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August 4, 2022

Matthew Botill
California Air Resources Board
1001 I Street
Sacramento, CA 95814

RE: Comments on July 7, 2022, Low Carbon Fuel Standard Workshop

Dear Mr. Botill:

True North Renewable Energy (TNRE) appreciates your time in hosting the public workshop on potential regulatory revisions to the Low Carbon Fuel Standard (LCFS) on July 7, 2022, and the opportunity to share comments. TNRE would like to express our continued support for the LCFS as a transformational, technology-neutral and performance-based program that has helped to rapidly usher in a wide array of low carbon fuels for California's transportation market. We strongly support amending the LCFS to strengthen carbon intensity reduction targets and maintain the effectiveness of the program, and we appreciate your consideration of the recommendations below.

Leverage the LCFS as a key element of achieving carbon neutrality in California

As you undoubtedly know, and as highlighted in the workshop, the LCFS is one of the most powerful climate policies in California. In particular, it provides a strong and targeted market signal for hard-to-abate sectors, which enables low carbon solutions to come to market that would not necessarily emerge otherwise through the Cap-and-Trade Program or the State's other climate policies. Indeed, recognition that Cap-and-Trade or other policies likely would be insufficient to foster investment in low carbon transportation fuels is what led to the creation of the LCFS in the first place.

TNRE supports strengthening the 2030 carbon intensity reduction target to at least 30 percent and significantly strengthening the program beyond 2030, in line with California's carbon neutrality target and emissions reductions targets and timelines identified in the Scoping Plan. We encourage you to undertake a detailed analysis of appropriate carbon intensity targets that take into account the array of goals, regulatory requirements, incentive programs, other state climate strategies, the potential for ongoing innovation in LCFS pathways, and of course – the urgency with which we need to act on climate change and the role the LCFS plays in advancing some of the most innovative and necessary climate solutions. We look forward to those conversations this fall and seeing further analysis from CARB on this topic.

Expand the LCFS to cover other hard-to-abate sectors, including industry, power plants, and other gas end uses

As CARB turns its attention to additional hard-to-abate sectors, where renewable gases like biomethane or green hydrogen will be necessary to achieve deep decarbonization, it is a good time to expand the LCFS

to stationary sources other than refineries. Even in its short lifetime, perhaps no policy has done more to support technologies needed to decarbonize a wide array of industrial and gas end uses – including carbon capture and sequestration, in addition to renewable gas deployment than the LCFS has.

We should celebrate this outcome and build on it, while also recognizing that the current framework distorts the market for these solutions and focuses them on the transportation sector and away from industry, power plants and other sectors where they are also needed. We encourage CARB to use the LCFS to do more to enable a wide array of technologies to accelerate the State's path to carbon neutrality and net-negative emissions by expanding the program to cover industry, power plants, and other gas or fossil fuel end uses.

Specifically, we encourage CARB to expand the LCFS to include the natural gas storage and carrier systems, which in turn will accelerate decarbonization of the industrial sector and the power sector's critical baseload and peaking power plants covered under SB 100. An approach that covers all fossil natural gas use would build on the successful progress of the LCFS already and help to rapidly decarbonize all sectors of California's economy.

Like the LCFS has done for low carbon fuels in the transportation sector, and the Renewable Portfolio Standard reforms in the electricity sector from nearly 20 years ago – when the state set enforceable targets to shift from fossil-based energy to renewables and created a market framework to (1) encourage new infrastructure, (2) expand energy diversity, and (3) move towards environmentally sustainable energy resources – the end result from expansion of the LCFS to gas storage and carrier systems would jump start a new area of the green economy and support the successful transition of fossil-based gas delivery systems away from natural gas. Setting targets to replace natural gas and creating environmental value for low- and zero-carbon renewable gases beyond the transportation sector will attract investments and accelerate progress toward reaching the state's climate goals in the hard-to-abate sectors of the economy that currently rely on natural gas.

Support waste-based pathways and compliance with SB 1383 targets

We appreciate CARB teeing up for conversation potential limits on crop-based feedstocks, especially soy oil for renewable diesel production. While TNRE does not have a position on what might represent the most appropriate limit on crop-based feedstocks, we do note that the state has a significant waste-based resource to be put to use, and we encourage CARB to prioritize doing so in the LCFS, Scoping Plan, Cap-and-Trade and other potential programs.

This potential resource is quantified in the Lawrence Livermore National Laboratory Report, *Getting to Neutral*, which identifies 142.7 $MMTCO_2e$/year in potential climate benefits in 2025 associated with waste-based to energy pathways. This is more than emissions from all passenger vehicles in the state, and if all directed toward on-road transportation, would represent a greater than 90% reduction in carbon intensity below 2010 levels.

Suffice to say, California has more than enough waste resources to achieve whatever carbon intensity target it may set. Companies like TNRE and others are eager and well-positioned to put it to use, but the market needs additional support to ensure these resources are put to the best use. We encourage CARB to prioritize waste-based resource pathways in the LCFS, especially from diverted organics, in order to

advance the state's SB 1383 and organics diversion goals, as well as the state's broader climate change objectives.

Update pathways' inputs based on the latest science, including the global warming potential for methane and assumed landfill methane capture values

As CARB continues to implement this technology-neutral and performance-based standard, it is imperative to incorporate the latest science to accurately capture emissions impacts or benefits associated with various fuels and projects. Assumptions related to biomethane production from organics waste diversion may be particularly outdated. As part of updates to the GREET model and LCFS program, we encourage CARB to:

- Update global warming potential (GWP) values for methane and other climate pollutants based on the latest science, including the most recent climate assessment from the Intergovernmental Panel on Climate Change. For methane, this would change the value from 25 to 28-36.[1]

- Update the emissions factor from landfills based on the latest science from aerial surveys conducted by the state, with CARB's support, and other measurements. These studies show that landfills are a far greater source of methane emissions than currently assumed,[2] and therefore, that alternatives to landfilling organics provide less of a climate benefit than they do in reality. The result is to discourage and undervalue alternatives to landfilling organics, which complicates efforts to meet the State's short-lived climate pollutant reduction targets under SB 1383.

We appreciate CARB may face additional considerations before updating these factors in the Cap-and-Trade program or for the State's inventory. However, those programs can be updated on their own appropriate timelines. Using the current LCFS amendment process to incorporate the latest scientific understanding will only enhance the program and support its continued success, without impacting CARB's other programs.

We think these efforts would also align well with the Administration's focus on detecting and accurately measuring methane leaks and emissions. With ongoing development of the state's methane satellite network and recent direction from the Governor to create a Task Force to identify and address methane leaks from oil infrastructure near communities, updating methane emissions valuations and accounting for landfill methane will importantly build on California's leading efforts to tackle potent methane pollution.

We look forward to the discussions ahead

We again want to thank you and reiterate our support of the LCFS program. We look forward to working with you on future changes and remain enthusiastic about creating new, disruptive green economic

[1] https://www.epa.gov/ghgemissions/understanding-global-warming-potentials

[2] For example, see: Duren, R.M., Thorpe, A.K., Foster, K.T. et al. California's methane super-emitters. Nature 575, 180–184 (2019). https://doi.org/10.1038/s41586-019-1720-3

growth opportunities, green jobs and continuing to lead in helping the state overachieve on its climate goals.

Sincerely,

Gary Aguinaga
President
True North Renewable Energy, LLC