

Clean Fuels Standard in Minnesota

SUMMARY REPORT STAKEHOLDER FEEDBACK

mn MINNESOTA

Department of Agriculture
Department of Transportation

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Clean Fuels Standard in Minnesota Acknowledgements



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Stakeholders and national experts also provided presentations to share their expertise and describe how their organizations were thinking about a Clean Fuel Standard (CFS).

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Upon request, this material will be made available in an alternative format such as large print, Braille or audio recording. Printed on recycled paper.

The report was prepared at the direction of Governor Tim Walz by the Minnesota Department of Agriculture and the Minnesota Department of Transportation.

Clean Fuels Standard in Minnesota

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Executive Summary

Overview

A Clean Fuels Standards (CFS) reduces carbon intensity (CI) of all fuels used in transportation including gasoline, diesel, biofuels, and electricity.

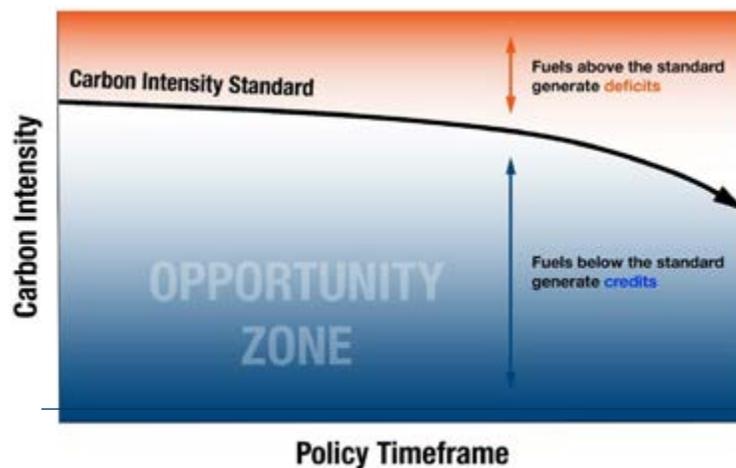
- CI is a measurement of fuel lifecycle emissions that includes production, shipping, and use.
- A CFS sets a CI score that all fuels must achieve, and the required CI score goes down over time.
- A CFS has the potential to reduce transportation emissions 25%-30% in 2040 and 50% or more by 2050.
- A CFS applies to those who refine, blend, make or import fuel – not fuel retailers like gas stations.

There are multiple ways parties can meet a CFS:

- Blending high carbon-intensity fuel with renewable options, like biodiesel and ethanol.
- Offsetting high carbon-intensity fuel with credits purchased from generators of low-carbon-intensity fuels, like electricity, hydrogen, renewable natural gas.
- Reducing emissions in the production, processing, and delivery of transportation fuels.

A CFS is technology-neutral and harnesses market forces to spur investment in the clean economy and creates jobs.

A CFS Differs from policies like the federal Renewable Fuel Standard, based on volumes of fuel rather than carbon reductions, or EV tax credits that apply to vehicles instead of the electricity used.



CFS overview. Source: Great Plains Institute.

Stakeholder Process

33 stakeholder meetings and public meetings with over 470 total attendees between October 2021 and January 2022. Stakeholders were grouped with similar organizations to support relevant learning, information sharing, and support coordinated comments from groups with similar interests and concerns. The process focused on high level principles, not detailed analysis of implementation.

- Agriculture and Rural (3)
- Business and economic development (3)
- Environmental Justice (4)
- Environment/ Conservation (4)
- Labor/Economic Development (4)
- Petroleum/Refineries (4)
- Utilities (3)
- Public Meetings (4)

The process identified shared principles. Formal program design will require detailed analysis and additional engagement to evaluate benefits/costs. Other states addressed these questions through rulemaking.

Feedback Summary

The following is summary of feedback consolidated from all stakeholders. More detailed information is provided in the full report.

Clear support for a CFS in Minnesota was expressed by organizations from different economic sectors.

- Desire for Minnesota to lead and potential to bring in other Midwest states in the future.
- Potential for new investments in EVs, biofuels, woody biomass, waste-to-energy, etc.
- Importance of climate action now and for CFS as part of comprehensive climate action.
- Create new investment in low-carbon biofuels in Minnesota.
- Fuel neutral “pathways” to calculate carbon intensity and not unfairly advantage any fuel.
- Enthusiasm/support for administration’s interest in a CFS.

However, support was contingent on different goals for each group and support was not unanimous. Examples include the following:

- Off ramps to re-evaluate or pause CFS if not achieving goals or substantially increasing fuel costs.
- Allow sufficient time for technologies and jobs/workers to transition to lower-carbon fuels.

Concerns were generally around the following:

- Process for approval; different groups preferred different lead state agencies
- Ability for CFS to promote different co-benefits: e.g., Environmental groups concern about impacts to water quality and/or prevent conversion of natural lands to biofuel crop production.
- Potential fuel cost impacts to consumers

More engagement/information was requested from all the groups, especially around implementation and program design. These questions could be addressed through rulemaking, similar to the process used in other states.

Background

The transition to a cleaner economy has the potential to create jobs, drive innovation, encourage new investment, and support the health and environment of Minnesotans across the state. Minnesota has no native fossil fuel resources so leveraging locally produced renewable energy from solar, wind, and biofuels, and increasing efficiency of fossil fuel production is especially beneficial to our economy and can reduce impacts of global market price fluctuations on Minnesota businesses and consumers. Supporting local clean energy resources can also improve our environment and public health as they cause less climate and air pollution, especially in communities traditionally overburdened from dirty air and water, and least resourced to adapt to climate change and extreme weather.

“Minnesota can lead the way in addressing climate change in a way that supports new jobs, reduces pollution, and helps ensure our children have clean air to breathe and clean water to drink. That’s why our Administration will work with private, non-profit, and government partners and Minnesotans to address climate change while creating jobs across the state.”

Governor Tim Walz

Transportation is the largest source of climate pollution in Minnesota and nationally. There has been little progress reducing transportation emissions since 2005, the baseline date of the state’s **Next Generation Energy Act** (NGEA)¹. The State of Minnesota has supported external stakeholder processes to identify strategies to reduce transportation pollution, including the following:

- **Pathways to Decarbonizing Transportation** (2019): multi-agency process including technical experts and extensive public engagement throughout the state.
- **Governor’s Climate Change Subcabinet** (2019 – ongoing): Executive Order for cabinet agencies to coordinate with external partners through the Governor’s Advisory Council on Climate Change external partners.
- **Governor’s Council on Biofuels** (2019-2020): diverse council of Minnesota biofuel interests, including business and nonprofits.
- **Sustainable Transportation Advisory Council** (2020 – ongoing): MnDOT process with leaders from public and private sector, nonprofits, community-based organizations, and elected officials.

These engagement efforts highlighted the opportunity for transportation innovation to attract private investment to Minnesota, support environmental and climate goals, and address disparities in pollution impacts and economic opportunities. The public and stakeholders recommended strategies to incentivize lower carbon transportation fuels, with the Governor’s Climate Change Subcabinet, Governor’s Council on Biofuels and the Sustainable Transportation Advisory Council explicitly recommending a Clean Fuels Standard.

On October 7, 2021, Governor Tim Walz directed the Minnesota Department of Agriculture (MDA) and the Department of Transportation (MnDOT) to lead a new stakeholder process to identify shared goals and opportunities to inform a new Clean Fuels Standard as one piece of a larger group of strategies to promote economic development, clean transportation, and equity for Minnesota.

¹ Next Generation Energy Act
www.revisor.mn.gov/bills/text.php?number=SF145&version=A&session=ls85&session_year=2007&session_number=0&type=ccr&format=pdf

What is a Clean Fuels Standard?

A clean fuels standard (CFS) is a performance-based incentive program that can reduce climate pollution from all transportation fuels, including gasoline, diesel, biofuels, and electricity.

Under a CFS, greenhouse gas (GHG) emissions are tracked for the full lifecycle of a fuel to develop a carbon-intensity (CI) score. Lifecycle accounting is often referred to as well-to-wheels analysis. CI scoring allows different fuels to be evaluated to one another, despite different means of production and tailpipe emissions.

A CFS sets a CI score for all fuels and the required CI score goes down over time. Fuel providers choose how to meet the lower CI score requirements, typically by reducing the CI of their fuels, adding lower CI fuels to their fuel mix, or purchasing “credits” from lower carbon fuel providers. Fuels with CI scores that exceed the standard generate credits that can be traded informally or purchased directly by fuel providers who cannot meet the standard (“deficits”).

The required CI score goes down over time to encourage continued innovation and investment in new technologies to meet the lower CI requirements.

A CFS differs from policies like the federal Renewable Fuel Standard, which is based on volumes of fuel rather than carbon reductions, or EV tax credits that apply to vehicles instead of the electricity used.

Potential for Economic and Environmental Benefits

A well-designed clean fuels policy can have multiple benefits for the economy and environment²:

- Be fuel neutral to allow all fuel types to be evaluated fairly based on performance.
- Compensate any low carbon fuel provider that reduces carbon beyond policy limits.
- Supports a diverse mix of clean fuels in Minnesota, including incentives for new clean fuels.
- Encourages a competitive marketplace that supports market access.

Examples of Lifecycle Emissions in a CFS

- **Gasoline or diesel:** emissions from crude oil extraction, transportation, refining, and combustion in a vehicle.
- **Biofuels:** emissions from farming, biofuel production, and combustion in a vehicle.
- **Electricity:** emissions from production of electricity, sources of electricity, and the efficiency of electric vehicles (EVs).

² A Clean Fuels Policy for the Midwest:

<https://betterenergy.org/wp-content/uploads/2020/01/Clean-Fuels-Policy-for-the-Midwest.pdf>

Why Explore a Clean Fuels Standard in Minnesota?

Reducing Climate Pollution

The 2019 Pathways to Decarbonizing Transportation³ project worked with state and national experts and members of the public statewide to identify strategies to reduce transportation climate pollution. The project showed that increased vehicle efficiency and lower carbon fuels could get Minnesota almost 80% of the way towards reaching the NGEA goals for the transportation sector (Figure 2), and that we cannot meet state goals without lower carbon fuels.

A CFS can reduce emissions from all three of the highest emitting sectors in Minnesota – transportation, electricity generation, and agriculture, forestry, and land use – which accounted for over 70% of all Minnesota GHG emissions in 2018⁴.

The amount of climate pollution reduced with a CFS would be set by Minnesota. One example of reduction potential comes from Oregon where a 25% reduction in average CI is required by 2035 from 2015 levels.

CI target levels could be more ambitious in later years to allow transition time and encourage longer-term investments in Minnesota. It is feasible to consider CI reduction targets of at least 50% by 2050. Transition time is important for parts of the transportation sector that are harder to decarbonize, like aviation. Liquid fuels will remain a part of our economy for many years into the future. A CFS can incentivize actions that reduce climate pollution now while also encouraging investment in transformative technologies of the future.

Growing Jobs and Promoting Economic Development

There are also potential economic opportunities for farmers under a CFS policy design. Existing programs like the MDA Minnesota Agricultural Water Quality Certification Program (MAWQCP) and the University of Minnesota Forever Green Initiative are two examples that demonstrate Minnesota’s willingness to explore new and innovative solutions to address our changing climate.

The MAWQCP certifies and rewards farmers for co-benefits that come from managing their land in a way that protects water quality. A certified farmer can achieve Soil Health or Climate Smart endorsements if they go above and beyond to implement practices that benefit other conservation goals. Farmers work directly with a certifying agent who helps guide them through the assessment process and on-farm field verification. The MAWQCP model could complement a CFS policy as Minnesota farmers are already familiar with this type of verification/certification program.

The University of Minnesota’s Forever Green Initiative has worked to develop and build new markets for winter annual and perennial crops that protect our water and enrich our soils. A CFS could expand and further incentivize opportunities for winter annual oilseed crops. This would provide additional markets for crops that provide important ecosystem services.

Emission reduction by measure, 80x50 scenario

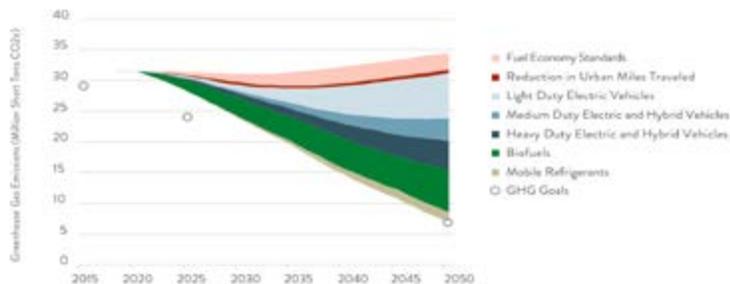


Figure 2: Blue and green shaded wedges make up nearly 80% of emissions needed to achieve NGEA goals and would see reductions from a CFS. Source: Pathways to Decarbonizing Transportation (MnDOT, 2019).

³ Pathways to Decarbonizing Transportation (2019) engaged Minnesotans statewide to identify strategies to reduce transportation climate pollution while promoting economic development, safety, and equity. More information: www.dot.state.mn.us/sustainability/pathways.html

⁴ MPCA GHG Inventory: www.pca.state.mn.us/sites/default/files/Iraq-1sy21.pdf

Comprehensive Strategy to Reduce Transportation Emissions

A CFS alone is not sufficient to meet the Minnesota’s GHG reduction goals. The Walz-Flanagan Administration recognizes the need for a comprehensive approach to achieve climate reduction goals and promote state priorities around growing the economy, addressing inequities and environmental justice, and promoting livability, clean air, clean water, and soil health.

The administration continues to support all four legs of the sustainable transportation “stool” (Figure3) through policy actions that promote electric vehicles and biofuels, increase the availability of efficient passenger and transit vehicles, increased investment in transit, biking, and walking, and improving the efficiency and performance of existing transportation infrastructure. While all four legs of the stool are important, a CFS is a unique opportunity to support lower carbon transportation now while other strategies take time to fully implement or realize their pollution reduction potential.

The 2022 Administration’s Supplemental Budget proposes investing almost \$900 million in fiscal years 2022-2023 in climate, drought relief, historical new investments in clean transportation to promote transit, EVs, and climate resilience to extreme weather. Additional investments in health soils and the Forever Green initiative would further support goals of a CFS.



Figure 3: 4-legged “stool” of Sustainable Transportation

Clean Fuels Standards Around the Country

There is no national clean fuels standard. States with clean fuel policies all use a lifecycle analysis with declining CI score to drive innovation and reduce pollution. States have learned from one another, but their policies are unique and reflect state-specific needs and values. Clean fuels policies in other states have all been authorized by legislation and adopted through rulemaking.

Currently, CFS or LCFS legislation has been proposed in New Mexico and New York and policies are in place in California (2011), Oregon (2016), and Washington (2021). Internationally, clean fuel policies exist in Brazil, British Columbia, and the European Union. Representatives from states with clean fuel policies presented to one or more stakeholder groups as part of this process.

Since 2016, the Oregon program fostered a \$100-million-a-year-plus market where investments are being made to increase the production of lower-carbon fuels, spark innovation in technology, and invest in infrastructure to deliver these fuels across the state. The program's credit prices have remained steady, signaling to fuel producers and suppliers here and beyond that they should continue to invest in Oregon. These investments have allowed the transition to cleaner fuels without any significant rise in retail or wholesale fuel prices when compared to our neighboring states. In fact, the program brings down the cost of low-carbon fuels and creates the financial incentive to decarbonize the transportation sector as no other program can do⁵.

Minnesota companies are currently making lower-carbon fuels here and shipping them to states with clean fuel policies where they benefit from credits generated by Clean Fuels Programs. In a Minnesota CFS, fuel producers could avoid transportation costs from shipping fuels to other states to further invest and promote economic development in Minnesota.

Oregon initiated a Clean Fuels Program in 2016 and is required to review the program every 5 years. Since 2016, they have realized the following benefits:

- Displaced about 1 billion gallons of fossil fuels
- Reduced about 5.3 million tons of GHGs on a lifecycle basis
- Met or exceeded the GHG reduction standards every year
- Lowered carbon intensity of ethanol and biodiesel by about 20%
- Increased blend rate of biodiesel & renewable diesel to about 12%
- Enabled the state's utilities to invest almost \$20 million in EV projects

⁵Oregon Clean Fuels Program, submitted to 2022 Oregon Legislature on February 1, 2022.

www.oregon.gov/deq/ghgp/Documents/CFP-ProgramReview.pdf

Clean Fuels Standard – History in Minnesota

Coordination on a clean fuels policy in Minnesota and the Midwest began in 2009 when then Iowa Secretary of Agriculture, Bill Northey, convened states through the Midwest Governors Association.

In 2018, the Great Plains Institute (GPI) facilitated the Midwestern Clean Fuels Initiative to identify policy principles captured in the white paper: [A Clean Fuels Policy for the Midwest](#)⁶. The group is still active and includes a broad coalition of fuels producers and marketers, nonprofit and research organizations, scientists and engineers, and agriculture and industry stakeholders. The white paper identifies potential benefits to the economy and environment, intended outcomes, and principles for a clean fuels policy. The following attributes were highlighted during the GPI process:

- Designed to be technology neutral.
- Compensates any clean fuel or low carbon fuel provider that can achieve a lower CI than the policy requires.
- Supports a portfolio of clean fuels and compensates fuel producers based on their actual carbon performance without discriminating against or disproportionately favoring any fuel.
- Encourages a competitive marketplace in clean fuels and offers incentives to support access to the market.
- Supports development of a variety of clean fuel types, including but not limited to biofuels, electricity, and hydrogen

During the 2021 legislative session, the [Future Fuels Act](#)⁷ was introduced in the Minnesota House of Representatives based on principles developed through the Midwestern Clean Fuels Initiative process. The bill had a Senate companion and received a hearing in the Minnesota House.

As stated previously, in October 2021, Governor Tim Walz directed the MDA and MnDOT to build off previous efforts to identify potential principles for a Clean Fuels Standard in Minnesota.

⁶A Clean Fuels Policy for the Midwest:

www.betterenergy.org/wp-content/uploads/2020/01/Clean-Fuels-White-Paper-Final-2.pdf

⁷Future Fuels Act: wdoc.house.leg.state.mn.us/leg/LS92/HF2083.0.pdf

Stakeholder Process

The Governor’s stakeholder process re-engaged leaders and organizations involved in previous efforts, including members of the Governor’s Council on Biofuels, the Sustainable Transportation Advisory Council, and the Midwestern Clean Fuels Initiative. The process added new stakeholders who had not participated in earlier CFS conversations and included public meetings with Minnesotans across the state.

The goals of the stakeholder process were to listen to feedback, build understanding of what a clean fuels policy is and how it could benefit Minnesota, and identify areas of shared goals, priorities, and concerns. The process focused on high level principles, not detailed analysis of implementation. E.g., discussion focused on the need to use a nationally recognized model or protocol rather than specific carbon intensity values of different fuels.

A total of 33 stakeholder meetings and public meetings were facilitated by the MDA and MnDOT with about 470 total attendees between October 2021 and January 2022. Stakeholders met in groups with similar organizations to facilitate relevant learning, sharing of information, and support coordinated comments from groups with similar, but not identical, interests and concerns.

Stakeholder Group	Round 1	Round 2	Round 3	Round 4
Agriculture and Rural	24	31	17	
Business and economic development	19	17	15	
Environmental Justice	6	12	8	5
Environment/ Conservation	25	27	25	15
Labor/Economic Development	5	7	5	3
Petroleum/Refineries	25	22	20	16
Utilities	11	12	5	
Public Meetings	25	9	6	55
Total				472

Meeting attendees were reminded that additional engagement opportunities beyond this effort would be provided to discuss important details of CFS implementation, either through future public engagement, rulemaking, or other means.

Stakeholder meetings were generally organized by providing a background and overview of the CFS concept and how it has worked in other states. Later meetings were driven by stakeholders and external presenters from businesses and business associations, scientific groups, community-based organizations, and agency staff from states with clean fuel policies addressed questions from individual stakeholder groups.

Stakeholder Feedback — Summary

Feedback included verbal comments during stakeholder meetings and optional written feedback shared with the MDA and MnDOT directly. When possible, summary feedback was shared with the stakeholder groups during the meetings to ensure it captured their high-level comments. General themes from all the stakeholder groups were shared with stakeholders throughout the process.

The following is a summary of the feedback received. Feedback was consolidated to reflect the diversity of opinions within each group. Additional detailed comments were provided by several groups that could inform implementation, rulemaking, or future engagement around a CFS in Minnesota.

Agriculture and Rural Interests

Three meetings were held between October and December 2021 with about 70 total participants. Guest speakers included a representative from the Oregon Department of Environmental Quality who shared how a Clean Fuels Program works in Oregon and the Farmer's Business Network who discussed how they work with farmers and business to help growers optimize practices and quantify CI scores.

Key Themes

- CFS should be technology neutral, and science based. It matters where and how CI scores are calculated and there are still details to work out.
- Balance state leadership while ensuring that Minnesota is not an outlier. A CFS should consider regional market opportunities.
- Important to understand impacts to costs and fuel prices, the impact of indirect land use change, and the potential for future participation from other Midwest states.
- Communicate and clarify to other stakeholders what a CFS is and is not.
- Ensure a CFS doesn't conflict with complementary efforts, including current biofuel policy.
- Does not lead to increased food and other consumer prices.

Business and Economic Development

Three meetings were held between November 2021 and January 2022 with approximately 51 participants. Guest speakers included Neste US who shared how they are building their business model to help reduce emissions and the Renewable Energy Group who provided their thoughts on the biodiesel market, carbon reductions, policy levers to encourage biofuels, other states with or considering policies, and supply chain considerations.

Key Themes

- An incentive-based or performance-based approach is preferred.
- Consider what we have learned from the biodiesel requirement over the past decade.
- Learn from other states about cost impacts to fully understand the implications for Minnesota.
- Prioritize jobs and economic development opportunities to attract new private investment. E.g., opportunities for sustainable aviation fuel development.
- Ramp up timing is important, allowing organizations to have adequate time to transition.
- Address concern about impact to existing equipment and warranties.
- Give credit for past investments in clean fuels technologies.

Additional feedback provided by stakeholders

The following principles were provided by individual stakeholders after engagement sessions and summarized to reflect multiple comments received during and following the formal engagement.

- Request better understanding of the environmental and economic benefits and impacts of the state's existing fuel policies and other carbon reduction programs.
- Concern about increased fuel price impacts, especially for small companies in Minnesota.
- Concern about administrative costs to comply with a CFS without associated benefits.
- Encourage investment and support for evaluation of new cleaner transportation technologies.
- CFS supports the transition to vehicle electrification by addressing necessary conditions to increased EV adoption while reducing emissions from every vehicle already on the road by lowering the carbon intensity of gasoline and diesel fuel.

Environmental Justice and Equity

Four meetings were held between October 2021 and January 2022 with approximately 31 participants. Guest speakers included Climate Solutions and the Climate Reality Project who spoke about the process to engage diverse stakeholders and pass a clean fuels policy in WA state and the Oregon Department of Environmental Quality who gave an overview of their clean fuels program with a focus environmental justice and other co-benefits.

Key Themes

- Important to engage communities and stakeholders in the policy/program development process early and build new relationships. Balance all voices in this discussion, especially those historically marginalized and consider the relative power stakeholder groups hold.
- A CFS should be part of larger suite of transportation climate and equity package that includes funding to reduce vehicle miles traveled (VMT) and support for transit, biking, and walking.
- Support for policy design that directs revenue and benefits to the most impacted communities.
- Important to specifically analysis environmental justice and health opportunities and impacts.
- Concern about potential to incentivize a carbon capture pipeline to allow more pollution.

Additional feedback provided by stakeholders

The following principles were provided by individual stakeholders after engagement sessions and summarized to reflect multiple comments received during and following the formal engagement.

- CFS must reduce climate pollution and contribute goal of zero carbon by 2050.
- CI scoring should account for upstream effects on health and communities for all fuels.
- We should not incentivize carbon capture versus absolute carbon reductions.

Environment and Conservation

Four meetings were held between October and December 2021 with approximately 91 participants. Guest speakers included the Union of Concerned Scientists who shared their analysis of clean fuels potential and benefits and Climate Solutions who described their evaluation and their coalition building and support of a clean fuels policy in Washington State.

Key Themes

- Reducing climate pollution is important and reductions should align with international goals (e.g., net zero by 2050). CFS is one tool, along with other policies.
- Prioritize co-benefits; clean fuels should support clean water, air, and wildlife/pollinator habitat.
- Acknowledge and address potential risks, including indirect land use change, potential expansion of large feedlots, and impacts to EJ communities.
- Use the best available science to calculate CI scores for fuels.
- Acknowledge tension between long-term impacts, need for action, and speed of implementation.
- Adopt the principle of no net loss of natural lands as result of CFS.

Additional feedback provided by stakeholders

The following principles were provided by individual stakeholders after engagement sessions and summarized to reflect multiple comments received during and following the formal engagement.

- Set a science-based reduction goal as part of a comprehensive plan to achieve internationally accepted targets that includes transportation options and EV investments.
- Prioritize pathways with co-benefits for habitat, pollinators, and air quality.
- Embrace winter-hardy oilseeds and biofuel feedstock to support hard to electrify vehicles.
- Protect conservation and forested lands and fully account for land use change in CI scoring.
- Target low carbon and credit revenue investments in underserved communities.
- Include mechanisms for evaluating performance towards goals and evolving over time
- Use transparent, accurate, and verifiable calculations for life cycle emissions in CI scoring.
- Concern about incentivizing carbon capture or other technologies that could encourage fossil fuel extraction.

Labor and Economic Development

Four meetings were held between October 2021 and January 2022 with approximately 20 participants. Guest speakers included Climate Solutions and the Certified Electrical Workers of Washington who discussed how policy process in Washington and how they coordinated with key labor partners to advocate for the needs of workers, industry, and trade groups.

Key Themes

- Learn from other states to maximize benefits to industries and jobs and avoid negative impacts.
- Partner with industry to ensure quality and quantity of jobs are created and preserved and learn from energy transition in the electricity generation sector.
- Address fuel availability, price impacts, and transition time needed for industries where transition is more challenging (e.g., heavy-duty equipment, aviation, maritime).

Petroleum and Refineries

Four meetings were held between November 2021 and January 2022 with approximately 82 participants. Guest speakers included The American Petroleum Institute who shared their framework with five key actions including accelerating technology and innovation, further mitigating emissions from operations, endorsing a carbon price policy, advancing cleaner fuels, and driving climate reporting. The Oregon Department of Environmental Quality gave an overview of their clean fuels program.

Key Themes

- The pace of declining CI scores in a CFS is important to allow time for industry to transition.
- Prefer incentive and market-based policy approaches to strict regulation.
- Important to evaluate costs and benefits, climate impacts of different fuels and avoid unintended consequences.
- Any new policy should avoid conflicts with other regulations.
- States should learn from each other while also considering the weather and economy of Minnesota.
- Consider potential for a regional approach to help businesses that operate in multiple states.

Additional feedback provided by stakeholders

The following principles were provided by individual stakeholders after engagement sessions and summarized to reflect multiple comments received during and following the formal engagement.

- Minnesota should be the first state in the Midwest to adopt a low carbon fuel program.
- The MDA should have a role to ensure regenerative farming and biofuels are fully represented.
- Parity between different technologies should be a priority including a full life cycle analysis that is third party verified and avoids exemptions or carve outs.
- Credits should only be generated when they are used.
- Cost containment is important and Washington state can serve as a model (rulemaking in progress).
- Include carbon intensity of the feedstock and procedures for biofuels producers to source low carbon commodities and capture the value of those farming practices.
- CI-reduction glide path should be informed by credible scenarios and accept that later stages may be aspirational.
- Harmonize with other CFS programs to extent possible but fit program to Midwest context.

Utilities

Three meetings were held between November and December 2021 with approximately 28 participants. Guest speakers included the Sacramento Municipal Utility District and Southern California Edison who shared information about their role as utilities with the California low carbon fuel standard including credit sources and generation.

Key Themes

- A CFS should complement current policies and utility regulatory proceedings, such as electrification of vehicles.
- Evaluate the speed and complexity of a CFS against policies with similar goals and the potential costs to consumers.
- Leverage current innovative and evolving customer-facing utility programs.
- Acknowledge the complexity around the role of utilities in a CFS and their different business models and customer bases.

Additional feedback provided by stakeholders

The following principles were provided by individual stakeholders after engagement sessions and summarized to reflect multiple comments received during and following the formal engagement.

- The Carbon Intensity (CI) score assigned to electricity as a transportation fuel should reflect a utility-specific carbon intensity with the option to provide site-specific CI scores.
- CI should consider the life cycle of the fuel only for consistency with how other fuels are evaluated.
- The credit administrator should be a state regulatory agency.
- The CFS should provide the utility authority to direct credit revenue to new EV programs and infrastructure.
- Credit revenues generated by utilities should be considered additive to approved EV programs and Transportation Electrification Plans.

Public Meetings

Four public meetings were held between December 2021 and January 22 with approximately 95 participants. These meetings were intended for general audiences unfamiliar with clean fuels policies and provided a basic overview and opportunities for questions and discussion. Online survey tools were used to collect feedback.

Key Themes

- Concern about climate change and support for diverse set of actions that reduce climate pollution.
- Support for straight forward policies that allow farmers and others to participate and benefit.
- Desire to better understand the costs and benefits of a CFS in Minnesota.
- Different opinions about the best process to adopt a CFS (e.g., legislation vs rulemaking).
- Opportunity to drive decarbonization and environmental benefits.
- Support for electrification, biofuels, air quality, and agricultural industry.



Figure 4: Word cloud of responses to question “What do you like about a Clean Fuels Standard” from public meeting, January 20, 2022.

Common Themes and Areas for Further Exploration

A goal of the engagement process was to identify potential high-level principles shared by multiple stakeholders. In addition to shared themes or principles, there were several questions identified by multiple groups where different views were expressed. The following are not listed in priority order.

Common Themes

A CFS can be complex, and the state should strive for simplicity wherever possible.

Use a science-based, fuel neutral, and regularly updated model to evaluate full lifecycle emissions for determining CI scores. The GREET model from Argonne National Laboratory that simulates energy and emissions was suggested by multiple stakeholders.⁸

Prioritize co-benefits to Minnesota businesses, jobs, natural environment, and disadvantaged communities.

A CFS should be one part of comprehensive approach to reducing climate pollution.

Timing of CI reductions is important to support a transition by Minnesota companies and workers.

Off-ramps to re-evaluate or pause a CFS are important to ensure a CFS is achieving the goals and does not create unintended consequences or substantial price increases to consumers.

Preference for performance-based system vs strict regulation or volume-based requirements.

Desire more engagement on a final CFS, especially pathways to determine CI and implementation.

Ensure equity is addressed through equity index, analysis, or other formal assessment.

A CFS in Minnesota should apply best practices learned from other states but reflect the values and economy of our state and region so that it could be adopted by other Midwest states in the future.

Areas for Further Exploration

Learning more about potential costs/benefits to consumers, fuel producers, and fuel wholesalers and ways to support co-benefits for natural environment and disadvantaged communities.

More detailed analysis of how clean fuels policies have worked in other states.

Accounting for indirect land use and potential to prevent impacts to native forests, grasslands, and prairies.

Opportunities with the credit system, how it could operate, and how it supports other state goals.

Questions about the lead state agency and the process for adopting a CFS in Minnesota (e.g., legislation, rulemaking, or some combination).

Acknowledgement of potential economic development opportunities and impacts to different industries, including the acknowledgement of positive, negative, and neutral impact.

Application to sectors where low-CI fuel supply is limited (e.g., sustainable aviation fuel).

⁸Argonne GREET Model: greet.es.anl.gov/

Next Steps

We are grateful to everyone who participated in the stakeholder process around a CFS for Minnesota. Your interest and expertise were invaluable to helping the state better understand opportunities in the future to consider a CFS.

The process provided important feedback about what a CFS could mean for Minnesota and the potential to design a policy that addresses the needs of Minnesotans across the state as we transition to a clean energy economy that support jobs, rural economic development, the natural environment, and environmental justice.

The effort built on previous engagement led by others on the topic of a CFS for Minnesota and the Midwest. It also helped to introduce the topic of a CFS to new stakeholders and organizations who had not participated in earlier conversations.

Overall, we heard interest in the potential for a CFS to promote rural economic development, leadership from Minnesota farmers, and support for clean energy goals. As noted in the report, several common themes and principles emerged, along with several unresolved questions.

Looking ahead, we propose the following two actions the state can support to advance understanding about the shared principles and help to resolve the unanswered questions we heard from stakeholders.

Regional Clean Fuels Summit

The MDA and MnDOT propose convening a Midwest Clean Fuels Summit during the summer or fall of 2022. Multiple stakeholders expressed interest in exploring a regional approach to create a broader clean fuels market for the Midwest. Minnesota state agencies will collaborate with counterparts in other Midwest states, along with key stakeholder groups, to further explore the potential for a multi-state approach to clean fuels.

Explore Additional Research

We heard a strong desire for better understanding about potential benefits and costs of a CFS for Minnesota, particularly around fuel prices, jobs, rural and agricultural economic development, and environmental justice. State agencies will explore funding and research opportunities to provide more specific information on these topics as they relate to Minnesota and/or the Midwest region.

This report will be posted online and shared with stakeholders and the public. We are committed to continuing this work and further exploring this policy lever as another strategy to support jobs, the environment, and clean energy opportunities for Minnesota.