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Submitted via eDockets

Mike Bull
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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-999/CI-24-352

Acting Executive Secretary Bull:

CURE submits these reply comments to the Minnesota Public Utilities Commission (Commission) regarding the initial comments filed in the above-referenced docket. The Commission is tasked with applying the plain language of the 100 percent carbon-free electricity by 2040 standard (CFS) and many comments in this docket distract from that statutory standard.

I. Minnkota Power Cooperative, Inc., and Central Municipal Power Agency/Services

Minnkota Power Cooperative, Inc. (Minnkota)[1] and Central Minnesota Municipal Power Agency, d/b/a Central Municipal Power Agency/Services (CMPAS)[2] submitted comments that addressed both the overall legality of this docket, as well as their favored forms of energy generation. CURE agrees with some of these commenters' analyses, and disagrees with others.

a. Lifecycle Analysis (LCA)

Minnkota states the matter of LCA under the CFS clearly and correctly:

[1] eDocket Document No. 20256-219629-01 [hereinafter "Minnkota Initial Comment"].
[2] eDocket Document No. 20256-219630-01 [hereinafter "CMPAS Initial Comment"].

> Minnkota disagrees with the Great Plains Institute's (GPI) implied conclusion that the Commission adopt a definition of "partial compliance" requiring a life-cycle analysis ("LCA") in the context of fossil fuel generation using carbon capture and storage. Minnkota objects to such an approach for three (3) reasons: (1) a life-cycle analysis is not found in the plain language of MN Stat. §216B.1691, (2) performing a life-cycle analysis would not be reflective of the actual annual carbon-free megawatts generated, and (3) performing a life-cycle analysis which accounts for upstream emissions only for fossil fuel generation using carbon capture would be discriminatory unless the Commission also utilizes a life-cycle analysis for the upstream carbon emissions generated in the production of all eligible energy technologies, because as GPI points out "the inclusion or exclusion will impact the partial compliance percentage."[3]

The comment's legal analysis continues with the plain language of the overall statutory scheme requiring the Commission to do annual measurement of utility compliance.[4] An LCA is inconsistent with the statute because:

> An LCA is a framework that is used to evaluate or forecast environmental impact, not a measurement of actual performance. The Department has advocated for rigorous and exacting tracking, monitoring and measuring requirements for market purchases. It would be arbitrary to take the opposite approach for accounting for generation, requiring only estimates.

CURE agrees both with the inference that GPI is seeking to influence the Commission's decision in this docket with formal comments,[5] as well as the analysis that the underlying law does not support an LCA, and that applying such analysis to some technologies and not others is clearly discriminatory. CURE also agrees with Minnkota that subjecting all energy sources to a LCA will ultimately be an unworkable waste of resources and time.[6] Attempting to shoe-horn LCA into a

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[3] Minnkota Initial Comment at 3.

[4] *Id.*

[5] *Id.* (referring to things referenced in GPI's "comments"). This makes GPI a participant in this docket that is subject to the ex parte rules.

[6] *Id.* at 4 ("This process of standardizing would require the Commission to hear and settle any disagreements on LCA framework, require due process, rounds of comments, and likely result in contested dockets and potential appeals of any issued Commission's orders therein. Establishing a Minnesota specific LCA framework would significantly increase burdens on both the utilities operating each resource and Department staff which was not the intent of implementing a carbon-free framework."); *id.* ("Ongoing compliance under an LCA framework would have to allow for and would require the rigor of updating each resource's LCA annually to accurately account for the measured annual performance characteristics. The Commission would need to employ a tremendous amount of staff time towards diligence of input assumptions to avoid manipulation of the LCA process and inaccurate projections or forecasts").

law that doesn't allow it also risks setting an arbitrary standard that will disproportionately fall on some parties who will thereby be motivated to litigate against arbitrary and capricious agency action. To the extent that the Commission wants to avoid long protracted fights over this docket, it should avoid taking any action that adopts an LCA or any standard contrary to the statutory definition of "carbon-free."

Similarly, CMPAS notes that application of LCA to all energy sources would be extremely burdensome to small utilities, and encourages the Commission to set a standard that lessens this burden.[7] CMPAS also discusses how "life cycle emissions" is not actually part of the statutory language, and imposing such analysis on a power source "may possibly go beyond the statutory intent, even if there are already precedents for life-cycle analyses for carbon emission in other matters, such as NGIA."[8]

CURE agrees that the Commission can lessen burdens of compliance by setting a clear standard and believes that avoiding all LCA and hewing to the statutory language will be the most straightforward standard. CURE also strongly supports "a plain language interpretation of the statutory definition of 'carbon-free'"[9] rather than changing the definition to suit predetermined outcomes. CURE has consistently stated that a plain language interpretation is the only way for the Commission to actually decarbonize the electric system, consistent with the intent of the legislature in passing this law. CURE agrees that the law does not support an LCA for one fuel and not others. The law does not support any LCA.

b. Carbon Capture and Sequestration (CCS)

CURE does not agree with Minnkota[10] that CCS should be included as "carbon free" energy in any manner, either for partial or full compliance under the CFS. As already articulated by CURE and others in this docket and Commission Docket No. 23-151, CCS as practiced by large energy plants burning gas or coal is not a "a technology that generates electricity without emitting carbon dioxide" because the capture technology only uses energy, it does not generate any.

In the alternative, if CCS is included in Minnesota's energy mix under an LCA theory, under the regulatory change in the Reconciliation Bill enacted on July 4th at the federal level: "CO_2 used or converted into valuable products or **injected** and geologically stored in a qualified **enhanced oil recovery or natural gas recovery project site** will qualify for the same dollar value credit

[7] CMPAS Initial Comment at 4 -5.
[8] *Id.* at 7.
[9] *Id.* at 3.
[10] CURE also therefore disagrees with all other commenters that suggest CCS can be used for partial compliance, including but not limited to Minnesota Power, and the Department of Commerce and Pollution Control Agency.

as CO_2 that is permanently sequestered in a dedicated geologic storage site."[11] That is to say, CO2 injected for oil and gas extraction now receives the same tax credit as any other CO2 injected underground had.

With this change in policy the Commission can have no assurance that CO2 captured by Minnkota and other CCS carbon providers will not be shipped to oil fields for Enhanced Oil Recovery (EOR) in order to maximize overall profits for CO2 shippers and end users. This change in federal policy occurred after Minnkota's June comment, changing the landscape for how CCS will proceed. Because a barrel of oil will almost always have economic value, the equalized credit for injected tons (plus the lesser difficulty of shallow injection instead of deep injection) means that there is no incentive for "captured" CO2 to be sequestered underground. Instead, it will likely be used to produce additional oil for burning. This greatly increases the potential LCA emissions of CCS and should encourage the Commission to not include it as a technology eligible for partial credit at all.

Ultimately, Minnesota should not subsidize the EOR industry by calling CCS "carbon free" when it never will be. The technology doesn't meet the statutory definition of "carbon free," and any LCA must admit that captured CO2 will be used to produce far more carbon in the form of barrels of oil.

c. Landfill gas

CMPAS's comment theorizes that captured landfill gas could be considered "carbon capture" by relying on a different part of Minnesota law, and asks for a clear definition of what CCS constitutes.[12] This illustrates the difficulty that the Commission will have in assuring that *any form* of CCS is consistent with the carbon-free standard (which does not mention methane). There are a host of technologies out there that would qualify under the definition that CMPAS has identified, but not under the applicable definition of "carbon free."

CMPAS also deftly explains why this docket has not fully given commenters sufficient information on "renewable natural gas" and "biomass" for them to fully disentangle the two concepts.[13] Commenters can't create a record upon which the Commission can decide if terms

[11] *U.S. Preserves and Increases 45Q Credit in "One Big Beautiful Bill Act"*, Global CCS Institute, July 8, 2025, https://www.globalccsinstitute.com/news-media/latest-news/u-s-preserves-and-increases-45q-credit-in-one-big-beautiful-bill-act/ (emphasis added).
[12] CMPAS Initial Comment at 6.
[13] *Id.* (also noting "Renewable natural gas is not explicitly mentioned in Minn. Statute § 216B.1691").

like "renewable natural gas" are left to imagination. CURE agrees that including these fuels requires significantly more clarity and definition prior to a comment period on LCA.[14]

CURE does disagree with CMPAS that if the Commission found "renewable natural gas" or biomass to be not carbon free that the statute would nonetheless require the Commission to accept non-carbon-free credits as carbon free within the statute.[15] The statute clearly differentiates the concepts of renewable energy credits (REC) and carbon-free energy credits. While biomass burning may still be a credit-generating source for RECs under the statute, that same credit will not count as carbon free if the Commission has drawn a distinction between all eligible technologies and carbon-free technologies. CMPAS's assumption that all RECs can be double-counted as carbon free credits is also effectively rebutted by comments made by Minnesota Power.[16] CURE discusses the credit counting issue more later in this comment.

II. CEEM

Clean Energy Economy Minnesota (CEEM)[17] oversimplifies the calculations of an LCA for different energy types and facilities. Minnkota's initial comment more accurately provides a realistic description of the unending amount of analysis and reanalysis that would be required to have defensible LCA numbers. It's easy to say the Commission should "Use a source that is reliable, and provides a standardized method to compare impacts across different energy

[14] CURE is reluctant to discuss the issue of landfill gas because of the lack of clarity about how it would be defined and handled by the Commission. But briefly: if landfill gas is not considered "carbon free" consistent with the statutory language it could still be an electric fuel source until 2040, and after that date there may be less abundant landfill gas due to changes in waste policy. Even if there were not such changes in overall waste, landfill gas could still be used to produce energy and heat for non-utility electric generation without running afoul of the CFS.

[15] CMPAS Initial Comment at 7 (explaining "For example, renewable natural gas could be used to create and sell Renewable Thermal Credits (RTCs), to fund the purchase of EACs that would qualify for the CFS. In that sense, use of the fuel in this manner would be analogous to using fossil fuels to produce hydrogen that is "carbon free" at the point of its combustion in that an otherwise "ineligible" resource like renewable natural gas would still contribute to CFS compliance, albeit indirectly through funding. If anyone attempted to create rules preventing this, such restrictions would not be supported by the statute in its current form.").

[16] "A Renewable Energy Credit ('REC') used to meet the Renewable Energy Standard ('RES') in a compliance year may also be applied to the CFS **provided it meets CFS eligibility requirements**." eDocket Document No. 20256-219639-01, at 7 (emphasis added) [hereinafter "MP Initial Comment"].

[17] eDocket Document No. 20256-219636-01 [hereinafter "CEEM Initial Comment"].

resources,"[18] but there is no ready-made tool that can accurately generalize the many existing and to-be-built resources that supply electricity to Minnesota ratepayers.[19]

CEEM cites to GPI comments to support its positions on waste woody biomass.[20] However like many who support biomass as carbon-free energy, CEEM refers only to a study and presentation addressing woody biomass of the Twin Cities metro area,[21] making it totally inappropriate and irrelevant to the forested areas of Minnesota in the northern half of the state where new biomass generation that far exceeds the scale of the facilities that operate in the metro area has been proposed by Minnesota Power.

CURE disputes using woody biomass data that ignore most of the forests in the state and region—focusing only on metro area woody biomass in no way prepares the Commission for the reality of the forestry industry where it actually operates. The fact that the Twin Cities is currently undergoing a historically unprecedented die-off of ash trees from bark beetle infestations is a fundamental part of this data, making it inapplicable historically and to other forest types. The Commission should not make policy about woody biomass based on a one-off urban reality that has nothing to do with the long-term management and health of Minnesota's forests.

III. Minnesota Power

CURE agrees with Minnesota Power's initial comment where it says that GPI hosted "record development meetings," demonstrating GPI's attempt to influence and change this docket proceeding as a participant.[22] However, CURE disagrees with most of Minnesota Power's other comments.

For reasons already articulated by CURE, Minnkota, and CMPAS, the Commission should reject Minnesota Power's counsel regarding how to apply an LCA to only some technologies.[23] ISO 14040 is not relevant when the Commission has no legal authority to adopt it.

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[18] *Id.* at 2. Paradoxically CEEM also wants the Commission to "Consider unique and/or counterfactual circumstances." A suggestion which is entirely contrary to the idea of easy and across-the-board generalization.
[19] See discussion of the Hibbard plant, below.
[20] *Id.* at 3 n.2 (citing a GPI comment in Commission docket number 24-318, which appears to be a typo and instead refer to a filing in the instant docket, eDocket Document No. 20255-218741-03).
[21] *See* GPI comment, Cabium, *Woody Biomass Presentation - Expanding Capacity for Woody Biomass Processing in the Twin Cities Metro Area Report Summary*, May 9, 2025, eDocket Document No. 20255-218741-03. CURE agrees with CEEM that GPI's comments in this docket were in fact "comments" whose purpose is to influence the Commission's decision in this docket.
[22] MP Initial Comment at 1.
[23] *See id.* at 2–3.

a. Woody biomass

Minnesota Power makes a large point about using "unmerchantable wildfire fuels" as "sustainable woody biomass" and in doing so makes a number of inaccurate and misleading statements.[24] While it is true that balsam fir and other dead and dying trees have proven to be highly flammable and dangerous sources of wildfire in Northeast Minnesota's boreal forests in the recent years,[25] there is no evidence that professional foresters will ever have the incentive (or sufficient subsidy) to selectively harvest dead and rotting material and transport it many miles, sometimes hundreds, to be burned in a converted coal plant. When foresters have done balsam clearing and brought trees to Minnesota Power's Hibbard plant in Duluth, the stand had to be "cleared" and even then the economics have not supported driving balsams a relatively short distance more economically rational than chipping the trees on site and leaving them on site.[26] What Minnesota Power is therefore suggesting, without saying so, is clearcutting trees nearest to coal plants, and increasing the fuel costs of energy significantly, all for a fuel that is not "carbon free" when it is burned.

The real cause of the forest fires that Minnesota Power highlights is climate change. Both the Duluth News Tribune[27] and New York Times[28] have covered this recently and reached similar results. "Boreal forests lost more than two times the canopy area in 2023-24 compared with the period between 2002 and 2022, the study found. . . . North American forests lost nearly four times as much canopy, mostly because of Canada's wildfires."[29] These fires are happening in remote areas, away from human ignition sources.[30] Climate change is increasing "fire weather" and making both fires in remote areas more likely and fire seasons longer.[31] There is "a growing

[24] *Id.* at 4.
[25] Dan Kraker, *How a caterpillar native to Minnesota made its forests fuel for wildfires*, MPR News, May 21, 2025, https://www.mprnews.org/story/2025/05/21/the-spruce-budworm-in-minnesota-is-fueling-wildfires.
[26] *See id.* ("While there are some grants and cost-sharing programs available, there aren't many commercial markets for balsam wood or pulp to help offset the cost. Josh Hull, the logger who cleared Tuttle's land, hauled some of the balsam to a power plant in Duluth that burns biomass. But the rest he mulched and left on the forest floor.")
[27] April Baumgarten, *What is causing one of Canada's worst wildfire seasons in history?*, Duluth News Tribune, July 25, 2025, https://www.duluthnewstribune.com/weather/what-is-causing-one-of-canadas-worst-wildfire-seasons-in-history [hereinafter "DNT wildfires"].
[28] "Extreme forest-fire years are becoming more common because of climate change, new research suggests." Rebecca Dzombak, *Climate Change Is Making Fire Weather Worse for World's Forests*, NY Times, July 21, 2025, https://www.nytimes.com/2025/07/21/climate/extreme-fire-weather-forests.html.
[29] *Id.*
[30] *Id.*
[31] *Id.*

body of evidence that points to climate change as one of the main reasons the planet is experiencing more frequent and more severe forest fires, often overlapping."[32] After record fire destruction in 2023 and 2024, studied in the analyses covered by the New York Times, one might have hoped for a less extreme Canadian fire season in 2025.

No such luck. In 2025 the Canadian fire season has been historically bad, "Roughly 3,400 wildfires have destroyed almost 15 million acres of land in Canada as of Thursday, July 24" according to the Duluth News Tribune—and several more months of burning season will destroy more over this summer.[33] Currently Minnesota is on pace to have more air quality alerts than the record-setting 2023 season,[34] and the state issued the longest air quality alert in state history at the end of July and start of August.[35] Minnesota Power customers are among the hardest hit, with air quality in northern Minnesota being consistently compromised while areas further south have had less Canadian smoke to deal with. Recent research indicates an association between wildfire smoke and dementia in some populations, such as Native Americans and those under 75.[36] Long-term exposure to unhealthy air also kills people and lessens their quality of life. Contrary to its position in initial comments, Minnesota Power's customers don't need more climate drivers of smoke, nor do they need rate increases to support burning biomass that will only lead to more pollution.

Additionally, far from forest management, Minnesota Power's comment illustrates that when it says "woody biomass" it often means toxic inputs such as railroad ties.[37] Railroad ties are not "non-hazardous" as Minnesota Power states, they are treated with oil or wood derivatives that are also used as a broad spectrum pesticide to prevent insect and fungal damage.[38] Rather than being innocuous, creosote is not even available for household use.[39] EPA advises against burning

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[32] *Id.*
[33] DNT wildfires, *supra* note 27 (citing Richard Carr, a fire research analyst with the Northern Forestry Centre).
[34] Ethan Kramer, *Potential for record-breaking year of Air Quality Alerts issued in Minnesota*, Valley News Live, Aug. 12, 2025, https://www.valleynewslive.com/2025/08/12/potential-record-breaking-year-air-quality-alerts-issued-minnesota/.
[35] *Minnesota faces longest air quality alert in state history with wildfires raging across Canada*, MPR News, Aug. 3, 2025, https://www.mprnews.org/story/2025/08/02/minnesota-faces-longest-air-quality-alert-in-state-history.
[36] *See* Holly Elser et al., *Wildfire Smoke Exposure and Incident Dementia*, JAMA Neurology, November 25, 2024, 2025;82;(1):40-48. doi:10.1001/jamaneurol.2024.4058, https://jamanetwork.com/journals/jamaneurology/article-abstract/2827124. This article has been corrected since original publication, see https://jamanetwork.com/journals/jamaneurology/fullarticle/2828749.
[37] MP Initial Comment at 6 (encouraging the Commission to support the burning of railroad ties).
[38] U.S. EPA, Creosote, https://www.epa.gov/ingredients-used-pesticide-products/creosote.
[39] *Id.*

railroad ties due to the overall toxicity: "Do not burn creosote or other preservative-treated wood in a residential setting to avoid possible inhalation of toxic chemicals in the smoke and ash."[40] Hardly non-hazardous by definition, federal hazardous waste laws requires businesses that have railroad ties to "to make a determination if it is hazardous waste."[41] At the Minnesota Power Hibbard plant—an old coal plant that is called a "renewable energy center" because it burns some wood as well as coal—in the past five years the company has burned between 32,719 and 47,543 tons of railroad ties annually because "Railroad ties are a lower cost biomass option for the facility" compared with other sources of wood waste.[42]

CURE will not repeat arguments already made about why an LCA is not supported by the statute at issue here, but Minnesota Power's statements about biomass as a "carbon free" fuel source range even further. It is simply unscientific and untrue that tons of carbon from burning trees have a different time aloft in the atmosphere than tons of carbon from burning coal, or as Minnesota Power commented: "Biogenic emissions are recaptured via natural processes on a span of years to decades as opposed to fossil fuel-based emissions, which linger in the atmosphere for centuries."[43] The Commission should avoid making any decisions in this docket based on pseudo-science without support.

It is also false that "biomass is the only dispatchable, non-fossil generation technology available to Minnesota utilities without preexisting nuclear generation assets."[44] Minnesota Power has several small hydroelectric plants that it dispatches seasonally. It could also invest in pumped hydro storage, a cheap and available dispatchable technology that stores renewable energy for use as needed over a long time span. Moreover, Minnesota Power's comment regarding its reliance on Hibbard for dispatchable power overstates the woody biomass use at that plant—based on this comment the Commission would be led to believe that Hibbard only burns woody biomass. In 2022, the year that Minnesota Power says it increased Hibbard's capacity factor to 20 percent, Hibbard also burned more coal than any other year in the past 5 years.[45] In 2022, 11.83 percent of its MBTUs were from burning coal.[46] That same year MPCA issued a letter of warning to Minnesota Power for earlier air violations at Hibbard.[47] The Letter of Warning was for burning more coal than allowed under the facility's air permit in 2019.[48] MPCA issued another Letter of Warning for air violations in 2025, again for burning more coal at Hibbard than was

[40] *Id.*
[41] *Id.*
[42] Minnesota Power response to CEO IR 7 in Commission Docket No. E-015/RP-25-127, April 28, 2025.
[43] MP Initial Comment at 9.
[44] *Id.* at 9.
[45] Minnesota Power response to CEO IR 27 in Commission Docket No. E-015/RP-25-127, May 27, 2025, eDocket Document No. 20255-219270-03. The facility also burns
[46] *Id.*
[47] *See* 2022 MPCA letter of warning, Attachment A.
[48] *Id.*

allowed under the facility's air permit.[49] This was for a violation shortly after Minnesota Power's comment indicates Hibbard was at a high capacity factor in the winter of January 2025.[50]

Using Hibbard as the example for Minnesota Power's wish to burn more biomass is concerning, considering the repeated air violations and significant coal burning that goes on there regularly. However, it's important to note that Hibbard is a comparatively small power plant, and the conversion of Boswell Unit 4 would have landscape-level impacts that go far beyond anything experienced by the utility at Hibbard.

In a Presentation to the Mineland Vision Partnership from March 2025, a representative of Minnesota Power revealed that in addition to railroad ties, the company is considering how to create new kinds of biomass products, including pellets and biochar.[51] In those presentation slides, it is stated that the company is considering replacing coal use at Boswell Unit 4 with biomass, and that this docket will settle that issue.[52] The slides also refer to a "fiber study" and provide a map that shows the heaviest harvest for biomass will be in a circle with a radius of 75 miles around Cohasset and Boswell.[53] This study of creating a pellet biomass industry around Cohasset clearly would require heavy harvest of lands in the nearest forest, including those managed by the Leech Lake Band of Ojibwe. While the presentation mentions studying the use of waste wood, it also discusses "white wood pellets"[54] which would generally involve cutting down whole trees and using the "round wood" trunks to create pellets,[55] not using residual wastes. Pellets, or indeed biochar (which is already being sold as a drop-in fuel for coal plants like Boswell),[56] have significantly worse environmental and environmental justice impacts than previously known.[57] The Commission should not accidentally approve the use of these types of woody biomass under the CFS without fully understanding the implications of that decision on environmental justice communities, including tribes and low-income people within 75 miles of Cohasset.

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[49] *See* 2025 MPCA letter of warning, Attachment B.
[50] MP Initial Comment at 10.
[51] *See* Kurt Anderson, Minnesota Power, Biochar / Biomass Carbon-Neutral Fuel https://mvpmn.org/wp-content/uploads/2025/03/BioChar-and-Biomass-Fuel.pdf.
[52] *Id.* at 2, 4.
[53] *Id.* at 6.
[54] *Id.* at 10.
[55] Jack Yuan, *How are wood pellets made: The Complete List (10 Steps)*, Bio Pellet Machines, Feb. 18, 2020, https://www.biopelletmachines.com/how-are-wood-pellets-made/.
[56] "Biocoal, in the form of torrefied wood pellets, is a readily available drop-in replacement for thermal fossil coal." Airex, Biocoal, https://airex-energy.com/products/biocoal/.
[57] Press Release: Southern Environmental Law Center, Groundbreaking report reveals harmful impacts of biomass wood pellet plants, Oct. 9, 2024, https://www.selc.org/press-release/groundbreaking-report-reveals-harmful-impacts-of-biomass-wood-pellet-plants/.

b. Hydrogen

Finally, CURE disagrees with Minnesota Power that hydrogen co-firing at a natural gas plant should be in any way eligible for partial compliance under the CFS.[58] In the extremely unlikely scenario that any Minnesota utility can get enough hydrogen to co-fire any sized gas plant, if that hydrogen is "partial compliance" then the use of hydrogen is perpetuating the burning of fossil gas beyond what would be allowed under Minnesota law. Will the Commission conduct additional LCA of the plants kept running because of an overly simplistic hydrogen policy? Rather than a bridge to a carbon-free future, co-firing with hydrogen may merely be another way for the gas system to continue, despite the plain language of the CFS and intent of the legislature.

IV. Pollution Control Agency and Department of Commerce

The Minnesota Department of Commerce and Pollution Control Agency (collectively "agencies") have submitted an initial comment that spends considerable time investigating matters that are not germane to applying the CFS as written in statute. For example, it is not consistent with law to say that: "The determination of carbon-free eligibility is highly dependent upon the modeling choices made, and the basis of comparison to a counterfactual base case, or business-as-usual scenario."[59] This statement ignores the plain language of the statute, which states "'Carbon-free' means a technology that generates electricity without emitting carbon dioxide" without any reference to modeling, counterfactual base cases, or business-as-usual scenarios. The Commission should ignore these agency comments to the extent that they urge the Commission to violate the standard set out in statute.[60]

It is also irrational, once you start an LCA, to cherry pick only the parts of the analysis you would like to do, for example: "As opposed to traditional LCA, fuel LCA does not analyze all material inputs that go into a production system, such as raw materials, processing, and transport, power plant construction, and other inputs. Fuel LCA only studies the fuel production system, which simplifies the analysis."[61] Starting with model inputs that serve these agencies preferred outcome, and is contrary to normal LCA practice, is a poor basis for any Commission decision.

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[58] MP Initial Comment at 8.
[59] eDocket Document No. 20256-219638-01 at 1 [hereinafter "DOC-DER and MPCA Initial Comment"].
[60] There are many examples of false leads to cite to in the DOC-DER and MPCA Initial Comment, but for just one of these: "the Agencies support technologies and fuels that demonstrate a proven improvement to net carbon emissions across the state and take into account alternate handling of materials and waste products." *Id.* at 11. Net emissions are irrelevant to a CFS that requires zero emissions in the generation of electricity.
[61] *Id.* at 1.

Furthermore, asking all commenting parties to fill out a ballot, as the agencies do in their initial comment,[62] appears to conflate the application of law and science with a political process. While the Commission staff must make some sense of the comments in this docket, it is hardly the case that voting among commenting stakeholders is a valid way to make a decision on what a law means. CURE encourages the agencies and all commenters to instead focus on the actual legal and policy arguments in this case without creating a false sense of order through voting.

It is questionable whether the agencies have fully considered that a reevaluation of an LCA every five years[63] is not particularly useful for biomass plants, such as Hibbard, where the use of coal and natural gas changes by the day, and also includes unforeseen events such as when Minnesota Power is cited for burning more coal than allowed under its air permit. Available data in the Minnesota Power IRP demonstrates that over a five-year period the tonnage of railroad ties, coal, and wood wastes varies greatly at Hibbard, making a five-year average LCA likely misleading, as well as not a valid assurance of full compliance with the CFS. Further, the idea that a polluting facility would not be re-assessed under the CFS until fully depreciated, "otherwise ratepayers could be stuck with a stranded asset,"[64] fully ignores the intent and language of the CFS requiring compliance by 2040. The agencies' suggestions on LCA reanalysis based on changes in fuel source would allow Hibbard (or indeed Boswell, which is an order of magnitude larger) to burn up to 10 percent more coal than modeled without having to do any updated LCA.[65] Surely the CFS doesn't allow that much leeway in burning the most carbon-intensive and polluting fuels.

It is also misleading to state that: "Waste material is byproduct of other processes, and will be created regardless of whether or not the waste is used for electricity generation."[66] Minnesota has a hierarchy of waste,[67] supported in law,[68] favoring reduction and reuse over disposal, burning, and landfilling. We discuss this contradictory position further below.

Additionally, it is not true that "Primary biomass is not specifically addressed in Minn. Stat. § 216B.1691"[69] because the definition of carbon free explicitly only allows for technologies that produce electricity without emitting carbon dioxide—therefore the law forbids burning biomass to make electricity that is "carbon free." As such, it is not within Commission discretion to make a decision without statutory guidance, it is the Commission's task to apply the law correctly.

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[62] *Id.* 8.
[63] *Id.* at 10.
[64] *Id.*
[65] *Id.*
[66] *Id.* at 11.
[67] MPCA, Waste planning and recycling, https://www.pca.state.mn.us/air-water-land-climate/waste-planning-and-recycling.
[68] Minn. R. 7035.0350.
[69] DOC-DER and MPCA Initial Comment at 12.

CURE does however agree with the agencies' point that follows, which is that cutting down trees to create biomass (say for a pellet or biochar plant) would be a poor use of resources. CURE would also add that "primary biomass" production will harm Minnesota communities and the environment, potentially far more than past examples of biomass production, as discussed above. Primary biomass also consumes more water than any other electric generation source,[70] another impact that will become worse in a changing climate with more frequent drought impacting forest growth and farmed crops.

On the issue of conserving scarce resources: the Commission will not need to create a working group on waste biomass[71] if it correctly finds that burning biomass emits carbon in order to generate electricity, in violation of the CFS.

V. Ramsey/Washington Energy & Recycling Board, the Partnership on Waste & Energy, and Olmsted County

The Ramsey/Washington Energy & Recycling Board (R&E) begins its argument[72] by asserting that because garbage burning is included as an Eligible Energy Technologies (EET) under the Renewable Energy Objectives that the RECs generated in biomass and garbage burning must be sufficient to comply with the CFS. CURE laments but does not dispute that the statute allows for garbage burning under the EET definition, and that this is a failing that will have to be addressed by the legislature, as other states have done.[73] This issue of credits is of course being addressed at length in the concurrent proceeding under Docket No. CI-23-151 where the Commission has clearly recognized that there is a distinction between EETs, carbon-free-but-not-renewable, and renewable-but-not-carbon-free energy sources and the type of credits they generate. For the sake of completeness in this record however and addressing R&E's reference to Subdivision 4 of Minn. Stat. § 216B.1691, it is important to view the actual language:

> Renewable energy credits. (a) … The program must permit a credit to be used only once, except that a credit may be used to satisfy both the carbon-free energy standard

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[70] Cutler Cleveland, *What methods of electricity generation use the most water?*, Boston University Institute for Global Sustainability Visualizing Energy Blog, July 28, 2025, https://visualizingenergy.org/what-methods-of-electricity-generation-use-the-most-water/ ("Electricity from biomass consumes substantial quantities of water for several reasons. Growing the crops or plants used as biomass feedstock often requires irrigation which leads to significant evaporation. Plants also lose water through transpiration, the movement of water from the soil, and eventual release into the air from their leaves. The processing and conversion of biomass can consume additional large quantities of water.").

[71] DOC-DER and MPCA Initial Comment at 12–13.

[72] eDocket Document No. 20256-219617-01 [hereinafter "R&E Initial Comment"].

[73] Jacob Wallace, *Maryland lawmakers vote to end renewable subsidy for incineration,* Waste Dive, April 9, 2025, https://www.wastedive.com/news/maryland-renewable-energy-portfolio-subsidy-incineration-end/744864/

obligation under subdivision 2g and either the renewable energy standard obligation under subdivision 2a or the solar energy standard obligation under subdivision 2f, **if the credit meets the requirements of each subdivision.** (emphasis added)

The inclusion of the phrase "if the credit meets the requirements of each subdivision," which was added to the definition of RECs in 2023 as part of the CFS, very clearly indicates that the legislature recognized that not all EETs would meet the carbon free standard because they by-definition emit carbon.

Collectively, the proponents of garbage burning (also including the agencies and Xcel) all continue to promote the argument that the carbon-free status of garbage burning must account for the assumption that any garbage that is not burned will end up in a generic landfill. This stance continues to ignore the current reality that the state, counties, municipalities—both metro and Greater Minnesota-based—have committed to waste reduction initiatives, with ambitious but achievable goals for mitigating the waste crisis.[74] The movement towards a zero-waste future is premised on the efficacy of recycling and composting programs, the creation of reusable products, and the reduction of waste at the source as opposed to the current system which relies on and incentivizes landfills and/or burning solid waste in perpetuity. Assessing the carbon-free status of garbage burning with landfilling as the only alternative is not simply a sad acceptance of the status quo, as R&E acknowledges,[75] but a negation of the actual advancements in waste reduction that many entities, including MPCA, have committed to.

We also reiterate that the CFS is energy not waste management policy and so an applicable counterfactual assessment of garbage burning would be to compare it to other truly clean and renewable technologies that it would replace for CFS compliance.[76] That said, CURE does see the logic in the argument and has taken the position elsewhere that policy should not be viewed in isolation, especially if implementation of one policy would undermine the goals of another. With this in mind, we would encourage the Commission and garbage burning proponents to refer to Minn. Stat. §115A.02 which codifies what is more commonly referred to as the Minnesota Solid Waste Hierarchy and consider how allowing for garbage burning under the CFS would be in complete misalignment with this foundation of the Minnesota Waste Management Act. While

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[74] *Mapping Zero Waste Cities*, Waste Dive, updated December 22, 2022, https://www.wastedive.com/news/zero-waste-cities-us-goaltracker/635401/; Minneapolis Zero Waste Plan 2017, https://www.minneapolismn.gov/media/-www-contentassets/documents/Zero-Waste-Plan_November-2017---clean---no-hyperlinks.pdf

[75] R&E Initial Comment at 7.

[76] The National Renewable Energy Laboratory assessed the lifecycle GHG emissions from renewable electricity producing sources, and found the list as follows in grams of CO_2 equivalent per kilowatt (g CO_2/kW): ocean energy - 8, wind energy & nuclear - 13, hydropower - 21, concentrating solar power - 28, geothermal energy - 37, photovoltaic - 43, biomass – 52. Life Cycle Greenhouse Gas Emissions from Electricity Generation: Update, NREL Fact Sheet (2021). https://www.nrel.gov/docs/fy21osti/80580.pdf.

proponents of garbage burning prefer to draw attention to the far bottom of the hierarchy, by law we should be putting the full weight of our resources behind moving towards the top. Allowing for garbage burning under the CFS creates a perverse profit incentive to generate waste, drawing public and private financing towards a waste disposal practice that we are mandated to shrink our reliance on and undermining our ability to truly mitigate the waste crisis and associated public and community health crises, through reduction, reuse, recycling, and composting.

VI. Conclusion

CURE looks forward to the third round of comments and continues to urge the Commission to follow the CFS statute rather than performing complex LCA analyses and setting standards that are not consistent with law.

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