Minnesota State Senate Transportation Committee, March 4, 2024
Clean Transportation Standard (CTS) testimony

Chair Morrison and Members of the Committee,

Thank you for hearing my testimony today in regards to the Clean Transportation Standard (CTS) currently under consideration. My name is Colin Cureton and I work as the Director of Commercialization, Adoption, and Scaling for the University of Minnesota Forever Green Initiative (FGI), and I also served on the State's Clean Transportation Standard Work Group. My comments today relate to continuous living cover, or CLC, crops under development by Forever Green, especially winter camelina and domesticated pennycress, and their relationship to the CTS. These two crops are also often referred to as "winter oilseeds" or "cash cover crops."

To review, our current agricultural system in the Upper Midwest is dominated by a few Spring annual crops that leave millions of acres of bare soil for much of the year resulting in soil erosion, nutrient leaching into groundwater and surface water, carbon emissions, and impacts on biodiversity. Forever Green is developing over 15 new, profitable perennial and winter annual crops that can significantly improve the diversity, sustainability, and profitability of Midwestern agriculture. Broadly speaking, CLC crops are tools to advance soil health, climate-smart agriculture, and/or regenerative agriculture.

Winter camelina and pennycress could significantly enhance agriculture in Minnesota by growing a productive third crop from Fall through late Spring, without displacing current crops. The winter oilseeds deliver all the benefits of traditional cover crops—but, unlike traditional cover crops, they provide an economic "pull" because farmers can harvest and market these crops for fuel, feed, food, and industrial uses. Along the way, they protect water quality, reduce soil erosion, provide significant pollinator habitat, and reduce emissions. Forever Green is a global leader in developing the genetics, agronomy, environmental sciences, and commercialization of these winter oilseeds.

Forever Green has been in robust cross-sector discussion for several years regarding the scaling potential of winter camelina and pennycress as low-carbon fuel feedstocks, including with the world's largest commodity processors and fuels companies.These private-sector partners are calling for as much low-carbon vegetable oil as they can get their hands on. They are responding, in part, to the many commitments airlines like Delta, American, and United have made to source large amounts of sustainable aviation fuel (SAF) in coming years, as well as regulatory shifts to drive the carbon intensity of the fuels sector down like the Inflation Reduction Ac, low-carbon fuels standards (LCFS) in three West Coast states. Recently, Cargill provided Forever Green a $2.5 million grant to advance our research on the winter oilseeds, signaling strong industry interest.

For reasons I won't belabor, fuels produced from the winter oilseeds result in a significantly lower carbon intensity (CI) score than many other agriculturally-derived liquid fuels due to greatly reduced indirect land use change (ILUC). Their low CI scores make these fuels and

feedstocks highly competitive, desirable, and more valuable under a CTS. In other words, the CTS creates significant market demand for these new "cash cover crops." In fact, I am confident **a CTS would be the single largest policy lever to advance cover crop adoption in Minnesota's history, making farmers and rural communities significant money along the way.**

The economic potential of the winter oilseeds should not be understated. Ten percent adoption of the winter oilseeds in the Midwest would produce a rough raw commodity value of $1.4B annually produced on over 5 million acres. Forever Green's goal is not just to develop these crops here in Minnesota, but to retain as much of that value and impact here as possible.

In short, this CTS policy would be a demand driver for the development of new industries and markets for novel low-carbon feedstocks that would be great for Minnesota farmers, rural communities, and our natural resources. The CTS as written would provide modest additional incentive to build industries around new CLC crops here in Minnesota and value the significant co-benefits of these crops for water quality and other ecosystem services beyond carbon intensity.

Thank you for your thoughtful consideration of the CTS, its potential to advance continuous living cover and regenerative agriculture, and a more climate-resilient future for Minnesota.

Growth Energy™
Expanding America's Bioeconomy

March 4, 2024

Honorable D. Scott Dibble
Chair
Transportation Committee
Minnesota State Senate
3107 Minnesota Senate Building
St. Paul, MN 55155

Honorable John R. Jasinski
Ranking Member
Transportation Committee
Minnesota State Senate
2227 Minnesota Senate Building
St. Paul, MN 55155

RE: SF 2584 – Clean Transportation Standard Act establishment and appropriation

Dear Chair Dibble and Ranking Member Jasinski:

Thank you for the opportunity to provide written testimony on SF 2584, which would establish a clean fuel standard for the state of Minnesota. Growth Energy is the world's largest association of biofuel producers representing 97 U.S. plants that produce more than nine billion gallons of cleaner-burning, renewable fuel annually; 117 businesses associated with the production process; and tens of thousands of biofuel supporters across the country. Minnesota is home to 19 bioethanol production plants, with a collective annual capacity of more than 1.4 billion gallons from 500 million bushels of corn. Our ultimate objective is to work together to bring better and more affordable choices at the fuel pump, improve air quality, and protect the environment for future generations.

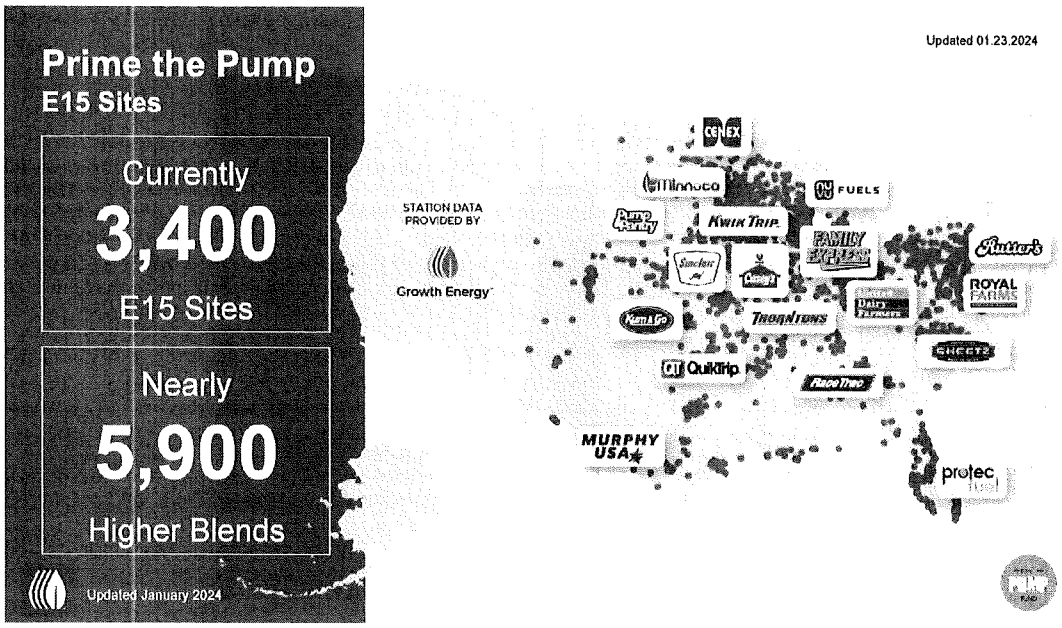
Growth Energy strongly advocates for the role low-carbon biofuels and higher biofuel blends can play in Minnesota's efforts to reduce the carbon intensity of transportation fuels used in the state. A primary solution for decarbonizing the liquid transportation fuel supply is the promotion of additional use of bioethanol. Bioethanol has a proven history of contributing to greenhouse gas (GHG) reductions in an existing low carbon fuel standard (LCFS): according to the Transportation Energy Institute, bioethanol is responsible for 31 percent of GHG reductions in California's Low Carbon Fuel Standard (LCFS), the largest percentage among fuel sources.[1]

According to recent data from Environmental Health and Engineering, today's bioethanol reduces GHGs by nearly 50 percent compared to gasoline and can provide even further GHG reductions with additional readily available technologies.[2]

Today, nearly all gasoline in Minnesota – and across the United States – is blended with 10 percent ethanol. E15, a blend consisting of 15 percent bioethanol, has been approved for use by

[1] https://www.transportationenergy.org/wp-content/uploads/2023/07/Decarbonizing-Combustion-Vehicles_FINAL.pdf
[2] https://iopscience.iop.org/article/10.1088/1748-9326/abde08/pdf

the U.S. Environmental Protection Agency (EPA) in all passenger vehicles model year 2001 and newer. This accounts for more than 96 percent of the vehicles on the road today, and is now sold at more than 3,400 locations in 31 states. Minnesota currently has 460 fuel retail sites offering E15.[3]



Last summer E15 was sold at a nationwide average of 15 cents less per gallon where available and in some Minnesota locations, we saw E15 selling for as much as 33 cents less per gallon than regular gasoline – that is meaningful consumer cost-savings.[4] Minnesota is already on its way to embracing the environmental and economic benefits of E15. In 2021, Minnesota had the highest bioethanol blend rate, 12.6 percent, in the country.[5]

Beyond its capacity to deliver GHG reductions, E15 provides significant improvements in air quality. Research conducted by the University of California, Riverside found that the use of more bioethanol and bioethanol-blended fuel reduces emissions including harmful particulates and air toxics such as carbon monoxide and benzene.[6] This study illustrates the vital role that higher ethanol blends play in protecting our air, our climate, and our health.

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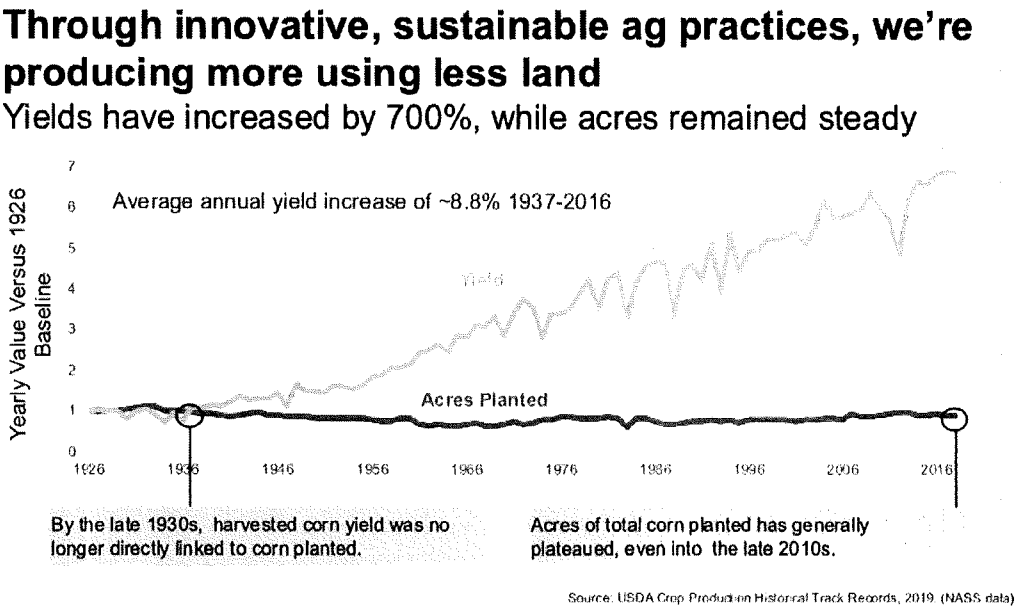
[3] https://getbiofuel.com/fuelfinder/
[4] https://growthenergy.org/2023/09/19/summer-savings-with-e15/
[5] https://www.dtnpf.com/agriculture/web/ag/news/business-inputs/article/2023/01/26/dtn-ranks-50-states-ethanol-blending
[6] University of California Riverside: Comparison of Exhaust Emissions Between E10 CaRFG and Splash Blended E15 | California Air Resources Board and https://fixourfuel.com/wp-content/uploads/2018/04/UC-Riverside-Study.pdf

Given Minnesota's status as a leader in bioethanol production and utilization, we would like to take this opportunity to raise several concerns with SF 2584. Notably, the Argonne National Laboratory's Greenhouse Gases, Regulated Emissions, and Energy Use in Transportation (GREET) model uses the most up to date data and science to calculate fuels' lifecycle GHG emissions. Modifying GREET for a clean transportation standard in Minnesota risks ignoring important GHG reductions among various fuel pathways. This could result in a clean transportation standard that contradicts the legislation's stated commitment to fuel and feedstock neutrality.

Additionally, among SF 2584's text is an unfair land use change (LUC) penalty for crop-based biofuels, namely that the standard "include a non-zero emissions factor reflecting indirect land use change for cropland-derived fuels, not less than the emissions factor derived from the Argonne GREET model." We believe concerns about the use of crop-based biofuels and their impact on land use are misplaced and unfounded. These fears have been largely based on outdated and flawed data. A review of more recent science over the last five years indicates a decreasing trend in land use values, with the newer data indicating LUC values closer to 4 gCO2e/MJ, far less than the outdated and erroneously inflated LUC value used in other states' standards. Minnesota's modeling and LUC value should reflect the latest science that better addresses innovation and increasing yields in agriculture.[7]



We applaud the Minnesota Legislature for their efforts and consideration of methods to reduce GHG emissions in the state. SF 2584 contains provisions that will aid the Transportation

[7] Footnote #2

Commissioner in implementing a fuel-neutral standard that, among other requirements, "creates broad rural and urban economic development." Given Minnesota's leadership in agriculture and biofuel production, if implemented properly, we believe this program could provide significant benefits for in-state bioethanol production. Yet we remain concerned about the lack of precision regarding the clean transportation standard's implementation. Stakeholders representing a broad array of transportation-related and environmental groups convened over several months in 2023 for the Clean Transportation Standard Working Group. The group's final report demonstrated the complexities surrounding the implementation of a clean transportation standard. We believe the committee should consider the realities of this complexity and the diverse interests of the advisory committee prescribed in SF 2584. We recommend a stronger commitment to ensure a truly technology-neutral standard as well as stakeholder engagement in the promulgation and implementation of the state's clean transportation standard.

The consideration of biofuels, particularly bioethanol, is a crucial component to a clean fuel standard, one that can have an immediate impact on carbon emissions reductions as future decarbonization technologies are developed. We hope the committee recognizes the role bioethanol can play in reducing GHGs, providing a more cost-effective option for consumers, and helping Minnesota meet its ambitious decarbonization goals. We look forward to further engagement with the committee and are available to answer any technical questions that may arise.

Sincerely,

Chris Bliley
Senior Vice President of Regulatory Affairs
Growth Energy

Cargill

March 4, 2024

Honorable D. Scott Dibble
Chair
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3107 Minnesota Senate Building
St. Paul, MN 55155

Honorable John R. Jasinski
Ranking Member
Transportation Committee
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2227 Minnesota Senate Building
St. Paul, MN 55155

Re: SF 2584 Clean Transportation Standard

Dear Chair Dibble, Ranking Member Jasinski, and Members of the Committee:

We are writing to request your support for Senate File 2584, as amended, a bill which would create a Clean Transportation Standard (CTS) in Minnesota. This bill reflects the recommendations of the Clean Transportation Work Group as included in its report submitted to the Legislature on February 1. As a member of that Work Group, I applaud the deputy commissioners of the Departments of Agriculture, Transportation, Commerce, and the Pollution Control Agency for leading a comprehensive and inclusive process.

While we endorse the Work Group process and resulting recommendations, a CTS is not a new concept in Minnesota. In 2019, the Great Plains Institute started the conversation by creating the Midwestern Clean Fuels Initiative which included a group of diverse industry and environmental stakeholders. In 2020, the Governor's Council on Biofuels developed a report which stemmed from nine months of stakeholder meetings and input. Finally, in 2022, Governor Walz furthered this effort by directing the departments of Agriculture and Transportation to create a stakeholder process to identify goals and opportunities which would inform development of a CTS in Minnesota.

This bill creates a clean fuel standard that recognizes the critical role agriculture must play through regenerative agriculture practices and their benefits of improved soil health and water quality which, in turn, reduces the carbon intensity (CI) of liquid transportation fuels in the state. The Work Group report, among its "areas of strongest agreement," stated that climate smart agriculture demonstrating viable GHG reductions should be eligible to be factored into CI values. Minnesota could be the first farm belt state to pass a CTS and, in doing so, lead the nation by setting meaningful contributions to reduced fuel CI values through climate smart agriculture practices.

Cargill believes agriculture is an immensely powerful tool among various options to reduce CI values of fuels and it's one reason we are partnering closely with farmers in support of lower carbon food, fuel, fiber and feed. Regenerative agriculture practices as part of a fuels feedstock supply chain provide the most practical and impactful solution at the scale needed to meet nearby liquid fuel demand while also achieving lower CI levels required under a Minnesota CTS Program.

We appreciate this opportunity to provide the Committee with our thoughts and analysis regarding a potential CTS in Minnesota. We stand ready to be a resource and partner with the state in this effort into the future.

Sincerely,

Marty Muenzmaier
Renewable Fuels Sustainability Lead
Cargill, Agricultural Supply Chain North America

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March 4th, 2024

Mr. Chair and members,

On behalf of Friends of the Mississippi River, thank you for the opportunity to provide written testimony in support of Senator Dibble's Clean Transportation Standard legislation (SF 2584 - A10 amendment).

The Clean Transportation Standard bill encourages cleaner and more affordable transportation options, reduces our reliance on petroleum and ethanol in our cars and trucks, promotes equitable vehicle electrification, and creates new pathways for millions of acres of regenerative ag practices statewide.

How a Clean Transportation Standard Works

SF 2584, as amended, creates a Clean Transportation Standard (CTS) that will reduce the carbon intensity of Minnesota's transportation fuels by at least 25% by 2030 and 75% by 2040 — with a goal of achieving 100% by 2050.

Under a clean transportation standard, fuel sources with lower lifecycle carbon emissions can generate credits. In contrast, more carbon-intensive fuels generate deficits that can be offset by purchasing credits.

The predictable nature of the declining carbon intensity standard sends a clear policy signal to the market. It allows entities to strategically invest in the lowest-carbon fuel options (including electricity). Meanwhile, the CTS directs a portion of utility-generated credit revenue toward investments in electric vehicle (EV) infrastructure and rebates to help accelerate equitable EV adoption across Minnesota.

Minnesota's GHG Emissions Profile

Minnesota's recently released Climate Action Framework identifies transportation as Minnesota's top source of greenhouse gases. It emphasizes the potential to use carbon-free and low-carbon fuels to accelerate the decarbonization of the transportation sector.

While transportation is Minnesota's top greenhouse gas (GHG) emissions source, agriculture is a close second. Agricultural sector emissions are increasing. That's why FMR strongly supports a CTS

that accelerates transportation sector emissions reductions while reducing cropland emissions and enhancing landscape diversity (an essential step in restoring water quality and soil health).

In fact, the CTS may be one of our most potent policy levers for achieving several of our top environmental and natural resource priorities.

The Benefits of a Clean Transportation Standard

1. **Reducing emissions for our two largest emitting sectors**. Minnesota must have a sound strategy for reducing emissions in the transportation & agricultural sectors. Reducing overall GHG emissions is essential to avoid climate change's most extreme impacts, which have undeniable consequences for water quality and aquatic life.

   For example, a 2017 study in Science Magazine anticipated that nitrogen loading in the upper Mississippi River basin would increase by about 24% during the 21st century due to climate-change-induced precipitation changes. Given the existing 45% nitrogen reduction goals in Minnesota's Nutrient Reduction Strategy, it is clear that failing to achieve our climate goals will make an already-daunting water quality challenge almost impossible to overcome.

2. **Funding our electric vehicle future**: Based on ICF's analysis for the MN CTS Work Group (on which I served) and applying reasonable assumptions for credit prices, the CTS could provide between $133-267 million per year for EV infrastructure and rebates.[1]

   This funding stream isn't subject to swings in the state budget. It will provide the resources necessary to (a) allow more Minnesotans to access EVs and (b) build out the infrastructure necessary to fully integrate EVs into our economy by 2050. No other policy we know of will produce this massive and immediate investment in the EV transition.

3. **Reducing our reliance on gasoline and ethanol consumption**: Modeling by the Minnesota Clean Transportation Standard Work Group found that by 2050, the CTS will reduce our overreliance on gasoline and ethanol in the state. This is an essential strategy for reducing our GHG emissions.

4. **Reducing legacy vehicle emissions:** The EV transition won't happen overnight. Internal combustion engines will be on the road for decades to come. A CTS is a mechanism for lowering the carbon intensity of traditional fuel vehicles that will never electrify. Addressing emissions from these vehicles is essential to achieving our climate goals as we electrify.

5. **Improving water quality, soil health and habitat.** The CTS includes powerful incentives to enhance water quality and soil health by getting regenerative ag practices and innovative

[1] Assumptions: *80% of cars charge at home and a credit price ranging from $100 - $200.*

Forever Green crops into millions of cropland acres statewide. How?

a. **Regenerative agriculture & soil health practices**: The program creates clear incentives for biofuel producers to adopt soil health practices and so-called 'climate smart' conservation practices on croplands used for biofuel production. These regenerative ag practices, including no-till, cover crops, and optimum nutrient management, have the potential to reduce on-farm emissions and are a proven strategy for significantly reducing farm runoff.

b. **Continuous Living Cover (CLC) cropping systems**: The legislation also includes a credit bonus for fuels produced with "continuous living cover" (CLC) cropping systems. These CLC crops, including Camelia and Penycress, are under development at the University of Minnesota's Forever Green Initiative and produce ultra-low-emission biofuels. These crops also help absorb excess nutrients and anchor the soil, leading to fewer pollutants seeping into Minnesota's waters. As we found in our 2023 analysis "Putting Down Roots," these winter oilseeds could realistically be planted on 5.5 million acres of MN cropland by 2050, dramatically improving soil, health, water quality, habits and farmer's bottom lines.

By creating powerful incentives for regenerative agriculture and CLC cropping systems on the millions of acres of Minnesota croplands, the CTS represents a once-in-a-generation opportunity to transform agricultural conservation and water quality statewide.

6. **Improving air quality and public health**: When it comes to public health, nothing is more important than the air in our lungs. That's why the CTS bill requires the rules to ensure that the CTS "improves air quality and public health, targeting communities that bear a disproportionate health burden from pollution from transportation fuels."

   The CTS policy will generate public health benefits due to reduced tailpipe emissions, particularly in communities disproportionately impacted by transportation pollution. According to research by the Holloway Group at the University of Wisconsin, a CTS could generate up to $35 million in annual health benefits for Minnesota.

7. **Ensuring equitable electrification**: The bill requires that the CTS "supports equitable transportation electrification powered primarily with low-carbon and carbon-free electricity that benefits all communities."

   SF 2584 specifies that at least 60% of the credit revenue generated by a utility from residential electric vehicle charging must be invested in transportation electrification for the primary benefit of rural areas and environmental justice areas. This measure helps ensure equitable electrification for every neighborhood in Minnesota.

8. **A boost to the green economy:** The CTS bill also invests in green jobs for all Minnesotans. This bill will create net positive economic impacts due to increased availability of lower-cost, lower-carbon fuels, investments in biofuels and electric vehicle infrastructure, and increased electricity sales. According to modeling by ICF, a Minnesota CTS could contribute over $197 million to Minnesota's gross domestic product and generate an annual average of 1,500 jobs and $95 million in labor income.

In short, a CTS will significantly reduce the state's two most significant sources of greenhouse gas emissions (transportation and agriculture) while helping restore water quality and soil health throughout the Mississippi River watershed.

For these reasons, I urge you to support Sen. Dibble's SF 2584 as amended.

Thank you.

Trevor Russell
Water Program Director
Friends of the Mississippi River

CONSERVATION MINNESOTA

March 4, 2024

Chair Dibble and Members of the Senate Transportation Committee:

Conservation Minnesota strongly supports SF2584 (Dibble), the Clean Transportation Standard. As we work to achieve our climate goals, reducing harmful emissions in all sectors of Minnesota's economy requires bold action. Adopting a CTS will ensure that our transportation industry keeps up with the necessary changes we need to achieve our climate goals.

Currently, the transportation sector produces about one-quarter of the greenhouse gas emissions in Minnesota, more than any other sector in the state. This bill incentivizes cleaner fuels by measuring their carbon-intensity. This standard will change over time, continuously rewarding cleaner fuel types and phasing out others like traditional liquid fuels. Cleaner fuels like electricity will earn credits that can be put towards investments in infrastructure to improve access to cleaner transportation options in communities that otherwise would not have access across the state.

Minnesota's proposed Clean Transportation Standard is more innovative than any other in the nation to date by including incentives for climate-smart agricultural practices. Agriculture is the number two sector for emissions, right behind transportation, making this bill unique in its ability to tackle both. Cover cropping, reducing tillage, and nitrogen management are just a few of the practices this act will incentivize.

The Clean Transportation Standard comes out of many years of stakeholder work including the Governor's Clean Transportation Working Group. We believe this bill provides us with a path forward towards eliminating emissions in our transportation sector, expanding access to electric vehicles, and creating a cleaner Minnesota.

Much like the 100% by 2040 plan passed last session, the CTS charts a bold path to a necessary goal. The Clean Transportation Standard provides us with cleaner path forward that delivers important economic and environmental benefits. We kindly ask that you support this bill as a critical step in achieving our climate goals.

Sincerely,
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MINNESOTA FOREST RESOURCES COUNCIL

Testimony to the Senate Transportation Committee
March 4, 2024

I am Eric Schenck, executive director of the Minnesota Forest Resources Council. The Minnesota Forest Resources Council was legislatively established through the Sustainable Forest Resource Act (MFRC, MN Stat. 89A) to develop policy recommendations for the Governor and Minnesota State Legislature that promote sustainable management, use, and protection of the Minnesota's forest resources. This testimony is supported by MFRC resolution 2022-1 adopted by the Council on January 18, 2022.

In 2016, Washington state made national news when an Alaska Airlines commercial jet flew from Seattle to Washington, DC, using a jet-fuel blend containing 20 percent wood-based biofuel from Pacific Northwest forest residuals. This dramatic achievement demonstrates the potential for Minnesota to also lower greenhouse gas emissions in our state by supporting transportation policies that support wood-based biofuels.

The Minnesota Forest Resources Council urges the committee to 1) include "woody biomass" as an eligible biofuel feedstock within Minnesota's Clean Transportation Standard (CTS) policy and 2) support, through credit generation or other financial means, sustainable forest management practices that further lower life-cycle greenhouse gas emissions associated with woody biomass feedstocks. These inclusions help ensure that the CTS capitalizes on the environmental and economic benefits afforded by engagement of Minnesota's sustainable forestry sector.

These two recommendations directly support the Clean Transportation Standard (CTS) policy objective to reduce carbon emissions from Minnesota's transportation sector through a transition to low carbon-emitting fuels. Woody biomass as a biofuel source offers an advantage to this objective due to its low carbon intensity (CI) score. For example, diesel fuel refined from fossil fuel petroleum has a CI of 90, biodiesel made from soybeans has a CI of 58, while renewable diesel derived from woody biomass has a CI of 8. Therefore, transitioning to woody biomass biofuels offers a rapid pathway to reducing transportation sector emissions.

Minnesota has a sustainable supply of woody biomass that is vast, underutilized, and rapidly increasing on private, public, and urban forestlands. This increase is partially attributed to rising tree mortality associated with climate influenced weather, invasive insects, and tree disease. The incorporation of woody biomass in CTS policy enables market development for this underutilized wood to deliver not yet realized economic benefits to communities while reducing transportation sector emissions. Moreover, CTS support and incentives for sustainable forest management practices can create new financial and management opportunities to adaptively manage Minnesota forests. This additional support of proactive measures to increase forest resilience amid climate changes can fortify Minnesota's already robust sustainable forest management framework**.

Today, innovative technologies are rapidly transforming woody biomass into an economically viable feedstock for renewable and low-carbon diesel, sustainable aviation fuel, and other biofuels. The inclusion of Minnesota's sustainable forestry sector in CTS policy will spur needed innovation and participation in emerging markets—both of which are important strategies to achieving the environmental, economic, and societal benefits of climate action sought by Minnesota's Climate Action Framework.

Thank you for considering this testimony. I am glad to answer any questions the Committee may have.

Eric Schenck, MFRC Executive Director, Phone: 651-247-1367 Email: eschenck@state.mn.us Website: https://mn.gov/frc/

*** Minnesota uses a sustainable forest management framework that includes climate change considerations in forest planning and management decisions. The Minnesota Forest Resources Council (MFRC) also is developing methodology to track carbon sequestration , carbon storage, and carbon emissions more accurately within the state's forestry sector.*

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March 4, 2023

Honorable Scott Dibble
Chairman, Senate Transportation Committee
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Dear Chair Dibble, Vice Chair Morrison, Ranking Minority Member Jasinski, and members of the Senate Transportation Committee,

I am writing to you on behalf of Gevo, Inc. (Gevo) to offer our support for SF 2584, the Minnesota Clean Transportation Standard (CTS). We commend Senator Dibble for sponsoring the bill and look forward to advancing this important and beneficial policy.

Gevo is a Sustainable Aviation Fuel (SAF) producer that turns corn ethanol into jet fuel. Gevo's mission is to transform renewable energy and carbon into energy-dense liquid hydrocarbons. These liquid hydrocarbons can be used for drop-in transportation fuels such as gasoline, jet fuel and diesel fuel, that when burned have potential to yield net-zero greenhouse gas emissions when measured across the full life cycle of the products. Gevo uses low-carbon renewable resource-based carbohydrates as raw materials and is in an advanced state of developing renewable electricity and renewable natural gas for use in production processes, resulting in low-carbon fuels with substantially reduced carbon intensity (CI). Our current locations include a decarbonized ethanol facility in Luverne, MN. We use this plant as a demonstration facility to highlight our Net-Zero model to customers and advocate for climate smart policies in fuel and agricultural production.

This legislation is an important step for Minnesota to transform the carbon and pollution emissions from the transportation sector. This policy has been incredibly successful in other jurisdictions and Gevo is excited for a market driving demand for our SAF to begin in the Midwest where we will be creating fuel. We specifically support the ability for SAF to opt-in to the program as credit generators, as expressly included in SF 2584. This type of policy is an ideal mechanism to decarbonize aviation fuel, one of the hardest to electrify sectors within transportation.

Because of programs like the Minnesota CTS, Gevo is moving forward with our Net-Zero platform of SAF production. Gevo is in the process of developing our first commercial-scale production facility called "Net-Zero 1" in Lake Preston, South Dakota. This plant is expected to annually produce 65 million gallons of low CI hydrocarbons, including SAF, renewable diesel, and naphtha. We call this plant Net-Zero 1 because of our efforts to

de-fossilize and de-carbonize the inputs and plant emissions to the greatest extent possible. To achieve a net-zero carbon plant, Gevo is committed to reducing fossil emissions by using renewable electricity from a 100-megawatt wind farm, producing green hydrogen on site, and using renewable natural gas from dairy methane digesters. The low carbon fuel standards in California, Oregon, British Columbia, and Washington are what is driving these carbon reductions by creating a market incentive to reduce the fossil inputs for our production. So not only does a Minnesota CTS drive demand for renewable fuels, but it incentivizes the production facilities to de-fossilize.

In addition to de-fossilizing our production process, Gevo is focused on reducing the carbon intensity of our feedstock. This is done through working directly with farmers to incentivize climate smart agricultural practices that reduce their carbon emissions. This includes low- and no-till practices, cover-crops, and reducing synthetic fertilizer application.

The Minnesota CTS as brought forward in SF 2584 is unique among similar policies because it will truly measure the entire life cycle of renewable fuels. Instead of providing default carbon intensities for feedstocks used in the production of renewable fuels, this legislation allows for direct measurement of the feedstock we purchase within the Department of Energy Argonne National Laboratory's GREET model. Gevo was selected for a $30 million USDA grant to develop and implement a data collection tool for on-field carbon reductions. This process will be vital to proving the environmental impacts farmers have when they employ climate smart practices that sequester carbon in the soil, reduce their synthetic fertilizer usage, or simply use high blends of biodiesel in their diesel equipment.

While Midwest biofuel producers and production agriculture have benefited from low-carbon transportation markets, it is time for the Midwest to build a program that counts all the carbon in the production of feedstock. By creating a carbon market that benefits farmers for the carbon sequestration they do on an annual basis with climate smart ag practices, Minnesota should see improved soil health, water quality, and farm income. With climate smart ag practices built into the life cycle analysis (LCA) of the CTS, farmers will be able to command a premium for their low-CI feedstock and directly benefit from the renewable fuels they are supplying the inputs for.

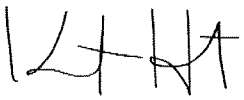
We certainly understand this is not a perfect bill. As a renewable natural gas producer, we are concerned with the provision that will not count the carbon reduction of methane captured from new or expanded dairy and confinement operations. New dairies and animal feeding facilities will be built in the future and their growth is driven by consumer demand for milk and protein, not for the renewable natural gas they could produce. This provision will reduce the capture of methane, an extremely potent greenhouse gas from dairies and feedlots that surely will be built in the future. Simply avoiding methane emissions is reason enough to remove this provision. Additionally, when you add the fossil

carbon reductions by replacing natural gas with RNG, it is doubly beneficial. Finally, this provision is not consistent with the technology neutral approach the entire bill provides.

The Clean Transportation Standard differs from other carbon accounting programs like cap and trade as the CTS requires the direct use of renewable fuels. This translates into a carbon reduction locally but also improves air quality. In aviation fuel, this provides a direct benefit to residential areas around airports. The SAF Gevo will produce is lower in dangerous aromatics, Sulphur, and particulate matter.

Thank you for the opportunity to support this legislation and Gevo encourages SF 2584 be approved by this committee for further legislative action. A Midwest Clean Transportation Standard will be the first of its kind and will provide a new outlet for renewable fuels. This would give Minnesota consumers new low-carbon options and provide biofuel producers a significant opportunity for keeping fuel local.

Respectfully,



Kent Hartwig
Director of State Government Affairs

gevo

Gevo, Inc.

The Nature Conservancy
Protecting nature. Preserving life.™

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March 4, 2024

Chair D. Scott Dibble
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St. Paul, MN 55155

Dear Chair Dibble and committee members,

The Nature Conservancy (TNC) appreciates the opportunity to comment on SF2584, the Clean Transportation Standard Act. While we are generally supportive of a Clean Fuel Transportation Standard (CTS) for Minnesota, it is critical that such a policy emphasizes protection of our natural resources while mitigating carbon emissions in the transportation sector. Due to the dual threat of climate change and biodiversity loss, we are invested in ensuring a CTS adequately incorporates considerations and promotes positive outcomes for carbon, biodiversity, water, food security, and equity. Without adequate environmental integrity in the production of clean fuels, there is a significant risk of unintended impacts on water quality, water availability, habitat, biodiversity and ecosystem services.

Therefore, **we strongly recommend the state develop an Environmental Integrity (EI) score to be implemented in conjunction with a Carbon Intensity (CI) score to account for CTS impacts to the environment alongside carbon intensity**. Current CI monitoring policies and procedures do not yet effectively protect natural resources. An EI score should incentivize the adoption of regenerative agriculture practices, including, for example: no or reduced tillage, cover crops, advanced nutrient management, diversified crop rotations, and edge of field practices. These practices provide environmental benefits independent of any effect they may have on carbon. A CTS should simultaneously incentivize fuels with the lowest CI scores and the highest EI scores, which should be measured independently and be traceable to the feedstock source.

A key priority of TNC's in the development of a CTS is preventing unintended consequences of land use change. Land use changes, and the resulting greenhouse gas emissions, are difficult to accurately and consistently estimate in life-cycle assessments. However, for biofuels to be truly sustainable, they must be produced without deforestation, wetland loss, or grassland conversion. Eligibility for credits should be limited to feedstocks produced on lands with a documented cropping history prior to an agreed upon date, at a minimum no later than 2018 to be consistent with USDA Sodsaver and Conservation Reserve Program rules.

Finally, TNC recommends a CTS commit to Environmental Justice. Environment, equity, and health are all interconnected. With proper attention to identifying ecosystem services, benefits, and impacts while also mitigating harmful impacts to our water, soil, air, wildlife, and beyond, the CTS can support health

equity for marginalized communities most impacted by environmental degradation.

We welcome the opportunity to be a resource on continued discussion. Thank you for your consideration.

Sincerely,

Richard L. Biske
Director of Water and Land Protection
The Nature Conservancy MN-ND-SD

March 4, 2024

Senate Transportation Committee
Senate Building
95 University Ave
St. Paul, MN

The Coalition for Renewable Natural Gas (RNG Coalition) writes in **support of SF 2584 <u>if amended</u> to remove subdivision 7, subsection 2(ii)** from the bill because it discourages effective modes of methane reduction by prohibiting credit generation from renewable natural gas (RNG; also known as biomethane) from new or expanded farms, which will hinder instead of help the state achieve its climate goals.

RNG Coalition represents and provides public policy advocacy and education for the renewable gas industry across North America. Our organization supports the development and use of renewable natural gas, biogas, clean hydrogen, and renewable CO_2 as decarbonization solutions for various sectors of the economy. We comprise over 390 members—cities, counties, airports, ports, municipalities, colleges, universities, and leading companies operating in each sector of the industry—including those who capture, clean and condition greater than 95% of all RNG in the United States and Canada.

RNG Coalition supports the adoption of a Clean Transportation Standard, also known as a Clean Fuels Standard (CFS). Full scale decarbonization will require near- and mid-term solutions in addition to electrification to displace fossil fuels, and a CFS is the most practical, cost-effective solution to incent a robust portfolio of low carbon fuels. A CFS strongly rewards deployment of clean fuels—increasing fuel diversity and consumer choice, and have not been shown to have a significant price impact on conventional fuel prices for consumers.[1] A CFS also supports public health through air pollutant reduction, especially in vulnerable communities that reside along transportation corridors, by displacing fossil fuels and reducing emissions of both toxic diesel particulate matter and smog-forming oxides of nitrogen, which could reduce air pollution deaths and avoid up to $87 billion in healthcare costs per year.[2]

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[1] "Low Carbon Fuels Standards Market Impacts and Evidence for Retail Fuel Price Effects", Bates White Economic Consulting, April 2022.
https://static1.squarespace.com/static/5b57ab49f407b4a7ffa44ffa/t/627ac05b10c1ae023912ca34/1652212920030/Bates+White+LCFC+Report+Updated+2022.04.21.pdf

[2] Murphy et. Al, *Modeling Expected Air Quality Impacts of Oregon's Proposed Expanded Clean Fuels Program.*
https://escholarship.org/content/qt6pz348mc/qt6pz348mc_noSplash_35bd521866d4290a1a8755f4af0d281a.pdf

While we support SF 2584, we **strongly recommend removing** the provision prohibiting credit generation from RNG produced from any new or expanded agricultural livestock operation specified under subdivision 7, subsection 2(ii). Animal agriculture is the largest contributor of methane emissions in Minnesota, specifically from manure management. This prohibition will negatively effect on-farm methane emission reduction efforts and will only serve to eliminate an effective mode of methane reduction, in direct contradiction to both the state's GHG reduction goals and recommendations made in the 2023 Biennial GHG Emissions Reduction Report. In fact, the 2023 Report specifically highlights the tremendous benefits on-farm RNG production would have—including methane reduction and fossil fuel displacement both on-farm and via natural gas pipeline injection—and the significant potential for expanded anaerobic digestion under the Natural Gas Innovation Act, the state Methane Digester Loan Program and Advanced Biofuel Incentive Program, payments under Low Carbon Fuel Standards, and the Federal Inflation Reduction Act.[3]

Additionally, the EPA supports biogas recovery from digesters as a viable form of methane abatement and as having the most relative methane reductions of all manure management options.[4] Anaerobic digesters have been promoted historically because they help reduce hydrogen sulfide, odors, prevent the propagation of flies, and reduce the exposure of farm residents and nearby communities to disease vectors. Digesters with proper nutrient management systems also help to promote soil health by converting the nutrients in manure to forms more accessible to plants that can directly replace fossil-fuel derived chemical fertilizers.[5]

Contrary to some claims, RNG production does not incentivize herd expansion to increase manure production. Dairy RNG, at current transportation GHG market prices, generates only a small fraction of the gross revenue that is created by milk-sales (although demand for liquid beverage milk is declining, US supply and demand for total milk products, both per capita and in aggregate, continues to grow.)[6] [7] Only a small share of that revenue goes to the farmer—the majority will be distributed to cover the costs of the digester developers, the gas marketer, the credit broker, end users (e.g., fleets adopting natural gas trucks), the investors, and the banks. Meaning that the farmer does not make enough additional revenue from RNG to justify increasing herd size. However, the additional revenue from RNG production is critical to help defray the cost of an anaerobic digestor to the farmers and encourage the transition to a model of sustainable agriculture.

RNG Coalition believes that adopting a Clean Transportation Standard is an imperative to addressing GHG emissions and climate change; however, it should not eliminate effective modes of methane reduction in the process, which is why we **support SF 2584 with recommendation to remove the prohibition on credit generation for RNG from new or expanding farms under subdivision 7, subsection 2(ii).**

Sincerely,

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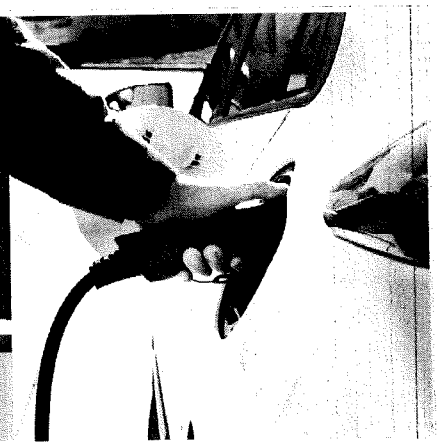
[3] https://www.lrl.mn.gov/docs/2023/mandated/230227.pdf p. 16.
[4] *Practices to Reduce Methane Emissions from Livestock Manure Management.* United States Environmental Protection Agency. https://www.epa.gov/agstar/practices-reduce-methane-emissions-livestock-manure- management.
[5] https://www/epa.gov/agstar/benefits-anaerobic-digestion.
[6] USDA, *Dairy Products: Per Capita Consumption, United States (Annual)*, last updated 9/30/22. https://www.ers.usda.gov/webdocs/DataFiles/48685/pcconsp_1_.xlsx?v=4825
[7] USDA, *US Milk Production and Related Data*, last updated 8/15/22. https://www.ers.usda.gov/webdocs/DataFiles/48685/quarterlymilkfactors_1_.xlsx?v=4825

/s/

Dana Adams
State Legislative Policy Manager
Coalition for Renewable Natural Gas

The Minnesota Clean Transportation Standard:

Lower emissions, faster electrification, cleaner water



2024 MN Legislative Session · Friends of the Mississippi River

A Minnesota Clean Transportation Standard (CTS) would reduce the carbon intensity of Minnesota's transportation fuels by at least 25% by 2030 and 75% by 2040 – with a goal of achieving 100% by 2050. The CTS will dramatically reduce the amount of greenhouse gas pollution generated by transportation fuels while accelerating vehicle electrification and protecting water quality by incentivizing next-generation low-carbon biofuels and on-farm conservation. It's a win-win-win for Minnesota.

How a clean transportation standard works

Under a clean transportation standard, fuel sources with low lifecycle carbon emissions can generate credits, while more carbon-intensive fuels generate deficits that can be offset with the purchase of credits. The predictable nature of the declining carbon standard sends a clear policy signal to the market and allows entities to strategically invest in low-carbon fuels.

This market mechanism rewards low-carbon fuels (including electricity) while directing a portion of credit revenue toward investments in electric vehicle (EV) infrastructure and rebates to help accelerate equitable EV adoption across Minnesota.

Key benefits of a clean transportation standard

1. **Funding EV infrastructure:** Based on ICF's analysis for the MN CTS Work Group and applying reasonable assumptions for credit prices, the CTS could provide between $133-267 million per year for EV infrastructure and rebates.
2. **Reducing consumption of gasoline and ethanol:** The Minnesota CTS Working Group analysis found that a CTS will result in a decrease in gasoline and ethanol consumption in Minnesota.
3. **Reducing legacy vehicle emissions:** A CTS is a mechanism for lowering the carbon intensity for traditional fuel vehicles that are not going to be electrified. Addressing emissions from these vehicles (some of which will be on the road for another 15-20+ years) is essential to achieving our climate goals as we electrify.
4. **Restoring soil and water:** The CTS incentivizes on-farm conservation and the widespread adoption of next-generation low-carbon biofuels, enhancing water quality, habitat and soil health. In particular, winter annual oilseeds (ex: camelina and pennycress) and perennial oilseeds (ex: silphium) can generate credits as low-carbon marine and aviation biofuels; providing new market opportunities for crops in sectors that are unlikely to quickly electrify.

FRIENDS OF THE MISSISSIPPI RIVER

Trevor Russell
Water Program Director
trussell@fmr.org · 612.388.8856

SWTCH

SWTCH Energy Inc.
Greentown Labs
444 Somerville Ave
Somerville, MA 02143
swtchenergy.com

March 4, 2024

Minnesota Senate Transportation Committee

Submitted via email: beth.ethier@senate.mn

Re: **SWTCH comments in SUPPORT of SF 2584 – Clean Transportation Standard**

Dear Chair Dibble, Vice Chair Morrison, Ranking Member Jasinski, and Members of the Committee:

SWTCH is pleased to offer the following comments in SUPPORT of Senate File 2584 and to share its perspective as an electric vehicle charging provider.

About SWTCH

SWTCH is a leading provider of electric vehicle (EV) charging and energy management solutions for multifamily, commercial, and workplace properties across North America. SWTCH's end-to-end solution optimizes EV charging usage and manages load to benefit drivers, property owners, and the grid. SWTCH has deployed more than 10,000 charging stations, with a particular focus on ensuring equitable access to EV charging. SWTCH's charging management platform is built upon a foundation of open communication standards and interoperability to ensure future flexibility, scalability, and innovation even after purchase and installation.

Comments

Minnesota has made significant strides towards a clean transportation future. The state's funding support for a public fast charging network, the Public Utilities Commission's thoughtful and multi-pronged approach to supporting transportation electrification, and the State's 2021 adoption of the Advanced Clean Cars rule, all position Minnesota as a Midwestern leader. These policies and incentives matter because they shape the market for EVs and charging. Through its actions, Minnesota has placed itself squarely on the industry's radar in terms of where companies like SWTCH will prioritize and allocate their resources.

EV policy goals and mandates such as Advanced Clean Cars are insufficient to achieve what they intend without a range of supportive and complementary policies and programs. SF2584's proposed Clean Transportation Fuel Standard (CTS) is a key tool to accelerate the market and help propel Minnesota's economy – one that requires no taxpayer or ratepayer funding.

SWTCH supports a CTS in Minnesota because it is a practical, effective, market-based mechanism to incentivize cleaner transportation fuels, including electricity as a fuel. It will improve the economics for owning and operating an EV, help drive EV adoption, and grow the market for EV charging solution providers like SWTCH. This, in turn, will support good-paying, in-state jobs and businesses, and help diversify and position Minnesota's transportation sector to win in America's clean transportation economy.

Electrifying everything now vs. decarbonizing transportation

SWTCH fully supports decarbonizing the transportation sector and is a strong proponent of electrification as the best pathway. As a practical matter, SWTCH recognizes it will take several years to transform the transportation sector to become zero emission. In the meantime, traditional combustion-engine powered vehicles being sold today will still be on the road 10 to 15 years from now. Non-road sectors such as aviation and maritime may take even longer to decarbonize. Early indicators are that these sectors may be more well suited towards liquid fuels-based solutions than electrification.

Some clean transportation advocates take an all-or-nothing approach when it comes to electrifying transportation and withhold support for a CTS because it supports a range of cleaner fuels rather than zero emission EVs or hydrogen fuel cell (HFC) vehicles exclusively. In SWTCH's view it would be a mistake to focus so narrowly on electrification and in the process lose sight of the enormous benefits and value a CTS will provide. Experience in other states clearly shows that a CTS is effective at both accelerating EV adoption and incentivizing cleaner, lower carbon fuels for combustion engine-powered vehicles at the same time.

In Closing

SWTCH respectfully encourages the Senate Transportation Committee to favorably report SF 2584.

Thank you for your consideration of these comments. If you have questions or if I can provide more information, please contact me at josh.cohen@swtchenergy.com or 202.998.7758.

Respectfully,

Josh Cohen
Head of Policy

//////////////////

March 4, 2024

Chelsey Robinson

Bayer CropScience LP
North America Public Affairs,
Science & Sustainability

800 N Lindbergh Blvd.
St. Louis, MO 63141

Chelsey.Robinson@Bayer.com

www.bayer.com

Honorable Scott Dibble
Chair, Senate Transportation Committee
3107 Minnesota Senate Building
St. Paul, MN 55155

March 4, 2024

Dear Chair Dibble, Vice Chair Morrison, Ranking Minority Member Jasinski, and members of the Senate Transportation Committee,

I am writing to you on behalf of Bayer Crop Science ("Bayer") in support of Senate File 2584.
Bayer is a global leader in the development and deployment of agricultural technologies that enable America's farmers to realize higher yields at lower carbon intensities ("CI") of the row crops that comprise the dominant share of feedstocks for renewable fuel production – soybeans, corn, canola. In addition Bayer encourages and incentivizes practice changes such as no till, cover cropping, and efficient crop protection and fertilizer application through using digital farming and the *Bayer Carbon Program.*[1]

We believe that a technology-neutral, all-of-the-above approach is key to decarbonizing Minnesota's highest-emitting sector: transportation. A clean transportation standard, as laid out in SF 2584, will provide the framework needed to spur the state's transition to lower-carbon transportation fuels, reduce greenhouse gas emissions and other air pollution, and invest in the economy.

Specifically, my organization supports the SF 2584 because low-carbon fuels play a critical role in the decarbonization of the transportation sector today and in the future. Maximizing this begins with climate-smart agriculture for

[1] https://www.bayer.com/en/us/bayer-carbon-program-a-new-revenue-stream-for-farmers#:~:text=The%20Bayer%20Carbon%20Program%20is,implementing%20carbon%2Dsmart%20farming%20practices.

critical feedstock supply chains. Given the scale of GHG reductions needed to forestall worsening effects of climate change, no options should be off the table that can lower carbon emissions. Through the application of climate smart agriculture, there is opportunity for America's farmers to drive measurable GHG reductions and significant economic benefits across rural communities.

Additionally, GHG reductions today are worth far more than GHG reductions in
the future, so ambitious decarbonization cannot wait until future breakthroughs. A CTS should
incentivize deployment of all market-ready fuels that can immediately reduce carbon emissions in transportation, including those from agricultural feedstocks.

In 2023, the Minnesota Legislature directed state agencies to convene a work group composed of 40 stakeholders including fuel producers, environmental, labor, and public health interests, and other experts to consider a clean transportation standard for the state. Work group members recommended a clean transportation standard policy for the state consistent with SF 2584, with the goals of comprehensive and transformative emissions reductions tailored to Minnesota's needs.

A clean transportation standard will build upon progress made during the 2023 legislative session to position Minnesota as a climate leader. We urge your support for this transformative policy.

Sincerely,

Bayer AG

Chelsey Robinson

North America Public Affairs, Science & Sustainability

SIERRA CLUB
NORTH STAR CHAPTER

Sierra Club North Star Chapter
2300 Myrtle Avenue, Suite 260
Saint Paul, MN 55114

Members of the Senate Transportation Committee,

My testimony on SF 2584 references the following six attached exhibits:

A. Letter from 12 organizations opposing the proposed fuel standard, February 15, 2024

B. "Low carbon mandate could increase emissions in Minnesota." by University of Minnesota Professor Jason Hill, Star Tribune February 2, 2024

C. "Current Methods for Life-Cycle Analyses of Low-Carbon Transportation Fuels in the United States (2022)" National Academies of Sciences, Engineering, and Medicine. This is too long to include as pdf, but it is available at http://nap.nationalacademies.org/26402

D. Press Release: "Miller-Meeks, Bice, Hunt, Sorensen, Budzinski Introduce Bill to Classify Corn-Based Ethanol as an Advanced Biofuel." May 15, 2023

E. Lark T., et al., *Environmental Outcomes of the US Renewable Fuel Standard*, PNAS, 2022;119(9),https://www.pnas.org/doi/full/10.1073/pnas.2101084119

F. "A Midwestern Low Carbon Fuel Standard is Not a Climate Solution – Minority Report to the Clean Transportation Standard Work Group Report to the Legislature," February 1, 2024

Peter Wagenius
Legislative and Political Director
Sierra Club North Star Chapter

PARTNERSHIP ON
WASTE & ENERGY
Hennepin | Ramsey | Washington

March 4, 2024

Senator D. Scott Dibble
Chair, Senate Transportation Committee
3107 Minnesota Senate Building
St. Paul, MN 55155

Re: Support for S.F. 2584 (Clean Transportation Standard Act)

Dear Chair Dibble,

The Partnership on Waste and Energy (Partnership) is a Joint Powers Board consisting of Hennepin, Ramsey and Washington counties, formed to address waste management and energy issues. The Partnership seeks to end waste, promote renewable energy and enhance the health and resiliency of communities we serve while advancing equity and responding to the challenges of a changing climate.

The Partnership is part of a broad coalition that supports the proposed Clean Transportation Standard (CTS) Act (S.F. 2584). The CTS Act is a technology-neutral, all-of-the-above approach to decarbonizing transportation, the highest greenhouse gas emitting sector in the state. The Act is good for the state's environment and economy. It will also help solve challenging waste issues.

State law requires metro counties to raise the current recycling rate of 45% to 75% by 2030. Recycling organic waste, primarily food waste, will be necessary if we are to achieve this goal. Hundreds of thousands of tons of organic waste—30% of the state's trash—are available for recovery each year.

Organics recycling programs are in the early stages of development. A key limiting factor is available infrastructure to process the organics into beneficial products. Composting is the most common organics processing method, but anaerobic digestion (also known as AD) is a higher use for this material. AD has the benefit of producing carbon negative transportation fuels like renewable natural gas.

The CTS Act also provides a pathway to using woody biomass to produce biofuels. Emerald Ash Borer infestations are now documented in 50 counties and climbing. With uncertainties surrounding the long-term use of wood waste for biomass energy production at District Energy's St. Paul facility, currently the only significant, practical choice for handling this waste in the greater metro region, more options are urgently needed to productively manage the surging volume of tree waste in the state.

The Partnership believes the CTS Act will lead to strong, reliable markets for biofuels and would support the development of much needed infrastructure to capture maximum resource value from organic and woody waste and reduce climate impacts. We urge the committee to support the CTS Act.

Sincerely,

Victoria A. Reinhardt

Commissioner Victoria Reinhardt, Ramsey County
Chair, Partnership on Waste and Energy

PARTNERSHIP ON WASTE AND ENERGY
HENNEPIN | RAMSEY | WASHINGTON
100 Red Rock Road | Newport, MN 55055
info@recyclingandenergy.org | 651-768-6670

Honorable Scott Dibble

March 4, 2024

Chair, Senate Transportation Committee

3107 Minnesota Senate Building

St. Paul, MN 55155

Dear Chair Dibble, Vice Chair Morrison, Ranking Minority Member Jasinski, and members of the Senate Transportation Committee,

We, the undersigned, are writing to ask you to support a Minnesota Clean Transportation Standard.

We are grateful to the 2023 legislature for establishing the Clean Transportation Working Group and to the Minnesota Departments of Agriculture, Commerce, Pollution Control, and Transportation for convening a comprehensive group of stakeholders that concluded that a Minnesota clean transportation standard "could be the largest single policy for reducing carbon pollution from transportation in Minnesota".

The Minnesota Future Fuels Coalition has been working together for several years to support the development of a clean transportation standard for Minnesota. The coalition is facilitated by the Great Plains Institute, and members include renewable fuel producers and marketers, electric utilities, environmental nonprofits, auto manufacturers, and agriculture and industry groups.

As a diverse group of stakeholders, we support a clean transportation standard tailored to Minnesota. We believe that a policy designed based on recommendations in the white paper "A Clean Fuels Policy for the Midwest" can have many benefits, including:

- Benefits for consumers through market access for clean fuels that are often lower cost than conventional fuels and currently face barriers to entry in the marketplace.
- Equitable access to clean transportation for all Minnesota communities.
- Increased investment in cleaner fuels for all types of vehicles and aircraft, facilitating a more innovative and prosperous clean fuels sector and spurring consumer demand for cleaner products.
- A technology- and fuel-neutral, performance-based approach that rewards the cleanest fuels and expands the fuel market without having government pick winners and losers.
- Reduced air pollution and associated health benefits, particularly in areas that have been disproportionately impacted by transportation pollution.
- Economic incentives and market demand to maximize the resource value of organic waste (including manure, biosolids, and food waste), reducing the climate impacts of organic waste, and supporting counties' efforts to achieve state recycling goals.
- Increased energy independence by relying less on imported resources and more on state resources.
- Reduced greenhouse gas emissions in the transportation, electricity, and agriculture sectors.
- The potential to support voluntary farmer-led efforts to invest in and adopt agricultural conservation practices that benefit soil health and water quality and reduce farm-level greenhouse gas emissions.

Bills passed in 2023 positioned Minnesota as a national leader in climate legislation, and being the first Midwestern state to pass a transformative piece of legislation such as a clean transportation standard would further cement that position. There is no time to waste to start reducing emissions from transportation, Minnesota's highest polluting sector, so we urge you to support this policy that will be critical to get us to our climate goals.

Sincerely,

American Biogas Council

Amp Americas

ChargePoint

Clean Energy Economy Minnesota

Clean Energy Fuels

Conservation Minnesota

Delta

Electrify America

General Motors

Gevo

Gladstein Neandross & Associates

NGVAmerica

Partnership on Waste and Energy

SWTCH

March 1, 2024

Members of the Senate Transportation Committee:

Minnesota Center for Environmental Advocacy (MCEA) thanks you for taking up SF 2584 (Dibble) for discussion. While MCEA is neutral on the bill at this time, the Clean Transportation Standard (CTS) offers a potentially promising approach to reducing the climate impact of Minnesota's transportation sector. Transportation is a significant contributor to Minnesota's greenhouse gas emissions, and new ideas are sorely needed. We hope the committee will hear and advance this bill. MCEA remains engaged with proponents and opponents with the goal to create a bill that maximizes the benefits to our climate while avoiding pitfalls that a complex legal system like a CTS can pose.

MCEA's neutrality on this bill at this stage is a recognition that a Clean Transportation Standard offers both great promise if designed well and great peril if designed poorly. A well-designed CTS could be a critical tool in addressing the climate impacts of transportation. But it also poses great peril if designed badly, if key protections are stripped out of the law, or if poor decisions are made during rulemaking. There are several areas where the design of a CTS in statute and rule determines whether it will be helpful or harmful.

- **First, a CTS must not incentivize the use of captured CO2 for enhanced oil recovery**. Line 7.25 of the delete-all amendment includes "other permanent sequestration technique," which could include the use of captured CO2 for enhanced oil recovery elsewhere.
- **Second, a CTS should not incentivize land conversion to row crops and should include strong verification**. We are happy to see language in the bill that prohibits credits for crops grown on land converted in the last 5 years. However, extending this to 10 years would be a stronger guardrail, and verification of this provision, as well as provisions that incentivize the use of best soil health, fertilizer and cover cropping practices, require strong, farm-level verification that is currently lacking in this bill.
- **Third, a CTS should make reasonable assumptions backed by the most recent science about the relative carbon intensity of transportation fuels**. These assumptions can be distorted and concealed by complex models like GREET that are typically used to assess fuel carbon intensity values. To ensure these assumptions receive adequate scrutiny, a CTS should require that methods for calculating the carbon intensity of transportation fuels be reviewed in a robust rulemaking process.
- **Finally, revenues generated by a CTS must be targeted to benefit the communities most affected by transportation pollution**.

MCEA's experience with rulemaking tells us that complex legal systems like CTS are vulnerable to pressure. The devil is in the details. If this bill becomes law, there will remain much work to ensure that the rules adopted match the intent of the legislation.

As this important bill moves forward, it should be fully vetted and heard in the relevant committees. Because a CTS bill cuts across transportation, environment, and climate change, it may require several hearings, but developing a strong bill will require transparency and a commitment to dialogue with affected communities. We're glad to see this bill on that path, and encourage the proponents to continue to build the broad-based support needed for this bill to become law. Thanks again to Senator Dibble for authoring this important bill.

Aaron Klemz, Chief Strategy Officer, Minnesota Center for Environmental Advocacy
aklemz@mncenter.org, 763-788-0282

MINNESOTA FOREST INDUSTRIES

903 Medical Arts Building • 324 West Superior Street • Duluth, MN 55802 • 218-722-5013 • Fax 218-722-2065 • www.minnesotaforests.com

3/4/24

Senate Transportation Committee
Chair: Senator D. Scott Dibble
Tuesday, March 5, 2024

RE: S.F. 2584 Establishing Clean Transportation Standard

Chair Dibble and Members,

My name is Rick Horton, I am the Executive Vice President of Minnesota Forest Industries. We are a trade association representing the large wood consuming mills in Minnesota that transform trees into products we use every day.

I represented the forest products industry on the Governor's Biofuels Council from 2020-2021. One recommendation from the Council was the development of a Clean Transportation Standard. I was subsequently a member of the Clean Transportation Standard Working Group. In all of these processes I strived to inform members, legislators and the public that the technology exists to make liquid transportation fuels out of wood, and that doing so could dramatically reduce carbon emissions from the transportation sector.

We have an abundance of mill residual materials; logging residuals; materials salvaged from insects, disease, blowdown and fire; and products with limited markets that can sustainably be transformed into liquid transportation fuels. Removing excess forest residue is often ecologically beneficial to the forest, by increasing forest health, reducing the risk of catastrophic wildfire, and preparing sites for reforestation. Healthy forests are known to be more resilience to climatic changes and extreme weather events. Biomass harvesting guidelines are already in place to ensure that enough residue is left on sites to provide wildlife habitat, prevent erosion and enhance forest soil health.

When used for fuel they can substitute for fossil fuels, resulting in a net reduction of carbon emissions from the transportation sector. For example, fossil fuel-based diesel has a Carbon Intensity (CI) score of 90, whereas wood-based renewable diesel has a CI of 8.3.

Forestry is the only economic sector in Minnesota that is a net carbon sink. Minnesota's 17.4 million acres of forest store the equivalent of 50 years of all CO_2 emissions produced in the state. The trees themselves hold 15.5 tons of carbon per acre on average. And our forests annually remove 14% of CO_2 emissions from all sources in the state! Improving upon these figures through good forest management can help Minnesota accomplish its net zero carbon emission goals.

While this process is already "Climate Smart", there are ways that we can manage forests to increase their rates of carbon absorption, reduce carbon emissions from decay and fire, and increase storage. Collectively these practices are called "Climate Smart Forestry". The Minnesota Forest Resources Council

plans to develop a standardized definition of these practices for Minnesota in the near future. We feel that wood-based transportation fuels developed using Climate Smart Forestry Practices should earn additional credit under a Clean Transportation Standard in Minnesota.

Minnesota Forest Industries supports SF2584, so long as it does not define Climate Smart Forestry, or constrain the forestry practices that can used to manage forest carbon flux for the benefit of all Minnesotans. Towards that end we ask that on Lines 8.28 and 8.30 in the A10 Amendment, please change the word "sinks" to the word "stocks". Also, on Line 8.30 please consider adding ", increase carbon absorption, and/or reduce carbon emissions" at the end of the line.

Developing innovative markets for wood products allows us to better manage our forests, resulting in healthier forest ecosystems. Working forests add value to landowners helping them keep their forests in family ownership.

We'd like to thank Senator Dibble for authoring SF2584, for including forestry in the bill, and for considering these proposed changes.

EVgo
FAST CHARGING

March 1, 2024

Dear Chair Dibble, Vice Chair Morrison, Ranking Minority Member Jasinski, and members of the Senate Transportation Committee:

I am writing to you on behalf of EVgo in **support [with amendment]** of Senate File 2584. EVgo is one of the nation's largest public electric vehicle fast charging networks, building and operating the infrastructure and tools needed to expedite the mass adoption of electric vehicles for individual drivers, rideshare and commercial fleets, and businesses.

We believe that a technology-neutral, all-of-the-above approach is key to decarbonizing Minnesota's highest-emitting sector: transportation. A clean transportation standard, as laid out in SF 2584, will provide the framework needed to spur the state's transition to lower-carbon transportation fuels, reduce greenhouse gas emissions and other air pollution, and invest in the economy. A clean transportation standard will build upon progress made during the 2023 legislative session to position Minnesota as a climate leader.

Specifically, my organization requests the "Credit Generator" definition be expanded to ensure the clean transportation standard is implemented as a technology-neutral program that aligns with best practices of successful clean fuels programs today in states such as California[1], Oregon, and Washington. Similarly, other states contemplating clean fuels programs, including states in the Midwest such as Illinois, are contemplating more expansive definitions of credit generator than Minnesota is contemplating. As such, EVgo recommends the following amendment:

> *Subd. 9. Credit generator. "Credit generator" means a provider ~~an entity that produces or imports a~~ of clean fuel for use in Minnesota, which, with respect to electricity used as a transportation fuel. "Provider" includes, but is not limited to, a refiner, producer, or importer of a transportation fuel and a direct provider of electricity being used as a fuel for transportation, including, but not limited to, electric vehicle charging service providers, electric utilities, and electric vehicle fleet operators.* [2]

We appreciate the opportunity to comment on this transformative policy and offer our support with the above amendment.

Sincerely,

Priscilla Hamilton
Director of Market Development & Public Policy, EVgo

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[1] For example, California's Low-Carbon Fuel Standard states: "For electricity supplied for non-residential EV charging, including chargers at multi-family residences that are not limited to serving dedicated or reserved parking spaces, **the owner of the FSE is eligible to generate the credits."** See https://ww2.arb.ca.gov/sites/default/files/barcu/regact/2024/lcfs2024/lcfs_appa1.pdf

[2] Underlined text based on definition in Bill Amendment: IL SB1556 | 2023-2024 | 103rd General Assembly found at: Bill Amendment: IL SB1556 | 2023-2024 | 103rd General Assembly | LegiScan

ALLIANCE FOR AUTOMOTIVE INNOVATION

March 4, 2024

Chair Dibble
Transportation Committee
Minnesota Senate
Saint Paul, MN 55155

RE: SF 2584 – Clean Transportation Standard

Dear Chair Dibble:

The Alliance for Automotive Innovation (Auto Innovators)[1] is writing to express our support for a clean transportation standard in Minnesota. With the modifications referenced below, SF 2584 will not only support electric vehicles (EVs) but can also further reduce emissions from every vehicle on the road.

In the context of climate change, market-based mechanisms are widely understood to encourage emissions reductions in the most efficient way, especially when broadly applied. Properly structured, a clean transportation standard reduces the carbon intensity (CI) of gasoline and diesel fuel either directly or by funding low CI alternatives, such as plug-in and fuel cell electric vehicles and the required infrastructure to support the use of these vehicles. A clean fuel standard is an important part of Minnesota's overall strategy to reduce transportation-related carbon emissions, providing an approach that aligns improved fuel economy with lower emission fuels. It can also provide a source of revenue for transportation-related investments and improvements.

At issue with the current SF 2584 amendments is that all residential EV charging credits go to utilities. We strongly encourage that SF 2584 revert back to the bill language as introduced for residential EV charging credits. The previously introduced language did not identify the party that would be eligible to generate residential EV charging credits, instead leaving that decision up to the agency responsible for the regulation. The regulatory process allows interested parties to provide comments and testimony with the opportunity to share data and reasoning for why they should be included in any credit generation. Worth noting as well is that the recent report from the Minnesota Clean Transportation Work Group,[2] which Auto Innovators served on, did not specify the party that should be eligible to generate residential EV charging credits. For

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[1] From the manufacturers producing most vehicles sold in the U.S. to autonomous vehicle innovators to equipment suppliers, battery producers and semiconductor makers – Alliance for Automotive Innovation represents the full auto industry, a sector supporting 10 million American jobs and five percent of the economy. Active in Washington, D.C. and all 50 states, the association is committed to a cleaner, safer and smarter personal transportation future. www.autosinnovate.org.

[2] https://www.dot.state.mn.us/sustainability/clean-transportation-fuel-standard-working-group.html

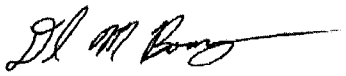
1050 K Street, NW
Suite 650
Washington, DC 20001

Autosinnovate.org

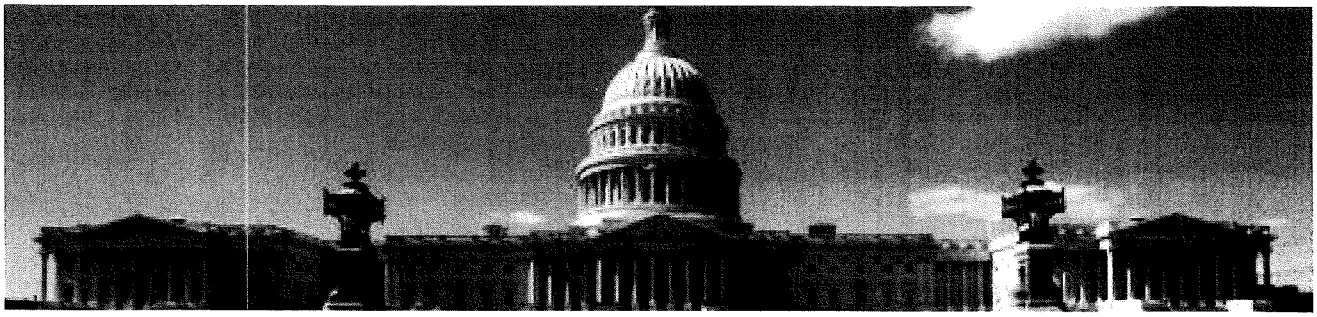
these reasons, we urge SF 2584 to be modified so as not to specify who generates residential EV charging credits.

Thank you for your consideration of the Auto Innovators position. Please do not hesitate to contact me at dbowerson@autosinnovate.org.

Sincerely,



Dan Bowerson
Vice President, Energy & Environment



Miller-Meeks, Bice, Hunt, Sorensen, Budzinski Introduce Bill to Classify Corn-Based Ethanol as an Advanced Biofuel

May 15, 2023 Press Release

Washington, D.C. – U.S. Representatives Mariannette Miller-Meeks (IA-01), Stephanie Bice (OK-05), Wesley Hunt (TX-13), Eric Sorensen (IL-17), and Nikki Budzinski (IL-13) today introduced the Fuels Parity Act, legislation that would allow ethanol from corn starch to qualify as an advanced biofuel and require EPA to use the Argonne GREET model to determine the greenhouse gas emission profile of biofuels under the RFS. Text of the bill may be found **here**.

"As we look toward a cleaner energy future, it's imperative we take an 'any-of-the-above' approach to energy production. Removing legal barriers that limit the use of corn-based ethanol will bolster American energy production and support our agriculture industry—all while lowering carbon emissions," **said Miller-Meeks.** "I'm proud to lead this bipartisan legislation and honored to be joined by my colleagues from Texas, Oklahoma, and Illinois."

"This legislation levels the playing field and allows ethanol derived from corn starch to qualify as an advanced biofuel. This bill will help decrease carbon emissions and increase American energy production, paving the way towards a more attainable and efficient energy future. As liquid fuel demand is at an all-time high, I'll continue working to create and all-of-the-above approach that expands supply for refiners and consumers while maintaining the cost-effective Internal Combustion Engine," **said Bice.**

"Liquid fuels are the backbone of our society, which is why I'm ecstatic to support this legislation," **said Hunt.** "Congress must promote programs that encourage the internal combustion engine, which will remain commonplace in our society for generations to come."

"Making sure our corn growers from McLean County to Whiteside County have the support they need is important to keeping communities across Central and Northwestern Illinois sustainable and secure. The bipartisan Fuels Parity Act is exactly what our farmers have been asking for so they can support their families and strengthen corn production for generations to come," **said Sorensen.**

"Technological innovation is making corn ethanol even cleaner, and the Renewable Fuel Standard should be updated to recognize these advances," **said Budzinski.** "I'm proud to help introduce bipartisan legislation ensuring that all of our low emission biofuels receive the same treatment from the Environmental Protection Agency – and that family farmers, consumers and our environment reap the full benefits of increased blending."

"With the support of Representative Miller-Meeks, we know we have someone that understands the value of ethanol and its role as a more sustainable fuel option to fight climate change on our side. We continue to fight for ethanol because it's a low-carbon, homegrown fuel option that supports 62% of corn grind in our state," **said Denny Friest, Iowa Corn Growers Association President.**

"As a stalwart champion of biofuels, we thank Representative Mariannette Miller-Meeks for her leadership in introducing the Fuels Parity Act," **said Joshua Shields, Senior Vice President of Corporate Affairs for POET.** "By eliminating the corn starch penalty and adopting the Department of Energy's Argonne GREET model, which is the gold standard of carbon lifecycle analysis, this legislation paves the way for a more accurate modeling that better reflects the advancements ethanol has and continues to make as a low-carbon liquid fuel solution."

"We applaud Rep. Miller-Meeks for introducing legislation that recognizes the declining carbon intensity of today's low-carbon ethanol and helps level the playing field," **said Tom Haag, President of the National Corn Growers Association.** "Farmers are proud to contribute to lowering ethanol's carbon footprint through our production practices, and this bill would ensure EPA uses the most recent science

and data to accurately measure the greenhouse gas reduction benefits of biofuels."

"This bipartisan bill would clear two of the biggest regulatory hurdles that keep the U.S. from unleashing the full carbon-reducing potential of corn ethanol. By both allowing corn starch ethanol to qualify for an advanced (D5) RIN and ensuring EPA uses the gold-standard GREET lifecycle analysis model, the Fuels Parity Act would put biofuels on the same regulatory footing as other fuels, giving them a better chance to compete in the market and more opportunities to decarbonize the transportation sector. We're grateful to Representatives Miller-Meeks, Hunt, Bice, Budzinski, and Sorenson for introducing this legislation," **said Emily Skor, Growth Energy CEO.**

Background:

Corn is currently prohibited from qualifying as an advanced biofuel, even if it can meet the required scientific thresholds, by a provision in the 2007 RFS expansion known as the "corn discrimination clause." No other feedstock is limited – only corn starch used for ethanol. Allowing corn to qualify as an advanced biofuel would incentivize lower emissions from ethanol production and allow corn to access another bucket of the RFS. If ethanol can meet the scientific thresholds, then it should be allowed to qualify as an advanced biofuel and generate an advanced biofuel RIN.

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Issues: Energy Environment & Natural Resources