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Dear Minnesota House Energy and Climate Finance and Policy Committee,

Mr. Chair and members, my name is Colin Cureton and I work as the Director of Adoption and Scaling for the University of Minnesota Forever Green Initiative. Thank you for the opportunity to provide perspective on HF2083, also known as the Future Fuels Act.

While many approach this bill in the context how it could affect the future of ethanol or electric vehicles, I would like to widen the discussion to the feedstocks and low-carbon fuels that this policy could bring online to advance the interests of Minnesota's agricultural productivity, rural vitality, natural resource stewardship, and climate resilience.

UMN Forever Green is developing the winter-hardy oilseeds, winter camelina and pennycress, that could be major players in the future of MN and Midwest biofuels. These crops are being developed as Fall-planted "cash cover crops" that enhance but do not replace current cropping systems.

These crops will boost grower income, improve water quality and soil health, drive rural economic development, reduce MN's carbon footprint, and make MN more resilient to climate change. This will provide a sustainable, market-driven pathway for broadly scaling cover crop adoption and its associated environmental benefits in MN, which no current "carrot or stick" policy can accomplish.

Biofuels including renewable diesel and sustainable aviation fuels are two major market opportunities for the winter oilseeds. Notably, these are two liquid fuels for heavy-duty vehicles and airplanes that are likely to outlast liquid fuels for light-duty vehicles such as ethanol blends by several decades.

These crops and their market opportunity are real. UMN-owned pennycress traits are undergoing commercial launch in the Southern Midwest by a start-up, CoverCress. In the Western US over 100,000 acres of camelina are being planted via several major industry partnerships. Every week, Texas energy companies call me asking to source truckloads of these feedstocks. I tell them not yet, but soon. With generous State support and subsequently leveraged funds, UMN has brought these winter oilseeds to the edge of commercial launch. Near-term several million acres in MN are primed for these crops and we are likely to see commercial launch of these crops in MN over the next several years.

The Future Fuels Act would be a significant lever for supporting the scaling of these cash cover crops across millions of acres of MN agriculture, expediting MN's transition to a lower-carbon fuel future through fuels with significant economic and environmental co-benefits. Why will the Future Fuels Act be a major lever for the winter oilseeds?

Biofuels made from camelina and pennycress are ultra low-carbon fuels. Initial carbon intensity scores for these two crops are in the range of 20-30 gCO<sub>2</sub>/MJ, compared to a range more like 50-80 gCO<sub>2</sub>/MJ

in corn-based ethanol and soybean-based biodiesel. By growing these crops on otherwise fallow ground their land use change score is zero, or close to it. This is a major advantage given that land use change for ethanol and biodiesel made from corn and soybean, respectively, account for over half their total carbon intensity. In other words, the winter oilseeds overcome the long-running “food versus fuel” debate in biofuels. Of the +1,000 approved feedstock pathways in California’s Low Carbon Fuels Market, the CI scores of camelina and pennycress are better than 80-90% of all other feedstock pathways.

Drop-in equivalent fuels made from camelina and pennycress would compete very well in the type of credit market that would be created by the Future Fuels Act by generating credits significantly below the State’s CI target. The result would be more carbon intense fuels like oil and gas effectively subsidizing cover crop adoption across Minnesota for the production of significantly lower carbon fuel.

Simply put, the Future Fuels Act could be the single largest policy lever for sustainable, market-driven scaling of cover crops in Minnesota’s history. I repeat: **the Future Fuels Act could be the largest ever policy lever for scaling cover crops in Minnesota’s history.**

Notably, scaling the winter oilseeds would address the concerns of the agricultural community for a greater demand for agricultural products and farm profitability, and address the environmental community’s concern for a steeper CI reduction target, support for continuous living cover and soil healthy farming practices, and expanding “clean energy” to support water quality and habitat.

Importantly, in order for this policy to accurately reflect the low-carbon benefits of pennycress and camelina and support their scaling, emissions associated with land use and land use change *must* be accounted for in this policy, as they often account for over 50% of agricultural feedstocks’ carbon intensity. Exempting land-use change from the equation would be like telling people they were running a fair race, only to drive a lagging runner to the head of the pack halfway through.

Responsible lawmakers and concerned advocates would be wise to consider the major, important role these winter oilseeds have for the *future fuels* of Minnesota, and how this policy could advance the goal of a low-carbon Minnesota.

Innovations in cropping systems that are profitable for growers, attached to market pull, and drive the scaling of regenerative agricultural practices across millions of acres can be the “third path” around which our State’s agricultural, rural economic development, and environmental interests rally. If responsibly constructed, the Future Fuels Act could help get us there.

Thank you for your time and consideration.

Regards,



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