MINNESOTA POLLUTION CONTROL AGENCY

520 Lafayette Road North | St. Paul, Minnesota 55155-4194 | 651-296-6300

800-657-3864 | Use your preferred relay service | info.pca@state.mn.us | Equal Opportunity Employer

September 17, 2025

Sasha Bergman, Executive Secretary
Minnesota Public Utilities Commission
121 7th Place E, it 350
St. Paul, MN 55101-2147

RE: **Comments of the Minnesota Pollution Control Agency**
Docket No. E999/CI-24-352

Dear Ms. Bergman:

Attached are the supplemental comments of the Minnesota Pollution Control Agency (MPCA) in the following matter:

> In the Matter of a Commission Investigation into a Fuel Life-Cycle Analysis Framework for Utility Compliance with Minnesota's Carbon-Free Standard

The investigation was initiated by the Minnesota Public Utilities Commission (Commission) on November 7, 2024.

Specifically, these comments address the Commission's request for input on several topics related to fuel life-cycle analysis and carbon-free standard compliance posed in its request for comments from January 22, 2025 and builds upon initial comments submitted by the MPCA (jointly with the Department of Commerce) on June 5, 2025. The MPCA stands by its opinions and recommendations in the initial comments and points out one divergence of opinion from the Department of Commerce (Department) in reply comments submitted by the Department on August 20, 2025.

The MPCA is available to answer any questions the Minnesota Public Utilities Commission may have.

Sincerely,

Frank Kohlasch

This document has been electronically signed.

Frank Kohlasch
Assistant Commissioner
Air and Climate Policy

Kirk Koudelka

This document has been electronically signed.

Kirk Koudelka
Assistant Commissioner
Land Policy and Strategic Initiatives

Supplemental Comments of the Minnesota Pollution Control Agency
Docket No. E999/CI-24-352

Introduction

The current proceeding is aimed towards determining what resources should qualify for carbon-free standard (CFS) compliance or partial compliance under the passage of H.F. 7 and as required by Minn. Stat. § 216B.1691 subd. 2d(b).

The MPCA tracks in-state GHG emissions based on methodologies used by the U.S. Environmental Protection Agency (EPA) and the Intergovernmental Panel on Climate Change (IPCC) to quantify progress toward Minnesota's emissions goals. When considering GHG emissions across all sectors, it is of vital importance to ensure that emission reductions from one sector don't directly or indirectly cause increased emissions in another. This type of emissions leakage is particularly relevant in the consideration of emissions from the waste sector, where decisions on electricity generating sources could lead to additional methane from landfilling operations. Similar concerns are relevant when considering the uncontrolled disposal of woody biomass waste and GHG emissions from manure storage if these existing electricity fuels are disallowed. Since the 2023 update to Minnesota's GHG emission reduction goals in §216H requires significant reductions across all sectors, and achieving net zero by 2050, the leakage of emissions from one sector to another sector should be evaluated to ensure the net zero statewide goal can be achieved.

Under a narrow interpretation of the carbon free standard within § 216B.1691, allowing only sources which are carbon-free at the point of electricity generation could lead to unintended GHG emissions in other sectors and fail to meet the statutory intent of the law. As such, the MPCA recommends a full consideration of the net and cumulative lifecycle emissions of potential fuels used at generating sources to avoid potential emission leakage and ultimately reduce net GHG emissions at a statewide level. For example, grey hydrogen (produced through the conversion of natural gas to hydrogen and carbon monoxide) could be utilized as a carbon-free electricity generation source under the narrowest interpretation of the statute. The use of a lifecycle emissions accounting approach would disallow grey hydrogen as an electricity generating source due to the substantial carbon emissions from the hydrogen production process. A lifecycle emissions approach could also be used to determine if utilizing methane emitted from existing landfills, sewage sludge, and manure lagoons and/or carbon from waste biomass would result in lower statewide net emissions due to the avoidance of methane emissions and the displacement of fossil fuels in the electricity generation mix. The full conditions of each potential generation source, including baseline emissions and an appropriate counterfactual, would need to be considered to make such determinations.

Given these considerations, in a joint comment with the Department of Commerce submitted on June 5, 2025[i], the MPCA stated its opinion that a rigorous analysis is required to properly assess the impacts of upstream and/or downstream processes on the net and cumulative emissions resulting from certain fuels used in energy generation technologies. It is the position of the agency that limiting the CFS compliance criteria to solely the emissions generated at the point of energy production poses certain risks to achieving the goals of the CFS statute and the state's broader GHG emission reduction goals and avoiding other air pollution emissions within the state. The agency recommends employing fuel lifecycle analysis (LCA) to compare cumulative emissions between electricity production from relevant fuel sources and a counterfactual base-case or business-as-usual scenario to comprehensively assess its CFS compliance or partial compliance.

A summary of the MPCA's recommendations for determining the CFS compliance of different technologies and energy feedstocks is provided in Attachment A of the June 5, 2025 comment. This comment serves to reaffirm several points of the MPCA's previously stated opinions and clarify a divergence of opinion in reply comments submitted by the Department of Commerce on August 20, 2025.

Overview of Recommendations

The MPCA supports the use of technologies and fuel feedstocks that demonstrate quantifiable reductions to net and cumulative greenhouse gas emissions when considering the full life cycle of materials and waste products. The determination of CFS compliance and partial compliance should be assigned using relevant and reputable life cycle analysis models such as Argonne National Laboratory GREET (Greenhouse gases, Regulated Emissions, and Energy use in Technologies), EPA WARM (Waste Reduction Model), EPA LandGEM (Landfill Gas Emissions Model), among others.

The burden of demonstrating the compliance or partial compliance of an energy project with the use of LCA tools should be placed upon the project proposer. Verification of compliance and the underlying analysis should be conducted by the Commission, with the MPCA available to assist in this verification.

Waste and Biomass Energy

Primary biomass that is intentionally cultivated, harvested, and prepared for use as a fuel for electricity generation should not be considered eligible for CFS compliance or partial compliance. Neither should farm-grown closed loop biomass as defined in Minn. Stat. § 216B.2424 subd. 1a(1).

Biomass derived from secondary activities may be eligible upon an LCA-derived demonstration of the reduced emissions relative to an appropriate counterfactual (such as the primary fuel displaced) or business-as-usual scenario (i.e. an appropriate mix of open burning, direct land application, composting, landfilling, anaerobic digestion etc.). Similarly, waste-to-energy technology derived from solid waste, as defined by Minn. Stat. § 116.06 subd. 22, may be considered compliant upon LCA-comparison of the landfilling baseline emissions and assuming the displaced electricity is a natural gas combined cycle power plant.

For partial compliance of waste and biomass energy before the full implementation of the CFS (2040), the portion of energy generation that is considered carbon-free will be in comparison to the fuel displaced, and the alternative waste disposal methods. After full implementation of the CFS, a waste biomass or waste-to-energy project must demonstrate lower emissions relative to the relevant alternative waste disposal method, but not a displaced primary fuel.

Departure in opinion from Department of Commerce regarding partial compliance

On June 6, 2025, MPCA and DOC jointly submitted comments to Docket E-999/CI-24-352 in which they stated that electricity generating resources with partial emissions as determined by LCA should qualify for partial compliance (as allowed in § 216B.1619 2d(b)(i)). DOC then submitted a reply comment[ii] on August 20, 2025 in which they revised their recommendations regarding partial compliance due to a change in their interpretation of "carbon-free." MPCA still hold its position that carbon-free compliance should be determined based on avoided emissions, substantiating the CFS through RECs. MPCA also continues to recommend that partial compliance be determined using a variety of baselines described in Appendix A of the DOC & MPCA comment.

While MPCA respects DOC's legal interpretation of the CFS statute, MPCA maintains the position that the Commission may have latitude in its interpretation of carbon-free and how it relates to partial

compliance. MPCA stands by its opinions and recommendations that to fully capture the possible GHG and community benefits that the CFS statute aims to achieve, the Commission should consider partial compliance eligibility beyond 2040.

The partial credit considerations are also supported in Minn. Stat. § 216B.1691 subd. 9 and in the Commission's statutory authority to enact these renewable energy objectives, the Commission while considering actions that maximize net local benefits to all Minnesota citizens. In particular, the adoption of the CFS and renewable energy technologies and their impacts on reducing harmful air pollution, wildfire risk, energy affordability, and the creation or maintenance of high-quality jobs in Minnesota.

An example is wood waste from responding to natural disaster cleanups (e.g. trees damaged by tornadoes or high-wind events) and invasive species management or disease (e.g. emerald ash borer, Dutch elm disease). Often the alternative to the use of wood waste for electricity generation is open burning, which can release significant amounts of uncontrolled air pollution (esp. particulate matter and volatile organic compounds) on neighboring residents. When wood waste is instead utilized as a fuel source for energy production, the wood burning is managed by pollution control equipment and permit conditions to significantly reduce the impacts of particulate matter and other air pollutants. Under Minn. Stat. § 216B.1691 subd. 9 (a) (5) one of the benefits to be maximized is reduced air emissions, which is aided by the avoidance of open burning.

Additional Considerations

MPCA reiterates its stance that LCA is a critical tool to assess compliance or partial compliance under the CFS of certain hydrogen production technologies. Namely, hydrogen that is generated using a primary emitting fuel source, non-incremental sourced energy, and unspecified grid electricity. In addition, hydrogen-only generation with partially emitting hydrogen or co-fired hydrogen with mixed fuels and/or partially carbon-free resources, should be analyzed in the same framework to quantify the full fuel life-cycle emissions footprint.

A comment submitted on August 20, 2025 by CURE[iii] asserts that the application of waste-to-energy technology is expected to come at the expense of broader waste reduction efforts, prolonging a system of high waste generation. MPCA disagrees and points toward the tendency for local governments that have invested in waste-to-energy to be among the jurisdictions to most aggressively pursue policies and funding for food waste prevention and rescue, along with composting and anaerobic digestion of organic waste and recovery of recyclable materials. Examples include Pope/Douglas Solid Waste Management's regional compost facility[iii], Hennepin County[iv] and Ramsey/Washington Recycling and Energy's[v] food waste reduction efforts. We would urge the Commission to consider these technologies for their demonstrable benefits in reducing GHG emissions in tandem with sound waste reduction practices.

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[i] DOC and MPCA, Comments, June 5, 2025. (eDockets) 20256-219638-01
[ii] Minnesota Department of Commerce, Reply Comments, August 20, 2025, (eDockets) 20258-222269-02
[iii] CURE, Reply Comments, August 20, 2025, (eDockets) 20258-222281-01, at 14.
[iiii] https://popedouglasrecycle.com/glacial-ridge-compost-facility/
[iv] https://www.hennepin.us/en/climate-action/what-hennepin-is-doing/food-rescue
[v] Programs - Food Waste Reduction - Ramsey/Washington Recycling & Energy Ramsey/Washington Recycling & Energy; Food Recovery Grant - BizRecycling Minnesota BizRecycling Minnesota