minnesota power
AN ALLETE COMPANY

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August 20, 2025

VIA E-FILING
Mike Bull
Executive Secretary
Minnesota Public Utilities Commission
121 7th Place East, Suite 350
St. Paul, MN 55101-2147

Re: 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-015/CI-24-352

Dear Mr. Bull:

Attached please find Minnesota Power's Reply Comments pertaining to the matter of the Commission's Fuel Life-Cycle Analysis investigation.

Please also find the completed spreadsheet issued by the Department of Commerce and Minnesota Pollution Control Agency in their Joint Initial Comments filed June 5, 2025.

Please contact me at (218) 355-3178 or jmccullough@mnpower.com with any questions related to this matter.

Yours truly,

Jess McCullough
Public Policy Advisor

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STATE OF MINNESOTA
BEFORE THE
MINNESOTA PUBLIC UTILITIES COMMISSION

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. E002/CI-24-352 **REPLY COMMENTS**

I. INTRODUCTION

On November 7, 2024 the Minnesota Public Utilities Commission (or, "Commission") initiated an investigation into a Fuel Life-Cycle Analysis (or, "LCA") Framework stemming from the "substantial and substantive disputes" in the record during Phase 2 of Docket No. E-999/CI-23-151, an Investigation into Implementing Changes to the Renewable Energy Standard and the Newly Created Carbon-Free Standard under Minn. Stat. § 216B.1691. On June 5, 2025, Minnesota Power (or, "Company") filed its initial comments in this matter. Below, the Company clarifies several items in the context of the initial comments of other intervenors.

The Company has offered comments on multiple generation technologies and related issues in this docket but wishes to particularly emphasize the importance of biomass in meeting the state's 2040 carbon goals while keeping electricity reliable and affordable for our customers. In its 2025 Integrated Resource Plan[1] (or, "2025 IRP") the Company proposes the continued operation of the Hibbard Renewable Energy Center (or, "HREC") in Duluth, Minnesota. HREC is a 50 megawatt ("MW") dispatchable and renewable energy and capacity source that uses primarily waste wood and forest residue biomass to produce energy. It has the capability to provide renewable energy when intermittent renewable energy sources like wind and solar are unavailable. Therefore, HREC is a valuable generation asset for customers that provides renewable energy when it is needed by the system. HREC's dispatchable operational characteristics result in delivering higher levels of accredited system capacity, contributing to meeting Minnesota Power's reliability criteria for the power supply, and are used to relieve local transmission

[1] Docket No. E015/RP-25-127

reliability issues in the Duluth area – all important attributes when there is declining dispatchable capacity on the broader system at a time when customer electricity demand is expected to increase. The 2025 IRP also details how the Company – in ongoing consultation with Tribal Nations and interested stakeholders – will evaluate the potential for biomass as a future solid fuel capacity replacement at Boswell Energy Center, where the company has committed to phase out coal for its customers by 2035.

The outcome of this docket is critical to Minnesota Power and its resource planning process. The Company therefore underscores the importance of a Commission decision on this matter by its stated date of December 31, 2025.

II. COMMENTS

- **Definitions of the sources of and requirements for a fuel to qualify as sustainable and waste biomass.**

The Minnesota Pollution Control Agency (or, "MPCA") and Department of Commerce (or, "Department") filing jointly (or, "The Agencies") note in their initial comments that waste biomass derived from secondary activities including that from storm damage, disease or infestation, utility line maintenance, and forest products manufacturing residuals should be considered eligible for CFS compliance by comparison to a counterfactual disposal method on a project-by-project basis. The Agencies recommend the establishment of a working group to determine the standards necessary to verify that such biomass qualifies under the definition to be established by the Commission.

The Company agrees with the Agencies' assessment that secondary biomass should be eligible for CFS compliance following robust analysis. The Company notes, however, that the categories of woody biomass defined by the Agencies as "waste" biomass are already defined as sustainable in statute and re-defining such standards in a workgroup is not necessary. The Company maintains its position that the statutory definitions of sustainable woody biomass reproduced below are sufficient to define sustainable

biomass in this context, and that any such workgroup should focus on biomass sources with less clear statutory definitions.

MN Statute 216B.2424 Subd. 1 (d) defines “sustainable managed woody biomass” as:

> (1) brush, trees, and other biomass harvested from within designated utility, railroad, and road rights-of-way;
>
> (2) upland and lowland brush harvested from lands incorporated into brushland habitat management activities of the Minnesota Department of Natural Resources;
>
> (3) upland and lowland brush harvested from lands managed in accordance with Minnesota Department of Natural Resources "Best Management Practices for Managing Brushlands";
>
> (4) logging slash or waste wood that is created by harvest, by precommercial timber stand improvement to meet silvicultural objectives, or by fire, disease, or insect control treatments, and that is managed in compliance with the Minnesota Forest Resources Council's "Sustaining Minnesota Forest Resources: Voluntary Site-Level Forest Management Guidelines for Landowners, Loggers and Resource Managers" as modified by the requirement of this subdivision; and
>
> (5) trees or parts of trees that do not meet the utilization standards for pulpwood, posts, bolts, or sawtimber as described in the Minnesota Department of Natural Resources Division of Forestry Timber Sales Manual, 1998, as amended as of May 1, 2005, and the Minnesota Department of Natural Resources Timber Scaling Manual, 1981, as amended as of May 1, 2005, except as provided in paragraph (a), clause (1), and this paragraph, clauses (1) to (3).

MN Statute 41A.18 Subd. 3:

> All forestry-derived cellulosic biomass used for biomass thermal production must be produced using Minnesota forest biomass harvesting guidelines or the equivalent. All cellulosic biomass from brushlands must be produced using Minnesota brushland biomass harvesting guidelines or the equivalent. Forestry-derived cellulosic biomass that comes from land parcels greater than 160 acres must be certified by the Forest Stewardship Council, the Sustainable Forestry Initiative, or the American Tree Farm System. Uncertified land from parcels of 160 acres or less, tribal lands, and federal land must have a forest management plan, as defined in section 290C.02, subdivision 7, or the equivalent and be harvested by a logger who has completed training for biomass harvesting from the Minnesota logger education program or the equivalent.

- **The definition and calculation of net market purchases.**

The Company notes that this item was addressed by the Commission in Docket No. E-999/CI-23-151 by the adoption of Decision Option Partridge NEW 7A on July 17, 2025, and is awaiting the Commission's written order.

- **Calculating partial compliance based on the net annual generation defined as "carbon-free."**

The Company maintains its previous position that generation resources should count toward CFS compliance to the percentage that they are determined to be carbon-free using a lifecycle analysis.

- **Calculating partial compliance for fossil fuel generation with carbon capture and sequestration/storage (or, "CCS") by estimating the total direct carbon dioxide emissions per megawatt-hour (MWh) reduced by the CCS, and applying that percentage to the output of the generation resource employing CCS to determine its carbon-free generation.**

The Company is in alignment with its understanding of the positions of Xcel and the Agencies in calculating partial compliance for fossil fuel facilities utilizing CCS technology by comparing the reduced emissions of a facility to unabated carbon emissions for the facility. The Company recommends that the net emissions reduced by the CCS technology be used to determine the level of partial compliance of the facility for CFS purposes.

- **Development of an accounting methodology to consider energy withdrawn from short-, medium-, and long-duration storage assets.**

The Company interprets energy storage as technologies that do not produce energy, and therefore no accounting methodology is necessary for CFS compliance purposes.

The Company concurs with Xcel energy's definition of storage as a "pass-through" technology for which no separate accounting method is necessary.

- **Calculating partial compliance for hydrogen co-firing generation by estimating the direct and indirect emissions of the generation resource per MWh with hydrogen cofiring, compared to the carbon dioxide per MWh that would be emitted if the generator burned only natural gas.**

In Initial Comments the Company suggested calculating partial compliance by the following equation:

Direct Emissions + Indirect Emissions – Emissions Displaced by CF Fuel Mixing = Net Compliance Percentage

While the question specifically pertains to cofiring hydrogen with natural gas, the Company argued in its Initial Comments that such a calculation was appropriate for fuel mixing with any fully or partially carbon free fuel with a non-carbon free source. A similar interpretation was put forth by Xcel Energy as well as the Agencies, who recommend:

> G.1. The Agencies recommend the Commission order the following requirements for the base case emissions of a generation facility the [sic] burns any amount of partially carbon-free resources mixed with any other fuel:
>
> A. The base case emissions shall be derived from the primary fuel source that is displaced by the partially carbon-free electricity; and
>
> B. If the primary fuel source is partially carbon-free, the base case shall be the base case used to determine the carbon-free percentage of the primary resource.

The Company interprets its initial recommendation in this matter to be consistent with that put forth by the Agencies.

- **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.**

The Company maintains its position that biomass, renewable natural gas, and solid waste generation projects should be considered fully or partially carbon free based on a project specific LCA.

III. CONCLUSION

Minnesota Power appreciates the continued constructive development of this record and sees emerging areas of common ground to build upon with stakeholders. The recommendations proposed in these comments represent what the Company views as the most efficient and executable options available with current technology and in compliance with statute and state energy goals. The Company wishes to restate its commitment to meeting those goals while providing reliable, affordable, and resilient services to its customers – a commitment in which biomass plays an important role. The Company thanks the Commission in advance for its timely decision in this matter.

If you have any questions regarding this filing, please contact me at 218.428.9846 or jmccullough@mnpower.com.

Dated: August 20, 2025

Respectfully,

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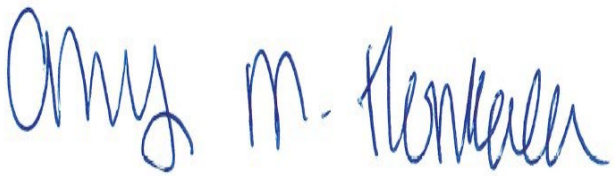
Technology / Feedstock	Definition	Eligible for CFS Compliance? (Y/N/Other)	Method of GHG Quantification (Specify Model or Generic Method)	LCA Study Period (Yrs)	Baseline	Partial EACs Awarded?	0 EAC Cutoff
Solar		Yes					
Wind		Yes					
Hydropower		Yes					
Waste Biomass		Partial/Full TBD in Docket No. 24-352	ISO	20-30 years			
Refuse-Derived fuel		Partial/Full TBD in Docket No. 24-352					
Primary Biomass		Partial/Full TBD in Docket No. 24-352	ISO	20-30 years			
Geothermal		Yes					
Nuclear		Yes					
Hydrogen		Partial/Full TBD in Docket No. 24-352					
Coal		No					
Natural Gas		No					
Oil		No					
Coal, Natural Gas, or Oil with Carbon Capture and Storage		Partial TBD in Docket No. 24-352			Facility emissions without CCS		
Energy Storage		Not Eligible TBD in Docket No. 24-352					
Co-firing		Partial TBD in Docket No. 24-352			Facility emissions without co-firing		

STATE OF MINNESOTA	)	AFFIDAVIT OF SERVICE VIA ELECTRONIC FILING
	)ss	
COUNTY OF ST. LOUIS	)	

I, Amy M. Honkala of the City of Duluth, County of St. Louis, State of Minnesota, hereby certify that on the 20th day of August, 2025, I electronically filed a true and correct copy of Minnesota Power's **Reply Comments in Docket No. E015/CI-24-352** on the Minnesota Public Utilities Commission and the Energy Resources Division of the Minnesota Department of Commerce via electronic filing. The persons on eDocket's Official Service List for this Docket were served as requested.



Amy M. Honkala