Smart Prosperity Institute

SUBMISSION

TO THE GOVERNMENT OF ONTARIO ON THE PROPOSED MODERN RENEWABLE FUEL STANDARD

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Introduction

Smart Prosperity Institute welcomes the opportunity to provide comments to the Government of Ontario on the Discussion Paper "Developing a modern renewable fuel standard for gasoline in Ontario." While Smart Prosperity Institute does not hold expertise in all aspects of low carbon fuel standards, we have developed a significant level of knowledge on general design features of these policies and the role they can play in the transition to a low-carbon economy.

Smart Prosperity Institute (formerly Sustainable Prosperity) is a national research network and policy think tank based at the University of Ottawa. We deliver world-class research and work with public and private partners – all to advance practical policies and market solutions for a stronger, cleaner economy.

General Commentary

Smart Prosperity Institute commends the Government of Ontario for its work to address transportation emissions and its proposal to use a flexible, performance-based regulation. If well executed, the modern renewable fuel standard has the potential to reduce carbon intensity as well as incentivize clean innovation.

A well-designed low carbon fuel standard (LCFS) can play an important role in the policy package needed to transition to a low-carbon economy. As a performance-based technology-neutral standard, an LCFS can create immediate emissions intensity improvements while at the same time incentivizing innovation in alternative fuel technologies and infrastructure. As such, not only can LCFSs improve the emissions intensity of the fuel used in today's vehicle fleets, they can encourage clean innovation and help accelerate the clean energy transition in the transportation sector.

Smart Prosperity Institute's specific comments on design features are presented below, aligned with the categories under which they are presented in the Discussion Paper. We also provide additional comments on elements we think are particularly pertinent to consider in policy design.

For additional information please see Smart Prosperity Institute's recent policy brief, Low Carbon Fuel Standards in Canada.

Specific Comments

Targets and Blending Requirements

Thanks to extensive efforts by the OECD and others, there is a growing body of research that provides guidance on how best to design environmental policies. Regarding targets, evidence shows that setting long-term, stringent, and predictable targets is key to good environmental

policy and creates an incentive for firms to invest in innovative technologies.[1] In the case of an LCFS, complementing short-term targets with medium- and long-term targets provides industry the policy certainty needed to make investments in innovation and infrastructure for the future to achieve the required emissions intensity reductions.

For best regulatory design, targets should be evidence-based, taking into consideration current and projected costs in setting the baseline and targets. This includes careful examination of the availability and cost of alternative fuels and technologies now and in the future. While Smart Prosperity Institute does not have technical expertise to allow us to provide guidance on what degree of reduction is feasible for Ontario's fuel sector from a technical and/or practical perspective, we note that Ontario's proposed modern renewable fuel standard planned a target GHG intensity reduction of 5% by 2020 with the base year left unspecified. British Columbia recently committed to extending its GHG intensity reduction targets for transportation fuels in its LCFS from 10% by 2020 to 15% by 2030, with a 2010 baseline. Without clarity on the base year for the proposed modern renewable fuel standard, it is difficult to compare the stringency of the targets.

While the Discussion Paper asks about specific blending requirements, Smart Prosperity Institute does not have technical knowledge in this area. However, it should be noted that using a performance-based regulation that targets GHG intensity such as an LCFS – in contrast to prescribing a volumetric biofuel content requirement like a traditional renewable fuel standard – can have advantages in terms of (1) reducing compliance costs, (2) allowing for inclusion of more alternative fuels, and (3) incentivizing continuous improvement and greater innovation. For further information on the advantages of flexible regulations, see Green Tape Measures Up.

Flexibility Mechanisms

Just as real-world evidence shows that environmental policies should be stringent and predictable, it also shows that the inclusion of flexibility mechanisms in policy design helps to reduce the cost of compliance for regulated firms as well as increases the opportunity for innovation.[2]

Well-designed LCFSs include flexibility as a key design feature. Credit trading allows for intensity reductions to occur where they are most affordable, reducing compliance costs.[3] This technology-neutral approach can also be designed to support innovation by allowing other fuels or technologies that reduce GHG intensity of fuel to earn credits and be used in place of required emissions intensity reductions of covered fuels. Additional flexibility mechanisms such as credit banking between compliance periods creates temporal flexibility for firms to make emissions reductions when they are lowest cost. This can not only reduce compliance costs but also

[1] Johnstone, N., Hascic, I., and Kalamova, M. (2010) Environmental policy characteristics and technological innovation environmental policy characteristics and technological innovation, Economia Politica, XXVII, n. 2, OECD.
[2] Johnstone, N., Hascic, I., and Kalamova, M. (2010) Environmental policy characteristics and technological innovation environmental policy characteristics and technological innovation, Economia Politica, XXVII, n. 2, OECD.
[3] Ibid..

stabilize the price of credits.[4] Credit banking also provides recognition that regulators cannot perfectly predict the rate of future technological advancement and therefore cannot know the optimal, most cost-effective reduction schedule.

Additionally, enacting a backstop mechanism for the cost of credits can enhance predictability and limit potential cost to industry and consumers by setting a price ceiling that is predictable yet still seeks to incentivize innovation. California and BC have enacted different price backstop mechanisms at around $200 per tonne (USD and CAD respectively) for this reason. The Government of Ontario may wish to consider a similar design feature.

Assessing Lifecycle Emissions

Similar existing policies in BC, California, Oregon, and the European Union all include lifecycle emissions of the covered fuel or technology from production to end-use. However there remains disagreement on the inclusion (or not) of indirect land use change (ILUC). Smart Prosperity Institute does not have expertise in lifecycle emissions accounting, but we note that incentivizing biofuel production can create emissions from ILUC through new farmland replacing forests, grasslands, and other agricultural land, resulting in the release of stored carbon.[5] However, estimating lifecycle GHG emissions is a challenge,[6] with different jurisdictions using different methods. Similarly, some jurisdictions treat different crude feedstocks differently. Broadly, the implication for policy makers is that there does not yet appear to be a common best practice with respect to this design feature.

Transparency

Regular public reporting and provision of data would contribute to the transparency of the policy, provide predictability for businesses. Further, it would allow researchers to examine the efficiency and efficacy of the policy in order to inform future policy design.

Additional Comments

Breadth of Coverage

The proposed modern renewable fuel standard is very narrow in coverage, targeting only gasoline, which limits the benefit of the flexibility mechanisms. All existing LCFSs apply to gasoline and diesel. While the Government of Ontario is already addressing diesel fuel emissions intensity via the Greener Diesel Regulation, given the advantages of a performance-based technology-neutral policy such as an LCFS, consideration should be given to the possible inclusion of diesel in the modern renewable fuel standard at some point in time.

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[4] Rubin, J. and Leiby, P. N. (2013) Tradeable credits systems design and cost savings for a national low carbon fuel standard for road transport, *Energy Policy,* 56:16-28.

[5] Melillo, J.M., Reilly, J.M., Kicklighter, D.W., Gurgel, A.C., Cronin, T.W., Paltsev, S., Felzer, B.S., Wang, X., Sokolov, A.P., and Schlosser, C.A. (2009) Indirect emissions from biofuels: how important? *Science*, 326(5958):1397-1399. DOI: 10.1126/science.1180251

[6] Witcover, J., Yeh, S., and Sperling, D. (2013) Policy options to address global land use change from biofuels, *Energy Policy*, 56(1):63-74.

In addition to the fuels covered, there is an important policy design question related to the ability of fuels not covered to generate credits in the system. Allowing the generation of credits from alternative transportation fuels and technologies, such as natural gas and electricity, can be an important means of encouraging innovation and reducing costs. However, it comes with challenges related to additionality of emission reductions. Determining which emission reductions are from already announced initiatives (such as new electric vehicle charging stations) and which are from the LCFS would be challenging. Issues of ownership of emission reduction credits would similarly require careful consideration.

Policy Interactions

The economic and environmental effectiveness of the proposed modern renewable fuel standard will be impacted by how it interacts with existing and planned policies. As outlined in the discussion paper, Ontario has in place a wide range of policies targeting emission reductions from the transportation sector, which adds to the complexity of the interactions. In the development of the modern renewable fuel standard, consideration should be given to the overlap and potential interactions between policies. This is particularly important in order to ensure the LCFS's effectiveness, to minimize unintended outcomes, to properly attribute emission reductions and incentivized innovation, and to ensure additionality.

In particular, careful examination of how the modern renewable fuel standard will interact with Ontario's nascent cap and trade system (or ETS) will be required, particularly given the ETS's linkages with other ETS systems. For example, California has an ETS system – soon to be linked with Ontario's – as well as an LCFS. Not only can ETS systems and LCFSs within a jurisdiction interact, by linking systems across jurisdictions the complexity of potential interactions increases. This is a complicated area requiring careful consideration. For instance, in jurisdictions with side-by-side but separate LCFSs and ETSs, evidence suggests the LCFS may put downward pressure on permit prices under the ETS by forcing more expensive emission reductions from the transportation sector without necessarily creating additional reductions than would have otherwise been achieved under the cap.[7] However, this may be desirable because the LCFS encourages innovation in the transportation sector (which faces significant barriers to decarbonisation), results in local air pollution reduction benefits as well, and helps to grow the clean fuel sector of the economy.

At the same time that the Government of Ontario is developing a LCFS, the Government of Canada is currently developing a national LCFS that is expected to apply to the fuel intensity of gasoline, diesel and fuels used in buildings and industry. This raises important questions around harmonization or equivalency of the different regimes. Failing to consider these questions could lead to a complex system with dual fuel intensity credit markets working simultaneously with different coverage and fungibility – creating unnecessary complexity for industry.

Equity

[7] Yeh, S., Witcover, J., Lade, G. E., and Sperling, D. (2016) A review of low carbon fuel policies: Principles, program status and future directions, Energy Policy, 97:220-234

While studies are scarce, the proposed modern renewable fuel standard could interact with existing policies to affect fuel and food prices. Price increases could have a disproportional impact on low-income households, rural communities or other socioeconomic groups, and could impact some industry sectors as well. Because LCFSs are still a relatively new form of policy, an understanding of the likely equity impacts would be helpful in order to ensure no unintended outcomes.

Summary

Smart Prosperity Institute commends the Government of Ontario for its work to address transportation emissions and its proposal to use a flexible, performance-based regulation that has the potential to reduce carbon intensity as well as incentivize clean innovation. Low Carbon Fuel Standards are a high-impact policy – they can bring significant GHG emission reductions, stimulate clean innovation, and spur growth in some sectors. But they raise important and complex questions about interactions with existing and planned policies that require consideration in the early stages of policy design.