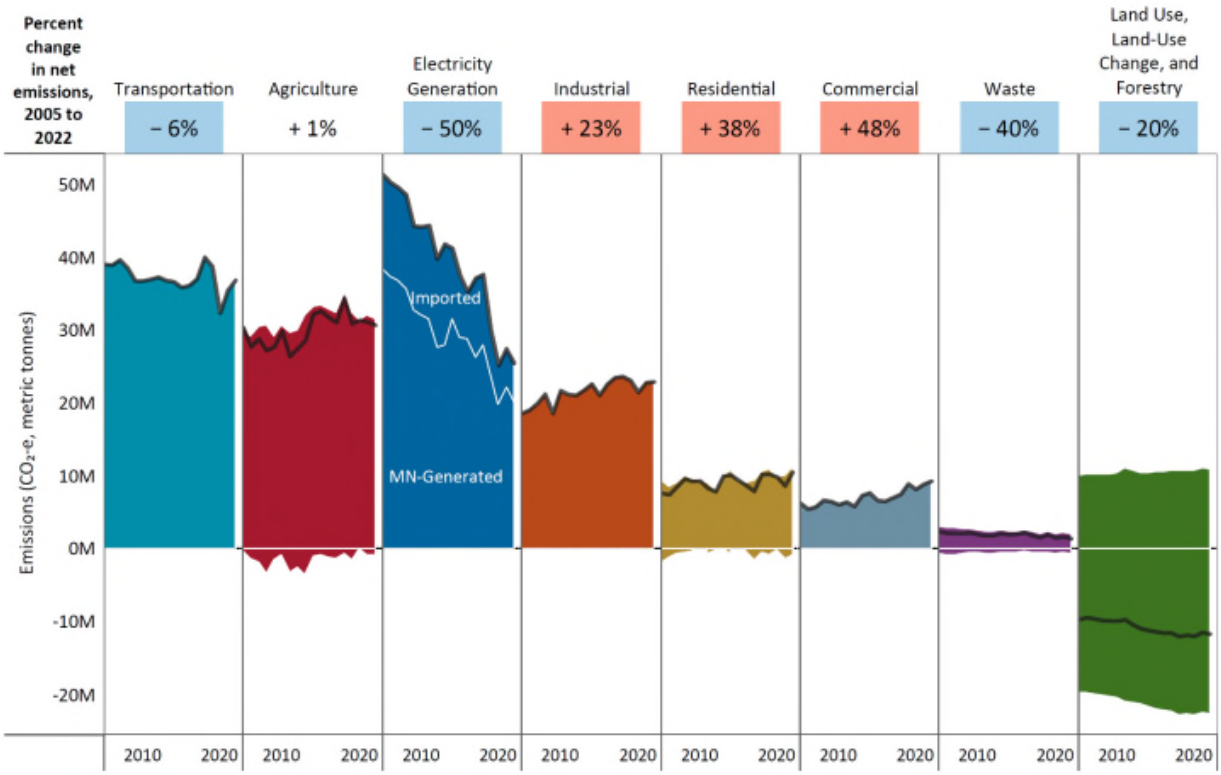
Figure 2. Minnesota Power's Projected Renewable Generation



- In 2007, Minnesota's Next Generation Energy Act ("NGEA") set a goal for greenhouse gas ("GHG") emission reductions of 15 percent from all sources by 2015, 30 percent by 2025, and 80 percent by 2050, compared to a 2005 baseline. In 2023, the state Legislature updated these goals to reflect the state's Climate Action Framework. Minnesota's current goals are to reduce GHG emissions 50 percent by 2030 from a 2005 baseline and achieve net-zero emissions by 2050.[16] In 2025, the MPCA reported that 2022 GHG emissions across all industry sectors had declined by about 14 percent compared to the 2005 baseline (see Figure 3).

[15] 2023 Annual Report, ALLETE, available at https://www.allete.com/Content/Documents/Investors/AnnualReports/2023AR.pdf (Mar. 2024).
[16] Minn. Stat. § 216H.02, subd. 1.

Figure 3: Greenhouse Gas Emissions from Minnesota by Economic Sector, 2005 – 2022[17]



B. Part 2: Environmental Control Summary and Facility Overview

Boswell Energy Center Unit 3 ("BEC3")

BEC3 is a dry bottom tangential-fired boiler that combusts sub-bituminous coal and has a heat input capacity of 4,425 MMBtu/hour. A major environmental upgrade was completed at BEC3 in 2009 to meet state and federal environmental requirements. Following the retrofit, the unit now employs low NO_x burners, over-fired air, and a selective catalytic reduction system for NO_x control, a wet flue gas desulfurization ("WFGD") system for SO_2 control, an activated carbon injection system, and a fabric filter for mercury and particulate control. These controls represent state-of-the-art technology for addressing air emissions. Actual emission reductions from these investments include an 87 percent reduction in NO_x, 98 percent reduction in SO_2, 94 percent reduction in particulate matter ("PM"), and 90 percent reduction in mercury.

Boswell Energy Center Unit 4 ("BEC4")

BEC4 is a dry bottom tangential-fired boiler that combusts sub-bituminous coal and has a heat input capacity of 6,800 MMBtu/hour. In 2016, BEC4 implemented a major control retrofit to add a semi-dry flue gas desulphurization ("FGD"), fabric filter, and powder activated carbon ("PAC") injection system. The multi-pollutant system reduces mercury, PM, SO_2, and other hazardous air pollutants while also reducing plant wastewater. Combined with BEC4's existing low NOx burners, separated close-coupled over-fire air system, and Selective Non-Catalytic

[17] Greenhouse gas emissions in Minnesota 2005-2022 at 6, Minnesota Pollution Control Agency, available at https://www.pca.state.mn.us/sites/default/files/lraq-3sy25.pdf (Jan. 2025).

Reduction ("SNCR") technologies for NOx control, the BEC4 retrofit project helped achieve compliance with enacted or pending federal and state environmental rulemakings regulating air and water emissions and solid byproducts from coal-fired power plants. Minnesota Power is achieving at least 90 percent mercury removal at BEC4 using PAC in combination with a fabric filter.

BEC Bottom Ash Handling (Dry Bottom Ash)

In 2022, the installation of a dry bottom ash conversion project was completed. This technology, a submerged grit conveyor, was installed on both BEC3 and BEC4, where both units share an ash unloading building. This installation has eliminated the need for the BEC Bottom Ash Pond, which will be dewatered and closed.

Laskin Energy Center Units 1 & 2

LEC's two generating units, LEC Units 1 and 2 located in Hoyt Lakes, Minnesota, are near identical boilers, similar in design and intended operation. The units are 660 MMBtu/hour tangentially-fired steam generators and were both put into service in 1953. Originally known as the Aurora Steam Station, the facility was commissioned as a coal-fired facility in 1953. In 2015, the facility was converted from coal to natural gas using the existing steam boilers, turbine generators, and auxiliary equipment. The boilers are equipped with low NOx burners and overfire air for NOx control.

Hibbard Renewable Energy Center Units 3 & 4

Hibbard Renewable Energy Center is a steam and power generating facility located in Duluth, Minnesota. The site contains two 590 MMBtu/hour steam generating boilers that are capable of combusting wood, sub-bituminous coal, and natural gas. The boilers are equipped with multiple cyclones and electrostatic precipitators for PM control. The pollution control equipment achieves 99 percent control of PM.

Additional details related to system and unit capacity design can be found in Appendix C: Existing Power Supply.

Minnesota Power operates its emission units and environmental controls to comply with federal regulations and active permits. Minnesota Power's thermal generation resources meet or exceed all currently applicable environmental standards, as discussed in more detail throughout this Appendix.

C. Part 3: Environmental Regulations Summary

Minnesota Power closely follows state and federal regulations related to air emissions, water emissions, and solid waste from power plants. In the following sections, the Company describes pending environmental regulations relative to the Company's facilities and its current assessment of their applicability. The regulations are grouped into three broad categories: 1) air and climate regulations; 2) water use and discharge, and management of the ash or solid waste, which is a byproduct of coal combustion; and 3) those related to environmental justice, wildlife, and environmental review.

The primary regulations detailed in the following sections include:

Air and Climate

- EPA Regulation of GHG Emissions: EPA "Section 111" Rules
- Emission Guidelines for Greenhouse Gas Emissions for Electric Utility Generating Units (111(d))

- Standards of Performance for Greenhouse Gas Emissions for Modified Coal-fired Steam Electric Generating Units and New Construction and Reconstruction Stationary Combustion Turbine Electric Generating Units (111(b))
- State Climate Initiatives: NGEA and CFS
- National Ambient Air Quality Standards ("NAAQS")
    - Cross-State Air Pollution Rule ("CSAPR")
- Good Neighbor Plan for 2015 Ozone NAAQS
- National Emission Standards for Hazardous Air Pollutants ("NESHAPs")
- Mercury and Air Toxics Standards ("MATS") Rule
- Industrial Boiler Maximum Achievable Control Technology ("IBMACT") Rule
- Minnesota Mercury Emissions Reduction Act ("MMERA")
- Clean Air Visibility Regional Haze Rule ("Regional Haze")

Water and Solid Waste

- Coal Combustion Residuals ("CCR") regulations
- Water Effluent Regulation ("Effluent Limitations Guidelines" or "ELG")

Environmental Justice, Wildlife, Environmental Review

- Environmental Justice: Minnesota Cumulative Impacts Rulemaking
- Wildlife Regulations
- Environmental Review

As environmental regulations work their way through the finalization process, each rule may be at various stages with variable levels of associated certainty. For the purposes of the Company's forward-looking resource planning and decision making, Minnesota Power identifies which regulations are most certain for the time period being evaluated and includes these in its 2025 Plan. Minnesota Power identified that all listed environmental regulations have enough clarity to be considered part of its 2025 IRP. Each of these regulations is explained in detail below, with a potential impact analysis on the Company's generation.

Minnesota Power's emission reduction projects implemented over the past several decades, such as the AREA Plan, BEC3 and BEC4 retrofits, and unit and facility retirements and repowers, have positioned the Company to be well-prepared for both current and future environmental regulations.

While some rules have the potential to require additional measures to be implemented, the Company's expectation at this time is that its thermal fleet can continue to operate over the study period without the need for significant capital investment beyond what is included in the 2025 IRP to comply with future environmental regulations.

Air and Climate

EPA Regulation of GHG Emission: EPA Section 111 Rules

On April 25, 2024, the EPA issued a set of final GHG regulations to establish new emissions standards and guidelines for both existing and new fossil fuel-fired electric generating units ("EGUs") under Section 111.

The final rules revise new source performance standards ("NSPS") for new, modified, and reconstructed EGUs (Section 111(b) of the Clean Air Act) and establish new emission guidelines for existing EGUs (Section 111(d) of the Clean Air Act). The action also officially repeals the Affordable Clean Energy ("ACE Rule") predecessor regulation.

Compliance will be required beginning January 1, 2030 for existing sources, and upon commencing operation of new units. The 111(d) rule also requires states to submit plans to provide for the establishment, implementation, and enforcement of performance standards for existing sources. States must submit either a state plan or negative declaration letter to the EPA by May 11, 2026.

The final Section 111 rules apply to several Company assets, including existing EGUs at the BEC and LEC facilities as well as proposed new combined cycle and combustion turbine natural gas-fired units. The Company anticipates compliance with the rules may require operational or planning adjustments for certain units, as explained in more detail below. The Nemadji Trail Energy Center ("NTEC") facility[18] or any new gas generation proposed in the 2025 Plan would be expected to meet the new Section 111(b) NSPS requirements as designed and should not be significantly impacted by this rulemaking. However, additional litigation and/or rulemakings may occur, and the Company will continue to monitor developments.

For existing units, the state implementation plan process for 111(d) will be a significant factor in determining specific requirements and timing at affected units. Minnesota Power will work with the MPCA on development of the 111(d) state plans due by May 2026. The Company is also monitoring litigation of the final Section 111 rules, which began when the rules were published in the Federal Register on May 9, 2024 and continues in federal court. Outcomes from ongoing litigation may impact both the timing of rule effectiveness and the ultimate compliance obligations required by the rule; the Company would then reevaluate its Section 111 compliance plan as appropriate.

The following is a summary of existing Minnesota Power facilities subject to the Section 111(d) rule and their compliance pathway.

LEC 1 & 2 Section 111 Rule

Under the rules, the LEC units would be subcategorized as natural gas-fired steam generating units and specific compliance obligations hinge on the operational capacity factor level of each unit. Potential Section 111 rule classifications for natural gas-fired steam generating units include low load, intermediate load, and base load units. Each of these subcategories and classifications have different requirements, ranging from the use of uniform fuels to heat input-based limits or emission rate limits in units of "pounds of CO_2 per gross megawatt hours." While the specific compliance demonstration at the LEC units would be decided during the 111(d) state implementation process, the 2025 plan provides a viable pathway to achieve compliance without additional capital investments.

BEC3 Section 111 Rule

The Company's proposed 2025 Plan to cease coal operations at BEC3 by the end of 2029 and refuel with 100 percent natural gas aligns with the Section 111 rules timeframe requiring compliance by January 1, 2030. Converting BEC3 to 100 percent natural gas should result in natural gas-fired steam generating unit subcategory applicability. The compliance pathway at a

[18] The Company's share of NTEC and associated contracts are still in effect, but the 113 MW associated with NTEC was removed from the Capacity Expansion Analysis for the 2025 IRP to restudy the wholistic need for new natural gas generation on the Company's system. On receipt of final local permits for NTEC, and if available to meet IRP needs, the Company will refile with the Commission as required.

converted BEC3 would mirror that for the LEC natural gas-fired units, with different compliance demonstration options (uniform fuels, limits, etc.) dependent upon specific capacity factor load ranges, with specific compliance demonstrations worked out in the state plan process, as explained previously. The 2025 Plan's capital investments and operational changes at BEC3 will permit BEC3 operation beyond the Section 111 compliance deadline of January 1, 2030 even if the regulations remain in place and are unaffected by ongoing litigation or regulatory changes.

BEC4 Section 111 Rule

Starting on the compliance deadline of January 1, 2030, BEC4 options to achieve Section 111 compliance could include cofiring, refueling/repowering, or retirement, and the path chosen would dictate the applicable compliance obligations. In the Company's 2021 Integrated Resource Plan, the Commission approved BEC4 to operate on coal through 2035. Under the Section 111(d) regulations, continuing to operate on coal through 2035 is not permissible and earlier action must be taken at BEC4 to comply. The 2025 Plan's recommendation to co-fire 40 percent natural gas by heat input in BEC4 would result in "medium-term unit" subcategory applicability under Section 111(d). Medium-term coal-fired steam generating units must commit to permanently ceasing operations before January 1, 2039. The 2025 Plan's additional capital investments and operational changes at BEC4 would therefore yield Section 111 compliance at BEC4 past 2030.

HREC Section 111 Rule

HREC is presumed to be exempt from Section 111 applicability due to the fuel mix combusted. However, any specific compliance obligations associated with the exemption would need to be determined during the state plan process.

The 2025 Plan includes recommended actions and associated capital and operations and maintenance costs required at BEC3 and BEC4 to comply with Section 111(d). There is no additional action anticipated at LEC for the facility to continue operating under Section 111(d). Lastly, HREC is presumed exempt from Section 111(d) because its main fuel source is biomass. The recommended actions in the 2025 Plan, if approved by the Commission, will result in an existing thermal fleet that is compliant with Section 111(d).

State Climate Initiatives: Greenhouse Gas Emissions Reduction Goals

Minnesota enacted the NGEA in 2007, setting statewide goals to reduce GHG emissions from all sectors by 15 percent by 2015, 30 percent by 2025, and by 80 percent by 2050, compared to a 2005 baseline. In 2023, these goals were updated to reflect the state's 2022 Climate Action Framework ("CAF"), which established a goal for Minnesota to reduce GHG emissions by 50 percent by 2030 and to achieve net-zero emissions by 2050.[19] The CAF includes steps and measures of progress, organized into six climate action areas: clean transportation, climate-smart natural and working lands, resilient communities, clean energy and efficient buildings, healthy lives and communities, and clean economy.

Minnesota did not reach the 2015 goal of 15 percent GHG emissions reductions, and whether the 2025 goal will be attained is not yet known. The impact of the COVID-19 pandemic, which temporarily depressed economic activity and therefore GHG emissions, is also an important factor affecting recent data. Minnesota Power has been a key participant in Minnesota's electricity generation emission reductions. As of 2022, emissions from the electricity generation sector had declined by 50 percent as compared to 2005 levels.[20] Minnesota Power's power supply

[19] Minn. Stat. § 216H.02, subd. 1.
[20] Greenhouse gas emissions in Minnesota 2005-2022, Minnesota Pollution Control Agency, available at https://www.pca.state.mn.us/sites/default/files/lraq-3sy25.pdf (Jan. 2025).

transformation to date has already achieved 50 percent carbon reduction, meeting the goal a decade early, and the recommended 2025 Plan is projected to achieve 95 percent carbon reduction by 2035.

State Climate Initiatives: Carbon Free Standard

Following legislation passed into law in 2023, the State of Minnesota is currently developing standards and frameworks to support the mandate for public utilities to generate or procure 80 percent carbon-free electricity by 2030, 90 percent by 2035, and 100 percent by 2040. The Commission has initiated proceedings in Docket Nos. E999/CI-23-151 and E999/CI-24-352 to address the implementation of the CFS. As a regulated utility, Minnesota Power is actively involved in CFS implementation efforts, along with other utilities, customers, and interested stakeholders. The recommended 2025 Plan meets the CFS requirements and how Minnesota Power will meet the CFS is discussed further in Appendix I.

National Ambient Air Quality Standards

The NAAQS are established to protect human health ("primary standards") or public welfare ("secondary standards") for criteria pollutants, including PM, SO_2, NO_x, and ground-level ozone. The NAAQS impact facilities in two primary ways. First, if air dispersion modeling from a state-approved protocol demonstrates that the NAAQS are being exceeded at a facility's property boundary, the Company may have to take measures to reduce emissions. Second, if a county that contains one of the Company's facilities goes into non-attainment (which means one or more sites demonstrate ambient air concentrations greater than the standard), then existing facilities may have to undertake additional control measures to reduce emissions of that pollutant. Interstate transport issues may also impose additional requirements.

The EPA is required to review each NAAQS every five years to assess whether imposing more restrictive standards is warranted to protect human health and the environment. If the EPA determines that a state's air quality is not in compliance with the NAAQS, the state is required to adopt plans describing how it will reduce emissions to attain the NAAQS.

Minnesota Power actively monitors NAAQS developments, and the EPA has recently reassessed several primary and secondary NAAQS for NOx, SO2, and PM. Implementation of the EPA's February 2024 final rule lowering the annual primary standard for fine particulate matter began on May 6, 2024. On December 27, 2024, the EPA published a final rule in the Federal Register revising the secondary SO2 NAAQS while retaining the NOX and PM secondary standards, with a final rule effective date of January 27, 2025.

Minnesota Power currently expects that existing emission controls will remain compliant with existing or known proposed NAAQS revisions, or that compliance can be achieved by operational or other adjustments. Therefore, the Company is not identifying any additional technology requirements for the NAAQS in the 2025 IRP.

Cross-State Air Pollution Rule

The EPA finalized the first CSAPR in 2011, requiring certain states in the eastern half of the U.S., including Minnesota, to reduce power plant emissions that can contribute to ozone or fine particle pollution in other states. The CSAPR replaced EPA's 2005 Clean Air Interstate Rule ("CAIR"). The CSAPR Phase 1 implementation began on January 1, 2015 and Phase 2 began in 2017. In 2016, the EPA revised the CSAPR rule in an expanded regulation known as the "CSAPR Update," followed by the Revised CSAPR Update in 2021.

The CSAPR does not directly require the installation of controls. Instead, it sets a strict emission allowance budget for each state and requires facilities to surrender enough emission

allowances to cover their emissions on an annual basis. Historically, Minnesota Power's allowances, generation levels, and emission rates have effectuated continued compliance with the CSAPR; however, the EPA's Good Neighbor Rule has modified certain aspects of the CSAPR's program scope and extent as it applies to the State of Minnesota.

Good Neighbor Plan for 2015 Ozone NAAQS

On June 5, 2023, after disapproving state implementation plans for the 2015 ozone NAAQS, the EPA published the Good Neighbor Plan as a final Federal Implementation Plan ("FIP") rule in the Federal Register to address regional ozone transport by reducing NOX emissions during the period of May 1 through September 30 (ozone season) for states that failed to meet the 2015 ozone NAAQS. In its justification for the final rule, the EPA asserted that 23 states, including Minnesota, were modeled as significant contributors to downwind states' challenges in attaining or maintaining ozone NAAQS compliance within their state borders. The Good Neighbor Plan is designed to resolve this interstate transport issue by implementing a variety of NOX reduction strategies, including NOX emission limitations and ozone season allowance program requirements. The final rule-imposed restrictions on fossil-fuel fired power plants in 22 states and on certain industrial sources in 20 states, with implementation occurring through changes to the existing CSAPR program for power plants.

Since the EPA partially disapproved the Good Neighbor State Implementation Plans ("SIPs") for the states of Minnesota and Wisconsin, among others, Minnesota became subject to the final Good Neighbor Plan. However, Minnesota Power and a coalition of other Minnesota utilities and industry (the "parties") co-filed challenges to the EPA's final Minnesota SIP disapproval, submitting a petition for reconsideration and stay to the EPA, and a petition for judicial review to the Eighth Circuit Court of Appeals. The parties are challenging and requesting reconsideration of certain technical components of the EPA's review and subsequent partial disapproval of the state of Minnesota's SIP. On July 5, 2023, the Eighth Circuit Court granted a stay of the SIP disapproval, preventing the Good Neighbor Plan from taking effect in Minnesota. Oral arguments in that case occurred on October 22, 2024. On April 4, 2024, the EPA published a partial denial of several administrative reconsideration and stay petitions, including from the Minnesota coalition. On September 29, 2023, the EPA issued an updated final interim rule addressing the stays in Minnesota and five other states, formally delaying the effective date of the final FIP for states with active stays in place. The state of Minnesota, therefore, did not become subject to compliance obligations for the 2023 or 2024 ozone seasons.

Future compliance obligations will depend on resolution of the stay and outcomes of related litigation. Additionally, challenges have been filed against the final FIP rule by the Minnesota coalition parties and other entities, although the Minnesota coalition FIP challenge is currently in abeyance pending resolution of the SIP disapproval case. On June 27, 2024, the U.S. Supreme Court granted an emergency stay of the FIP rule requested by several states and industry groups, staying enforcement pending the D.C. Circuit's review and any petition for writ of certiorari. In response to the U.S. Supreme Court's stay order, the EPA published a third interim rule in the Federal Register on November 6, 2024 staying the effectiveness of the Good Neighbor FIP in the 10 remaining covered states, including Wisconsin.

The 2025 IRP does not assume allowance costs or operational impacts from the Good Neighbor Plan because outcomes are not reasonably foreseeable at this time due to ongoing litigation and regulatory uncertainty. Additionally, implementation of final rates following Minnesota Power's most recent rate case will also allow for the transfer of any necessary allowance purchase costs to the fuel adjustment clause. Within 180 days of the EPA's issuance of its final order, and after appeals, Minnesota Power will file a compliance filing that demonstrates its understanding of EPA's final FIP and an action plan in response to the final FIP.

NESHAPS: Mercury and Air Toxics Standards ("MATS") Rule

Under Section 112 of the Clean Air Act ("CAA"), the EPA is required to set emission standards for hazardous air pollutants ("HAPs") for certain source categories. The EPA published the final MATS Rule in the Federal Register on February 16, 2012, addressing such emissions from coal-fired utility units greater than 25 MW. There are currently 187 listed HAPs for which the EPA is required to evaluate establishment of Maximum Achievable Control Technology ("MACT") standards. In the final MATS Rule, the EPA established categories of HAPs, including mercury, trace metals other than mercury (e.g., arsenic), acid gases (e.g., hydrochloric acid), dioxin/furans, and organics other than dioxin/furans. The EPA also established emission limits for the first three categories of HAPs, and work practice standards for the remaining categories. A particulate limit was established as a surrogate for trace metals other than mercury. Affected sources were required to be in compliance with the rule by April 2015, or no later than April 2016 with a duly approved compliance extension.

Since 2013, the EPA and courts have undertaken various regulatory and judicial actions affecting the MATS Rule, particularly the U.S. Supreme Court's June 2015 reversal and remand decision in Michigan v. Environmental Protection Agency, 576 U.S. 743 (2015). In the resulting 2016 supplemental cost finding and subsequent 2020 corrections to that finding, EPA concluded that it was not "appropriate and necessary" to regulate HAPs emissions from electric steam generating units under section 112 of the CAA. EPA did not propose to remove those units from the list of sources regulated, therefore the primary emission standards and other requirements of the MATS Rule remain in place. In February 2023, the EPA revoked the 2020 finding that it was not appropriate and necessary to regulate coal- and oil-fired power plants under CAA section 112.

On April 25, 2024, the EPA published a final rule to revise the 2012 MATS Rule, eliminating certain MATS compliance flexibilities, lowering the particulate emission standard for all coal-fired EGUs, and reducing the mercury emission standard for lignite-fired EGUs. The rule became effective July 8, 2024, with compliance required beginning July 6, 2027. The MATS regulation applies at Minnesota Power's BEC facility, which is currently well-controlled for these emissions. The Company anticipates the new rule will not have material impacts at BEC and that the 2025 Plan will result in continued MATS compliance at both BEC3 and BEC4.

Minnesota Power is additionally subject to ongoing emission reduction obligations under the MMERA (discussed below) and the July 16, 2014 Consent Decree entered into with the MPCA and the United States; therefore, the Company does not expect significant changes to our operations regardless of potential changes to the MATS Rule status.

BEC3 MATS

The BEC3 activated carbon injection system and fabric filter installed to meet MMERA expectations was designed to capture up to 90 percent of mercury that would otherwise be emitted. Because of significant emissions control this system affords for mercury, BEC3 did not need to do anything further to reduce mercury under the MATS regulation.

The MATS Rule requires Minnesota Power facilities to meet a hydrochloric acid ("HCl") limit as a surrogate for acid gas emissions. The WFGD system for SO2 control is also effective at removing acid gases, including HCl. BEC3 meets the requirements of the MATS Rule without additional investment. The MATS Rule includes a PM limit as a surrogate for trace metals other than mercury. The fabric filter installed on BEC3 as part of the retrofit is effective at removing PM, including associated trace metals. No additional control requirements were required in the 2025 Plan to meet MATS requirements.

BEC4 MATS

Under MERA, Minnesota Power installed mercury control technology on BEC4 to achieve 90 percent mercury removal. Under the 2025 Plan, this emission limit and technology also complies with the MATS mercury limit. The mercury control technology was compared to other remission and retirement alternatives and found to be the best alternative.

The MATS Rule requires Minnesota Power facilities to meet an HCl limit as a surrogate for acid gas emissions. The semi-dry FGD system for SO2 control is also effective at removing acid gases, including HCl. Under the 2025 Plan, BEC4 meets the requirements of the latest MATS regulation without additional investment.

NESHAPS: Industrial Boiler Maximum Achievable Control Technology ("Boiler MACT") Rule

On January 31, 2013, the final Boiler MACT Rule was published in the Federal Register. Similar to the MATS Rule, the EPA is required to evaluate HAPs emissions for establishment of MACT standards for boilers. The Boiler MACT Rule establishes emission standards for control of mercury, HCl, PM, and carbon monoxide, and imposes work practice standard requirements such as periodic tune-ups. Major sources had to achieve initial compliance with the final rule by 2016. Minnesota Power facilities impacted by this regulation include HREC.

After this initial rulemaking, litigation from 2016 through 2018 resulted in court orders directing the EPA to reconsider certain aspects of the regulation. On August 24, 2020, the EPA proposed further amending several of the Boiler MACT numerical emission limits and establishing new compliance dates for the revised limits. A final "2022 Rule" incorporating these revisions became effective in December 2022, with a compliance deadline of October 6, 2025. On September 3, 2024, the U.S. Court of Appeals for the D.C. Circuit partially vacated certain "new boiler" provisions of the 2022 Rule; however, the vacated portion of the final rule does not apply to Minnesota Power's existing units.

HREC Boiler MACT

Since the initial 2016 Boiler MACT Rule, compliance at HREC has consisted largely of adjustments to fuels and operating practices. Significant technology investments were not required at HREC for either the initial rule nor the subsequent 2020 and 2022 updated rulemakings. As noted above, the U.S. Court of Appeals' 2024 partial vacatur of the 2022 Rule applies only to new units, not existing units like Minnesota Power's HREC. Therefore the 2025 Plan does not presume additional capital investments for Boiler MACT.

Mercury: Minnesota Mercury Emissions Reduction Act

MMERA required Minnesota Power's two largest units, BEC3 and BEC4, to install mercury emission controls with the goal to achieve up to 90 percent mercury removal. The Company installed mercury controls on each unit and has associated air permit emission limits and operational requirements in its Title V air permit from the MPCA. Coupled with the conversion of LEC to natural gas and the retirement of THEC units, the Company has reduced airborne mercury emissions by about 92 percent from 2005 levels.

Clean Air Visibility Regional Haze Rule

The federal Regional Haze Rule requires states to submit State Implementation Plans ("SIPs") to the EPA on a 10-year planning period basis to address regional haze visibility impairment in 156 federally protected parks and wilderness areas. The Regional Haze SIP is required to identify existing facilities that are significant sources of NOx and SO2 and located close to subject Class I areas to potentially cause or contribute to visibility impairment in those Class I areas. Minnesota Class I areas are the Boundary Waters Canoe Area Wilderness and

Voyageurs National Park. SIPs must analyze, identify, and apply federally-enforceable control strategies for the subject sources.

The first planning period of the Regional Haze Rule was 2008 through 2018, with SIPs due in 2007. Installation of emissions controls, known as Best Available Retrofit Technology ("BART"), was required for certain large stationary sources (vintages 1962-1977) determined to have emissions contributing to visibility impairment. Minnesota Power's BEC3 and THEC Unit 3 ("THEC3") were subject to BART requirements. The retrofit completed in 2009 at BEC3 met BART requirements for that unit, and the June 2015, retirement of THEC3 met the BART requirements for that unit.

The most recent revisions to the Regional Haze Rule were finalized in January 2017, covering the second planning period 2018 through 2028. SIP submittals were due July 31, 2021; however, many states including Minnesota were late in meeting this deadline. Due to their potential emissions and geographical proximity to the Boundary Waters Canoe Area Wilderness and Voyageurs National Park, Minnesota Power's BEC3, BEC4, and THEC units were selected for initial inclusion into the Minnesota Regional Haze Round 2 SIP planning process. The Company worked with the MPCA to address rule requirements for those units in support of the SIP development, and no additional controls were identified as necessary. The MPCA submitted their SIP to the EPA on December 20, 2022, and the EPA proposed to approve the SIP on July 11, 2024.

The third, and next, Regional Haze planning period will address 2028 through 2038.[21] As with the first and second planning periods, Minnesota Power will work with the MPCA to address any incorporation of its units in the SIP development process as needed to comply with Regional Haze requirements.

Water and Solid Waste

Coal Combustion Residuals Regulation

On April 17, 2015, the EPA finalized regulations for coal combustion residuals ("CCR") generated by the electric utility sector.[22] The rule regulates the disposal of CCR under Subtitle D of the Resource Conservation and Recovery Act ("RCRA") as a non-hazardous waste. The rule established new minimum criteria for existing and new CCR landfills and impoundments, including design and operating criteria, groundwater monitoring and corrective action, closure requirements and post-closure care conditions. Since 2015, the CCR rule has undergone multiple revisions as a result of legal challenges and subsequent regulatory revisions. Most notably, in August 2018, the U.S. Court of Appeals for the D.C. Circuit vacated specific provisions of the CCR rule that allowed continued operation of clay-lined impoundments.[23] Clay-lined impoundments became subject to closure under rule revisions finalized on September 28, 2020. This action changed the status of three existing clay-lined impoundments at BEC, requiring those impoundments to cease receipt of CCR and begin closure.

On May 8, 2024, the EPA's final CCR Legacy Impoundment Rule was published in the Federal Register. The rule expanded the scope of regulated CCR units to include legacy

[21] On December 23, 2024, EPA extended the deadline for Third Regional Haze SIP submissions from July 31, 2028 to July 31, 2031. 89 Fed. Reg. 105571 (Dec. 23, 2024); *see also* Extension of the State Implementation Plan Due Date for the Regional Haze Third Implementation Period Proposed Action Fact Sheet, EPA, available at https://www.epa.gov/system/files/documents/2024-12/fact_sheet_clean_3pp_dl_ext.pdf.

[22] 40 CFR Parts 257 and 261.

[23] *Utility Solid Waste Activities Group v. EPA*, 901 F.3d 414 (D.C. Cir. 2018) (the "USWAG decision").

impoundments (inactive surface impoundments at inactive facilities) and created a new category of units called CCR Management Units ("CCRMUs"), which include inactive and closed impoundments and landfills as well as other non-containerized accumulations of CCR. The final rule requires all regulated generating facilities to evaluate and identify past deposits of CCR materials on their sites and close or re-close existing CCR units to meet current closure standards, as well as install groundwater monitoring systems, conduct groundwater monitoring, and implement groundwater corrective actions as necessary.

Capital investments made by Minnesota Power to comply with the CCR rule include conversion to dry bottom ash systems on BEC3 and BEC4, installation of a flue gas desulphurization ("FGD") gypsum dewatering system, and installation of a thermal evaporation system on BEC4. These projects eliminated wet ash sluicing and storage operations to facilitate final closure of the existing CCR impoundments at BEC. The thermal evaporator, dry ash conversion, and gypsum dewatering projects were completed in 2022.

Dewatering and closure of BEC's impoundments will occur over the next 10 years, in accordance with CCR Rule closure timelines. Additional water treatment may be necessary to dewater the CCR impoundments at BEC to allow discharge to surface water or for re-use in plant processes. Compliance costs for wastewater treatment and re-use could be material.

Based on preliminary assessments, additional compliance costs at BEC and LEC related to the assessment and closure, or re-closure, of CCR units under the CCR Legacy Impoundment Rule are estimated to be between approximately $50 million and $85 million and are expected to be incurred over the next 10 years; however, Minnesota Power continues to evaluate the CCR Legacy Rule impacts and cost estimates may be revised. A petition for deferred cost accounting of these estimated CCR Legacy Rule compliance costs was filed with the Commission on December 30, 2024 in Docket No. E-015/M-24-437.[24]

BEC3 CCR

BEC Unit 3 Pond was subject to the 2020 CCR Rule revisions which determined that clay-lined impoundments are subject to closure. Installation of a gypsum dewatering system eliminated FGD wastewater discharges to the Unit 3 Pond, which initiated closure on September 17, 2022. Dewatered FGD materials are placed in the on-site dry ash disposal area and/or are beneficially re-used. Additional water treatment may be necessary to complete dewatering via discharge to surface water or for re-use in plant processes. The Unit 3 Pond must complete closure by September 30, 2027.

BEC4 CCR

BEC Unit 4 Pond was also required to cease disposal of CCR and non-CCR wastes under the 2020 CCR Rule revisions. At the time of the rulemaking, disposal was no longer necessary in this pond due to a previous retrofit of BEC4 pollution control equipment. The retrofit transitioned the unit to dry fly ash and scrubber solids handling. The combined scrubber solids and fly ash is placed in the on-site dry ash disposal area. Dewatering for final closure is currently being accomplished via the thermal evaporation system. Additional water treatment to dewater the pond via discharge to surface water or for re-use in plant process is likely necessary to meet closure timelines under the CCR Rule. The Unit 4 Pond initiated closure on September 30, 2020, and is required to complete closure by September 30, 2035 under allowed closure timeline extensions.

[24] *In the Matter of Minnesota Power's Petition for Approval to Track and Defer Costs Resulting from the Legacy Coal Combustion Rule (CCR) Surface Impoundments Rule*, Docket No. E-015/M-24-437, Minnesota Power Petition (Dec. 30, 2024).

The 2020 CCR Rule revisions also required closure of BEC's Bottom Ash Pond, which previously accepted bottom ash and bottom ash transport water from both BEC3 and BEC4. Conversion to dry bottom ash handling eliminated wet sluicing and storage of bottom ash and transport water at BEC. The dry bottom ash solids from BEC3 are placed in the onsite dry ash disposal area. The Bottom Ash Pond ceased receipt of CCR on September 17, 2022 and is currently being dewatered via re-use in plant processes. For the purposes of closure, the Bottom Ash Pond has been combined with the Unit 4 Pond as a single impoundment under the rule, now referred to as the East Impoundment, which must complete closure by September 30, 2035.

LEC CCR

LEC is no longer producing CCR. Cessation of coal ash disposal at LEC eliminated the need for future impoundment or landfill construction. Existing impoundments were closed in accordance with the original CCR rule provisions, however, as noted above, compliance costs related to the new CCR Legacy Rule could be material and include additional water removal and stabilization of previously closed CCR units and/or CCRMUs These cost estimates for LEC were included in the Company's December 20, 2024 deferred cost accounting filing to the Commission.[25] The CCR Legacy Rule facility evaluations and analyses are ongoing, and the estimated timeline for narrowing the scope and cost of compliance is late 2025 or early 2026, at the soonest. The EPA's recent announcement of potential further changes to the CCR regulations may also affect estimated costs, timing, and scope of analyses and projects.

Water Effluent Regulation

In 2015, the EPA issued revised federal effluent limitation guidelines ("ELG") for steam electric power generating stations under the Clean Water Act. These guidelines set effluent limits and prescribed BACT for several wastewater streams, including FGD water, bottom ash transport water, and coal combustion landfill leachate. On October 13, 2020, the EPA published a final ELG Rule in the Federal Register allowing re-use of bottom ash transport water in FGD scrubber systems with limited discharges related to maintaining system water balance. The rule set technology standards and numerical pollutant limits for discharges of bottom ash transport water and FGD wastewater. Compliance deadlines depend on subcategory, with compliance generally required as soon as possible beginning October 13, 2021, but no later than December 31, 2025, or December 31, 2028 in some specific cases.

On May 9, 2024, the EPA finalized a new set of revisions to the 2020 ELG rule. The final rule establishes zero discharge limitations for bottom ash transport water, FGD wastewater, and combustion residual leachate. A definition for legacy wastewater was established, with deferral to state permit programs for setting discharge limits based on best professional judgment. The rule maintains exemptions for units permanently ceasing coal combustion by 2028 and adds a new subcategory for units that are retiring by 2032 that have already complied with either the 2015 or 2020 ELG rules. Additionally, the rule establishes mercury and arsenic limitations for functionally equivalent discharges of leachate via groundwater to surface water. Compliance deadlines are determined by the applicable state permitting authority through permit incorporation as soon as July 8, 2024, but no later than December 31, 2029.

Bottom ash transport and FGD wastewater ELGs are not expected to have a significant impact on Minnesota Power operations as these waste streams are not discharged from our facilities. New limitations for arsenic and mercury related to functionally equivalent (groundwater

[25] *In the Matter of Minnesota Power's Petition for Approval to Track and Defer Costs Resulting from the Legacy Coal Combustion Rule (CCR) Surface Impoundments Rule*, Docket No. E-015/M-24-437, Minnesota Power Petition (Dec. 30, 2024).

to surface water) discharges are also not anticipated to impact Minnesota Power facilities. Compliance costs the Company might incur related to other ELG waste streams (e.g., leachate) or other potential future water discharge regulations at Minnesota Power facilities cannot be estimated at this time.

Additional water quality requirements may be imposed by the MPCA during National Pollutant Discharge Elimination System ("NPDES") permit renewals, triennial reviews, or by special rulemaking. For example, the State of Minnesota has an existing 10 mg/L sulfate limit based on wild rice protection, which has historically not been implemented into most Minnesota NPDES permits. Due to increased permitting scrutiny, the sulfate limit is being applied to NPDES permittees that discharge to wild rice waters during permit reissuance. A limit is included in BEC's draft NPDES permit based on the 10 mg/L standard and will not require additional wastewater treatment to achieve.

BEC3 ELG

ELG rule standards at BEC apply to discharge requirements for FGD wastewater stored in the Unit 3 Pond. Minnesota Power installed a gypsum dewatering system in 2022 that eliminated this waste stream. FGD wastewater historically stored in the Unit 3 Pond is being dewatering through water re-use in plant processes rather than discharging to surface waters, therefore zero discharge requirements have been met. Additional wastewater treatment may be required to utilize this wastewater in more plant process to ensure dewatering timelines are met in accordance with CCR Rule final closure requirements.

BEC4 ELG

ELG rule standards at BEC apply to discharge requirements for Bottom Ash Transport and Legacy Wastewater stored in the Bottom Ash Pond and Unit 4 Pond, now collectively referred to as the East Impoundment. Bottom Ash Transport water was eliminated in 2022 with conversion of both BEC3 and BEC4 to dry bottom ash handling systems. Surface water discharges were ceased in 2022, and dewatering of the Bottom Ash Pond has primarily been via re-use in plant processes. The Unit 4 Pond contains significant volumes of Legacy Wastewater, which may be treated and discharged under the facility NPDES Industrial Wastewater Discharge Permit, if approved by the State permitting authority. The Unit 4 Pond is currently being dewatering via a thermal evaporation system installed in 2022. Additional wastewater treatment may be required for treatment and discharge or re-use in plant process to reduce the dewatering timeline and close in accordance with CCR Rule deadlines.

LEC ELG

The LEC conversion to natural gas eliminated wet and dry handling of ash and associated wastewaters. Legacy wastewater is periodically treated and discharged from the closed on-site impoundment and is subject to ELG requirements. Additional wastewater treatment could be required for discharges of this waste stream; requirements will be determined by the State permitting authority at the time of NPDES permit reissuance.

Environmental Justice, Wildlife, and Environmental Review

Environmental Justice: Minnesota Cumulative Impacts Rulemaking

In 2023, the State of Minnesota passed a cumulative impacts law called the "Frontline Communities Protection Act," intended to help regulate the cumulative impacts of pollution in areas designated as environmental justice communities based on demographic attributes such as income and poverty levels. This law applies only in certain areas of the Twin Cities metropolitan area as well as the cities of Rochester and Duluth.

Rulemaking development is underway, led by the MCPA, and scheduled to be completed and effective in the 2026-2027 timeframe. Currently, Minnesota Power, other affected utilities and industries, and various interested stakeholder groups are actively engaged in the MPCA's ongoing community consultation process. Applicability is determined by air permit type.

Currently, Minnesota Power's only facility located in the City of Duluth subject to this rule would be HREC. Since impacts or outcomes cannot be determined at this early pre-rule stage, the 2025 IRP does not account for additional requirements or obligations associated with this pending rulemaking.

Wildlife Regulations

The Company monitors numerous environmental regulatory developments in the wildlife and Endangered Species Act ("ESA") area on an ongoing basis. Both ongoing operations and projects in the thermal generation, transmission and distribution, and renewable generation areas have the potential to impact, and to be impacted by, wildlife.

Some examples of regulatory developments tracked by the Company include: the Migratory Bird Treaty Act, the Bald and Golden Eagle Protection Act, and various revisions to ESA implementing regulations such as the Section 4 and Section 7 rules. Listing status under the ESA is also closely monitored for the various species of particular local or regional concern.

Species may be identified for initial review or for listing as threatened or may be "uplisted" with their status changed from threatened to endangered, as occurred with the Northern Long-Eared Bat in 2023. Other species under active review by regulatory agencies include the greater sage-grouse, the little brown bat, and the tricolored bat.

While these wildlife-related and ESA regulations have potential to impact existing and planned projects and operations, the 2025 IRP does not identify any specific wildlife/ESA-related topics or issues likely to materially affect the 2025 Plan.

Environmental Review

At both the state and federal levels, extensive environmental review practices and protocols exist to help mitigate the environmental impacts of existing or new projects and operations. Commonly used tools include environmental impact statements and environmental assessment worksheets, among others. Environmental review often presents challenges to new projects and operations alike due to complexity and potentially lengthy timeframes. To minimize operational and project impacts while ensuring required environmental review components are fulfilled when applicable, Minnesota Power works closely with regulators including the MPCA, the Minnesota Department of Commerce, and other responsible government units.

The Minnesota Environmental Quality Board ("EQB") is the coordinating body for Minnesota's environmental review program, including implementing reforms as warranted. While environmental review process requirements are evolving and will continue to be monitored by the Company, the 2025 IRP does not identify any specific, known areas of existing environmental review practices or potential EQB environmental review reform that is likely to materially affect the 2025 Plan.