

April 6, 2021

Honorable Jamie Long  
Chairman, Minnesota House Climate and Energy Finance and Policy Committee  
Minnesota House of Representatives  
100 Rev. Dr. Martin Luther King Jr. Blvd.  
Saint Paul, MN 55155

Dear Chair Long and the House Climate and Energy Finance and Policy Committee,

We would like to thank Representative Long and the Climate and Energy Committee for the opportunity to provide testimony on the omnibus energy bill on behalf of the Union of Concerned Scientists. The Union of Concerned Scientists (UCS) is the nation's leading science-based nonprofit organization, putting rigorous, independent science to work to solve our planet's most pressing problems. On behalf of UCS's 6,800+ supporters in Minnesota, we strongly encourage you to support the following climate and energy priorities in your bill:

- Support H.F.2083, the Future Fuels Act (Lippert)
- Support H.F. 278, the bill to update the renewable energy standard and reach 100 percent carbon-free electricity by 2040
- Support H.F. 164, the Energy and Conservation Optimization Act
- Support H.F. 1428, the Next Generation Climate Act

Minnesotans are facing a climate crisis in addition to an economic and public health crisis, which has also exposed existing racial injustices and socioeconomic disparities. And despite being one of the first states to take significant climate action with the Next Generation Energy Act, Minnesota has fallen behind on its emission reduction goals, and other states have leapfrogged the Minnesota renewable energy standards. This omnibus proposal is the level of ambitious climate leadership Minnesotans need.

### **Future Fuels Act**

UCS has been engaged with a broad coalition of stakeholders to develop a comprehensive approach to decarbonize transportation fuels in Minnesota. Using a science-based approach that measures each fuel based on its full lifecycle emissions ensures that actors in the fuel supply chain are doing their part to clean up transportation.

UCS supports the Future Fuels Act because:

1. **The Future Fuels Act will accelerate electric vehicles:** Electric vehicles are growing in Minnesota but need a boost. While Minnesota is a leader in biofuel production, EV sales are lagging behind leading states. The Future Fuels Act would support electrification of all modes of transportation directly in proportion to their assessed climate benefits. Together with a [Zero Emissions Vehicles](#) standard for vehicles and [utility programs to build out charging infrastructure](#) for both [passenger vehicles](#) and [trucks and buses](#), the Future Fuels Act can help accelerate a transition to clean electric transportation. **It is important to UCS that the Future Fuels Act includes intent language directing the enacting agency to ensure that the benefits of electrification are equitably distributed, so that all Minnesotans benefit, particularly those underserved or overburdened by transportation pollution.**
2. **The Future Fuels Act will ensure that biofuels production keeps improving:** With advances in technology, biofuel producers have been getting cleaner and more efficient, delivering greater climate benefit from each gallon of biofuel. Most current biofuel policies focus on increasing biofuel consumption, neglecting the opportunity for biofuel producers to further reduce emissions. The Future Fuels Act rewards fuel producers in proportion to the climate benefits their fuel provides. This means cleaner biofuels get more support, and biofuel producers have an incentive not just to increase production, but to reduce fossil energy use and emissions per gallon. **It is important to UCS that the Future Fuels Act includes intent language to direct the administering agency to protect natural lands from conversion to row crop agriculture. While agriculture and biofuels have an important role to play in broader decarbonization, it is important that biofuels policies do not increase the footprint of cropland devoted to fuel and energy production.**
3. **A Future Fuels Act will help farmers get into the clean fuel game:** The lifecycle of a biofuel begins on the farm, but today lifecycle-based fuel policies on the west coast have no mechanism for farmers growing biofuel crops to document emissions reductions. Reducing emissions and sequestering carbon on farms translates to lower carbon fuels, so a key focus of the Future Fuels Act is to bring farmers into fuels policy, which will help them get compensated for their work to reduce emissions and improve [soil health](#). A focus on farmers makes sense in Minnesota as a leading biofuel producer. However, the science and policy mechanisms to support farming that reduces overall emissions are at an early stage of development. **A careful and inclusive process will be needed to implement these measures well, and course corrections may be required over time. Moreover, regulators should ensure that incentives within a fuels policy avoid unintended counterproductive outcomes and are structured equitably so that all farmers can benefit, including small and midsize farms, and particularly Black farmers, Indigenous farmers, and other farmers of color**

UCS looks forward to working with the legislature and, upon passage, with regulators to develop a practical policy that advances clean transportation, includes safeguards to protect natural lands and provisions to ensure an equitable distribution of benefits from clean transportation.

## **100 Percent Carbon-Free Electricity by 2040**

UCS is grateful for Chair Long's leadership in prioritizing bold, aggressive climate action such as 100 percent carbon-free electricity by 2040. It has been almost 15 years since Minnesota has taken significant action to drive renewable energy and reduce fossil fuel emissions, and UCS is thrilled that the House is pressing ahead with a 100 percent carbon free future for Minnesota.

The 100 percent carbon free energy initiative proposed by Rep. Long is key to Minnesota getting back on track with emission reductions and regaining its position as a national leader in deploying renewable energy and efficiency, bringing new jobs and investments to the state. Extending the renewable energy standard and requiring net-zero electricity by 2040 is essential for enabling deep decarbonization in other sectors, such as heating and transportation.

Strong renewable energy standards will help maximize the potential economic and health benefits for Minnesotans as well as incentivize utilities to reconsider their near-term plans to lock Minnesota into new gas infrastructure that would undermine the state's ability to fully decarbonize the power sector in the next two decades.

### **Equity and Environmental Justice**

The transition to 100% carbon-free electricity must be done equitably, and we appreciate that this bill makes significant progress on ensuring local benefits, local jobs, and environmental justice. Ensuring that all Minnesotans are able to access the benefits of a transition clean, renewable energy is critical, and we support that this bill lays out a framework to consider environmental justice concerns and ensure frontline communities are included in and benefiting from the energy transition.

In order to ensure that Minnesota's 100 percent carbon free energy future addresses existing racial and socioeconomic disparities, rather than maintaining or exacerbating them, [we must center environmental justice](#). [Our current energy system disproportionately harms](#) Black and Indigenous Minnesotans and other Minnesotans of color, who face higher energy burdens, higher levels of pollution and higher rates of respiratory issues due to poor air quality, and higher unemployment and poverty rates. All this is compounded further with the ongoing pandemic.

**The amendment to remove municipal solid waste incineration at the Hennepin County trash burner (HERC) from the definition of renewable energy is an important step toward an environmentally just clean energy future.** HERC is the largest facility of its kind in Minnesota, and is located in a populous environmental justice community, adding to the pollution burdens borne by environmental justice communities in Minnesota. Waste incineration is not a climate solution and therefore has no place in renewable or carbon free electricity policy. Mixed municipal solid waste incineration emits pollution that contributes to climate change and exacerbates climate impacts. In addition to the global warming emissions that these incinerators are responsible for, the particulate pollution from waste incineration makes climate impacts like extreme heat all the more deadly in polluted areas by creating smog and bad air quality days in addition to the heat. While MSW may currently be considered a solution to Minnesota's waste problems, the state should not conflate solutions to other problems as climate solutions, especially as this energy technology actively counteracts both carbon-free electricity and environmental justice goals.

## **Renewable Energy**

The backbone of climate action and clean energy policy must be increasing renewable energy like wind and solar energy. Minnesota's ability to provide clean energy jobs, reduce pollution in communities, and mitigate the impacts of climate change hinges on a strong renewable energy standard and investments in renewable energy.

Accelerating renewable energy development in the state provides exciting economic and health benefits, both of which are sorely needed as Minnesotans face the ongoing public health and economic crisis of COVID-19, in addition to climate. Increasing renewables is affordable for Minnesota and energy consumers. The cost of renewable energy and energy storage has fallen dramatically, with [solar costs plummeting more than 80 percent over the past decade](#), and continued cost reductions are expected. Investments in energy efficiency and renewable energy can lower consumer energy bills and improve local [air quality](#), reducing the [energy burden](#) for low-income customers as well as the pollution burden for environmental justice communities. Clean energy investments would also lower the cost of climate change and improve public health by reducing air and water pollution from burning fossil fuels.

Since Minnesota passed the Next Generation Energy Act, 10 states plus D.C. and Puerto Rico have adopted renewable electricity standards greater than 50 percent and at least 10 states have adopted renewable or carbon-free electricity requirements or goals reaching 100 percent between 2040 and 2050. A 100 percent carbon free energy by 2040 standard is the level of ambitious climate action Minnesotans need, and ensuring interim renewable energy and carbon free energy targets are part of this proposal sets Minnesota up to make rapid and sustained progress. These interim targets will accelerate the state's clean energy momentum, enable Minnesota to compete with other states and attract new clean energy jobs, and ensure that we are able to halve emissions in the next decade. UCS has been a leading advocate for these kinds of renewable and low-carbon standards at the state and federal levels for more than 20 years, including important benefits such as workforce development, reducing energy costs for consumers, and mitigating impacts of fossil fuel use such as poor [air quality](#) and climate change.

### **Energy Conservation and Optimization (ECO) Act of 2021 (HF164)**

**UCS is grateful for Rep. Stephenson's leadership in reducing and optimizing Minnesota's energy use.** Over the years, Minnesota's successful Conservation Improvement Program (CIP) has saved customers money, supported local jobs, and lowered carbon emissions and other pollutants through efforts to reduce consumption of electricity and natural gas. ECO would build on this success by including additional energy and cost saving opportunities from load management and efficient fuel switching. It would also increase the overall statewide goal for energy savings and increase or establish electricity and gas savings goals for investor-owned, municipal, and cooperative utilities. ECO will provide Minnesota residents and businesses with more opportunities to save money on their energy bills, create additional economic opportunities for local work forces, and further reduce harmful emissions from power plants.

## **Next Generation Climate Act**

UCS worked on and was supportive of the bipartisan Next Generation Energy Act (NGEA), signed into law by Gov. Pawlenty in 2007. As climate science has advanced, we must re-align our climate solutions with the most up-to-date science. UCS has advocated for the last few years for Minnesota to [update](#) this policy – both the emission reduction targets and the [renewable energy standard](#). We are grateful for Representative Acomb’s leadership on this legislation and for her support of science-based policy.

**UCS supports the emission reduction goals laid out by the bill as well as the measures to help ensure the new goals are met.** The Next Generation Energy Act has helped Minnesota make some progress in reducing emissions from its economy, but the state has already missed the first goal of the NGEA and is not on track to meet the 2030 target. Requiring the government to take actions consistent with these standards and protect overburdened communities from disproportionate impacts will be key to ensuring Minnesota stays on track to meet updated science-based targets. Yearly reporting by the Minnesota Pollution Control Agency on Minnesota’s progress and recommendations on potential changes will also help ensure Minnesota stays on top of the climate science.

**The science is clear – limiting global warming and its adverse effects requires rapid reductions in heat trapping emissions now.**

The Intergovernmental Panel on Climate Change (IPCC) – the world’s most authoritative source of information on the science of climate change – made it clear in its 2018 report<sup>1</sup> that achieving the Paris Agreement’s temperature goals of limiting warming to 2.7°F (1.5°C) or 3.6°F (2°C) above preindustrial levels would require dramatic reductions in heat trapping emissions now. Limiting warming to 2.7°F (1.5°C) above preindustrial levels with no or a limited overshoot of this temperature goal requires that society reach net zero carbon dioxide emissions by around 2050, with nearly half of these carbon dioxide emission reductions achieved by 2030. In addition, net zero carbon dioxide emissions would need to be achieved by around 2070 to limit warming to 3.6°F (2°C) above preindustrial levels.

The report also makes clear that achieving these lower temperature goals will also require deep and swift reductions in non-carbon dioxide heat trapping emissions, including methane and nitrous oxide, as well as reliance on carbon dioxide removal (negative emissions) measures. The report is clear that the core component of a robust net zero goal is swift, deep, absolute heat trapping emission reductions, which carbon dioxide removal measures would complement. Carbon dioxide removal measures cannot be used to avoid or delay those deep, absolute emission reductions, or perpetuate fossil fuel dependence.

**Pairing this bill’s updated emission reduction targets with policies to accelerate renewable energy deployment and electrification of Minnesota’s economy will be key to meeting the updated and strengthened greenhouse gas reduction goals.** Rep. Long’s proposal to achieve 100 percent carbon-free energy by 2040, including 55 percent renewable energy by 2035 (H.F. 278) provides the much-needed update to Minnesota’s renewable energy standard as set by the original Next Generation Energy Act, which the state met [seven years early](#). Achieving 100 percent carbon-free electricity will go a long way toward meeting the updated greenhouse gas emission reduction targets, as will proposed policies such as

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<sup>1</sup> <https://www.ipcc.ch/sr15/>

Clean Cars Minnesota to reduce emissions in other sectors. The fact that Minnesota is behind on outdated emission reduction targets is a wake-up call to accelerate emission reduction across the state, not a reason to stray further from the science. Minnesota should double down on efforts to increase renewable energy like wind and solar and electrify transportation and building sectors as quickly and as much as possible.

**Every fraction of a degree of additional global warming is expected to bring increasingly dramatic changes to the people, economies, and natural resources of Minnesota on top of those already observed.**

The Union of Concerned Scientists published a study in 2019<sup>2</sup> in which we examined how extreme heat is likely to change across the contiguous United States under three global warming scenarios. More specifically, we looked at the number of days in which the heat index<sup>3</sup>, or, “feels like” temperature, exceeds different thresholds relevant to human health and wellbeing (90°F, 100°F, 105°F).

Our analysis included three scenarios associated with different levels of global heat-trapping emissions and future warming:

1. A “no action” scenario, in which heat-trapping emissions continue to rise throughout the 21st century and global average temperatures warm by nearly 8°F (4.3°C) above pre-industrial levels by the year 2100. This scenario is consistent with our current and historical emissions growth.
2. A “slow action” scenario, in which heat-trapping emissions start to decline at midcentury. This scenario projects a most likely warming of 4.3°F (2.4°C) globally by the year 2100.
3. A “rapid action” scenario, in which future global average warming is limited to 3.6°F (2°C) above pre-industrial temperatures, as prescribed by the 2015 Paris Agreement.

We found that in Minnesota, there have historically been 8 days per year on average with a heat index above 90°F. With no action to steeply reduce emissions, this would increase to 34 days per year on average by midcentury and 60 days by century’s end. However, with “rapid action,” by the end of this century, the number of days with a heat index above 90°F would be limited to 29 days per year on average. Put another way, meeting the Paris Agreement’s goal of limiting warming to 3.6°F (2°C) could spare Minnesotans one month of exposure to such extreme heat and its associated adverse health outcomes each year.

Extreme heat is already one of the deadliest weather hazards in the United States<sup>4</sup>. The individuals most harmed by extreme heat include residents of low-income communities with fewer resources to stay safe in the face of more frequent extreme heat days, those with preexisting health conditions, the elderly and very young, and those with high levels of exposure to extreme heat such as outdoor workers. Residents who are not white, have low or fixed incomes, experience homelessness, and those in other historically disenfranchised groups are particularly at risk of heat-related illness and injury for a multitude of reasons,

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<sup>2</sup> <https://www.ucsusa.org/resources/killer-heat-united-states-0>

<sup>3</sup> The heat index is a metric that combines heat and humidity and is used by the National Weather Service to issue heat warnings. <https://www.weather.gov/safety/heat-index>

<sup>4</sup> <https://www.weather.gov/hazstat/>

including lack of access to air-conditioning or transportation to cooling centers and residence in the hottest parts of cities. In rural Minnesota, the prevalence of outdoor labor and lower access to and usage of air-conditioning in rural settings may elevate these risks for some rural populations.

Extreme heat is just one climate impact that is projected to significantly and adversely affect Minnesota. Others of note include increased exposure to flooding<sup>5</sup> and increased risk of tick-borne diseases<sup>6</sup>.

**The severity of projected climate impacts underscores the urgency of ensuring Minnesota’s climate policy is in line with the level of emission reduction science tells us we need to achieve in order to avert the worst consequences of climate change.** Reducing greenhouse gas emissions 80 percent by 2050 simply is not enough to protect Minnesotans. Not only must the targets be strengthened to be in line with 45 percent carbon dioxide emission reductions by 2030 and net-zero carbon dioxide emissions by 2050, but it is critical to include accountability measures to ensure the state meets its targets.

**Updated targets, even when it means the state will be further behind, will be an important signal to industry, utilities, and state actors to decarbonize quickly and steeply, which will reduce the economic and public health costs Minnesota faces due to climate change.** We look forward to continued work with the Rep. Acomb and the Committee to ensure Minnesota’s climate and energy policy centers science and equity.

## **Conclusion**

[Current climate science](#) tells us that achieving nearly 50 percent carbon dioxide (CO<sub>2</sub>) emission reductions in the next decade and net zero global CO<sub>2</sub> emissions economy-wide by mid-century is critical to averting the worst impacts of climate change. Climate change already threatens Minnesota and its economy through, for example, more frequent flooding, rising temperatures, and shifts in the animal and plant patterns of the North Woods. [Climate impacts projections](#) anticipate significant agricultural and public health impacts in Minnesota. Aggressively pursuing carbon-free power and transportation sectors will be key toward building a zero-emissions economy.

Transportation, electricity generation, and agriculture, forestry, and land use – accounted for over 70% of total Minnesota emissions in 2018<sup>7</sup>. The policy priorities described above will drive emissions reduction across these sectors. Reducing petroleum use in transportation through more efficient cars, a rapid transition to electric vehicles and the use of low carbon biofuels will cut emissions, save Minnesotans money, and reduce petroleum imports from out of state. Supporting emissions reductions across the transportation fuel supply chain will help farmers invest in practices that reduce emissions and benefit soil health and help biorefineries invest in technology to cut fossil use and emissions.

The economics are clear –the [falling costs of renewable energy](#) make [wind and solar the most cost-effective electricity sources](#) in Minnesota today, combined with energy efficiency, which lowers consumer electricity bills. Soon, it will be more expensive to operate existing fossil fuel power plants than it will be to build new solar or wind farms. Coal and natural gas are

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<sup>5</sup> <https://agupubs.onlinelibrary.wiley.com/doi/full/10.1029/2020EF001778>

<sup>6</sup> <https://link.springer.com/article/10.1007/s10393-014-0979-y>

<sup>7</sup> [Minnesota Pollution Control Agency. 2021. Greenhouse gas emissions inventory 2005-2018.](#)

[increasingly uneconomic](#), and contribute to other societal costs, public health effects, and negative economic impacts on Minnesota's agriculture, forestry, and recreational industries due to their role in causing climate change. Increasing efficiency and achieving 100% carbon-free electricity by 2050 would provide significant economic and public health benefits for Minnesota, as well as provide a foundation of clean, renewable electricity to decarbonize other sectors.

Clean energy investments also lower the cost of climate change and improve public health by reducing pollution from burning fossil fuels. Prioritizing renewable energy over fossil fuels is smart for the state, its workers, and its ratepayers.

We commend Chair Long for his strong leadership on bold policies that meets the moment we are facing and helps address the climate crisis, the economic recession, public health threats, and racial injustices and socioeconomic disparities.

Sincerely,

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