

February 20, 2023

VIA ELECTRONIC FILING

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

Re: Proposed Low Carbon Fuel Standard Amendments

Dear Mr. Botill,

Divert is an impact technology company with a mission to protect the value of food. Based in Concord, Massachusetts with significant operations within California, we were founded in 2007 with the purpose of creating innovative and efficient solutions toward eliminating food waste. We are passionate about proving that environmental sustainability can be as good for business and consumers as it is for the planet. To that end, Divert is focused on decarbonizing unconsumed food through source reduction, food rescue, and recycling.

Divert operates 13 facilities across the U.S., and works with over 5,400 retail stores. Divert works across the retail food supply chain, implementing training protocols and technology to track food and gather data about what is wasted and why. Divert provides insights that enable our customers to change behaviors and ultimately reduce waste through source prevention and rescue programs. For inedible food, Divert created the first FDA Food Safety Modernization Act (FSMA)-compliant reverse logistics process to aggregate wasted food and transport it to one of Divert's anaerobic digestion facilities at no additional cost and with negative carbon intensity. At these anaerobic digestion facilities, before it's digested, wasted food is processed through a proprietary depackaging system to remove excess moisture and unwanted contaminants – such as wrappers, stickers and rubber bands – that make this commercially generated organic material unsuitable for composting. Divert's facilities capture the biogas naturally released during anaerobic digestion, which is captured and purified into renewable natural gas.

We work towards our purpose every day, and have achieved successes to:

- Use our technology platform to optimize the reduction of food waste generation for the retail food industry, which is the largest generator of food waste in the U.S.
- Cultivate partnerships with retailers and food banks to increase donations for unsold food that meets food donation guidelines but would otherwise be bound for the landfill.
- Establish ourselves as the largest processor of food waste in the U.S., converting food waste to renewable natural gas via proprietary liquefaction and anaerobic digestion.

Divert is committed to helping California reduce short-lived climate pollutants through the rescue, recovery, and recycling of food waste. As California continues to achieve its food waste reduction and carbon neutrality goals, Divert is:

- Partnering with Feeding America, local food banks, and a private retailer to service over 900 California based stores to identify and facilitate the rescue of unsold food to provide to local communities and families in need.
- Providing California food retailers access to Artificial Intelligence (AI) and Internet of Things (IoT) technology to maximize source reduction and improve the proper handling and freshness of perishable goods.
- Expanding food waste processing and anaerobic digestion capabilities with a new California food waste to energy facility that makes carbon negative renewable natural gas (RNG).

We are supportive of the efforts made by the California Air Resources Board (CARB) and the State of California to achieve its carbon-neutrality goals and offer comments to the Low Carbon Fuel Standard Amendment below.

**Avoided Methane Crediting Should Continue in LCFS and Remain Available to Those Addressing The goals set forth in SB 1383 or Until a Realistic and Proven Replacement Policy is Implemented**

SB 1383 requires the state to achieve a reduction in SLCP emissions, including a 40 percent reduction in methane, by 2030.<sup>1</sup> In its 2022 Scoping plan, CARB outlines its SLCP related emissions achievements, while noting that these reductions have not kept pace with the broader progress towards California's decarbonization goals.<sup>2</sup> The document states that "more aggressive action is needed" to meet the state's legislative goals.<sup>3</sup>

As CARB has acknowledged, the emission impacts of SLCP's are especially strong over the short term, and timely action on reducing these pollutants can have an immediate beneficial impact on climate change and public health.<sup>4</sup> Achieving reductions in SLCP's would help reduce ambient levels of ozone and particulate matter and the cardiovascular and respiratory effects associated with air pollution, and many of these benefits would accrue in disadvantaged communities, which are often located near sources of SLCP emissions.<sup>5</sup>

SB 1383 requires a 40 percent methane reduction target by 2030, but by 2025 the state is expected to remain roughly 8 million tons short of anaerobic digestion or composting capacity.<sup>6</sup> Scaling up California's organic waste recycling infrastructure is crucial to achieving the adopted goals and such infrastructure can be incredibly costly to local jurisdictions. Private businesses can help the state achieve these goals with project investments both inside and outside of California.

Despite the state's need to reduce short lived climate pollutants and to scale organics processing infrastructure, the Proposed Rule has outlined a plan to phase out the avoided methane crediting in the LCFS program. This phase out is premature and leaves an incredible amount of uncertainty for investors that are looking to scale organics processing solutions that promote decarbonization within the state. These types of projects are often reliant on LCFS crediting and it would be counterproductive to propose

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<sup>1</sup> California State Legislature, "SB 1383 - Short-lived climate pollutants: methane emissions: dairy and livestock: organic waste: landfills" 2015

<sup>2</sup> California Air Resources Board, "Final 2022 Scoping Plan Update", Page 224

<sup>3</sup> ID

<sup>4</sup> California Air Resources Board, "Short-Lived Climate Pollutant Reduction Strategy", Page 1

<sup>5</sup> California Air Resources Board, "Short-Lived Climate Pollutant Reduction Strategy", Page 13

<sup>6</sup> Governing Magazine (March 10, 2022), "[It's Time America stopped Throwing Out Food Waste](#)"

an arbitrary phase out of avoided methane crediting without a detailed plan for developing a replacement policy or continuing to provide a similar credit to projects that are working to help the State achieve the goals set for in SB 1383. To continue with a phase out will lead to significant project uncertainty, an increased potential for stranded assets, and could discourage future investment within the state of California.

We continue to support CARB analyzing phase-out of avoided methane crediting once replacement policies are in place. However, we do not support the Proposed Amendment's *required* phase-out of avoided methane crediting *without* a suitable replacement policy. Divert would recommend that CARB work with industry stakeholders to determine what alternative incentives are needed to advance projects that directly achieve the state's SLCP emissions reduction goals.

### **Tier 1 Calculator: Recognition of Methane Benefits of RNG Projects Diverting Organic Material from Landfills Should be Revisited and Expanded**

Both CARB and US EPA have mandatory emission control requirements for landfills that help reduce methane emissions, yet research literature suggests that many landfills still contribute methane emissions at rates that are much higher than previously estimated.<sup>7</sup> A 2019 study by NASA JPL estimates that landfills' contribution to the state's methane emissions is double current estimates – approximately 41% of all methane point source emissions in California.<sup>8</sup>

LCFS can help address methane from organic waste handling through better recognition of the benefits of RNG projects that divert organics from landfills and into dedicated digesters. Better quantification of the methane benefits of avoided landfilling and incenting such reductions in the LCFS should be a key focus for CARB, rather than considering arbitrary dates for eventual sunseting of avoided methane crediting.

We support and appreciate the change for years 1-3 in the *Tier 1 Calculator Biomethane from Anaerobic Digestion of Organic Waste* acknowledging the fact that significant methane emissions occur from open face of the landfill. However, maintaining the 75% assumed capture rate for the remaining years is inaccurate and does not align with current science, most notably EPA's October 2023 EPA findings that 61% of methane from landfilled food waste escapes to the atmosphere (39% capture rate).<sup>9</sup>

Given that EPA was the source for prior capture rate assumptions (with the 75% capture coming from a 1997 EPA study), EPA's much more robust and up-to-date findings should be immediately adopted and the 2023 EPA findings of 39% capture rate incorporated into the Tier 1 calculator.

### **Tier 1 Calculator: Adjust Calculation Inaccuracy Related to Fugitive Methane from Biogas Upgrading**

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<sup>7</sup> This fact should be noted by those that believe a mandate to control is the sole solution that should be employed for other sources of fugitive methane, such as agricultural manure methane emissions.

<sup>8</sup> 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>

<sup>9</sup> United States Environmental Protection Agency, Office of Research and Development, October 2023, *Food Waste Management: Quantifying Methane Emissions from Landfilled Food Waste* [https://www.epa.gov/system/files/documents/2023-10/food-waste-landfill-methane-10-8-23-final\\_508-compliant.pdf](https://www.epa.gov/system/files/documents/2023-10/food-waste-landfill-methane-10-8-23-final_508-compliant.pdf)

As written, the CI score Tier 1 Calculation for fugitive methane emissions from biogas upgrading potentially creates a significant amount of inaccuracy. The calculator estimates tail gas emissions, which is a very small number, by subtracting two very large numbers - the digester gas heating value and the RNG and flared gas heating value - from each other. This can mean that an error as small as 1% in the digester gas flow or methane content can recreate calculation errors as large as or larger than the entire CI contribution from factors like tailpipe emissions, pipeline transport, or fuel station compression which have been meticulously calculated.

The intent to accurately measure fugitive methane emissions is understood and effort should be made to ensure knowledge of what these fugitive emissions are, but we believe that a static assumption for fugitive losses in the upgrader would lead to more accuracy over the long term. A static assumption would also create less of a need for true-ups against fully certified CI scores due to measurement fluctuations within typical device uncertainty. We would welcome the opportunity to work with CARB to determine how this static assumption can be created and suggest that it potentially be based on technology type or vendor documentation.

### **A Full Credit True-up Remains Necessary to Properly Recognize the True Environmental Performance of RNG Pathways**

We support the Proposed Amendment's inclusion of a "Credit True Up" after Annual Verification. When implemented properly, such a concept can ensure that the LCFS program correctly accounts for the full GHG benefits all fuel pathways produce. However, we believe the Proposed Amendment's true up language may be mis-drafted as it appears to *not* allow true ups during the temporary pathway period.

This is confusing because, at both October 2020 and August 2022 LCFS Workshops, CARB Staff proposed providing a credit true up to correct for under crediting to pathway holders *only* during the period where a project is using temporary CI scores at the outset of their credit generation. At the time, CARB workshop material stated that such a limited true up would help reduce the pressure on CARB from developers to process LCFS applications quickly.

We continue to support a full true up to verified actual CI performance for all pathways (temporary, provisional, and fully certified).<sup>10</sup> As an anaerobic digester is going through its application period, it is often assigned a carbon intensity score that substantially underestimates the greenhouse gas benefit (and associated lost revenue) during the project's startup period. This will lead to increased pressure on CARB developers to process LCFS applications quickly - something that CARB was actively hoping to avoid - as digester operators scramble to make their investments viable. If pathways were allowed to fully "true up" their LCFS credit generation to their actual CI score, once that score was able to be calculated based on actual greenhouse gas performance data, these problems can be resolved.

The current LCFS regulation requires an annual verification to determine the true CI score, relative to the certified CI score. But the result of that annual verification is that pathway holders can only give up credits if their actual CI score goes up—they cannot also gain credits if their verified CI score goes down. We believe that, absent some manipulation or misrepresentation, the exchange should go both ways. With proper safeguards around the timing of the true up and potentially some requirement to hold credits in

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<sup>10</sup> See the Renewable Natural Gas Coalition's comment letters from prior workshops dated January 7, 2022, August 8, 2022, and September 18, 2022.

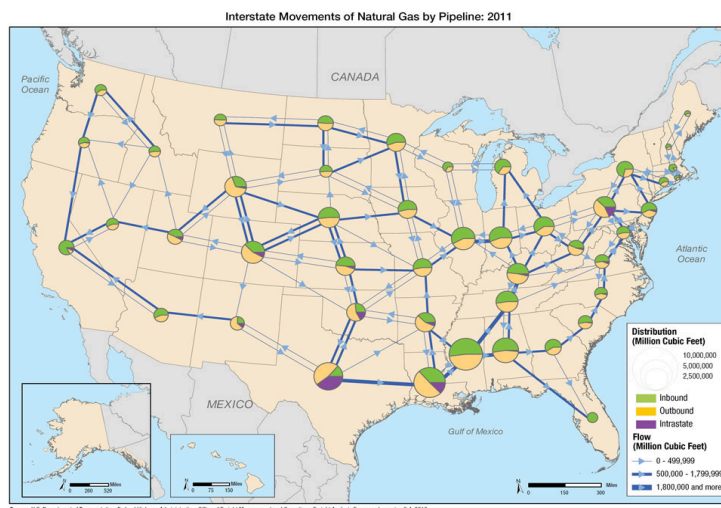
reserve, this policy can serve to encourage very low carbon pathways whereas the current policy discourages very low carbon fuels in favor of less variable fuels.

**Because it is Physically Interchangeable with Fossil Natural Gas, Renewable Natural Gas can be Distributed in the Same, Longstanding Natural Gas Pipeline System that has Served California for Decades. This System Can Move Gas Across North America, therefore, a 50% Flow Requirement is Arbitrary and Unjustified.**

In the Proposed Rule, CARB staff is proposing a deliverability requirement on biomethane projects and is requiring projects to demonstrate that eligible biomethane is carried through common carrier pipelines that physically flow within California or toward end use in California 50% of the time on an annual basis. Divert understands that this requirement would be put in place to ensure that California is making progress on the State's methane reduction targets, but the requirement would be detrimental to projects that are aimed at helping the state realize its short lived climate pollutant goals.

Natural gas currently flows throughout the United States depending on shifts in production, demand, weather, export pricing, and natural gas balancing. All major North American gas pipelines are interconnected, sharing gas flow and balancing, which can be contrasted with the power sector that is a more balkanized grid with limits on wheeling between regions—despite the efforts mentioned above to increase interconnection of the power grid.

When RPS limitations were developed, gas was just beginning to come from all over the country to California. The map below shows cross-country flows, dating back to 2011, illustrating the interconnectedness of the natural gas pipeline system in the United States.<sup>11</sup>



Since the RPS provisions were developed, the gas system has only grown more interconnected. For example, natural gas now flows from the Northeast region to all areas of the United States, from Texas to

<sup>11</sup> U.S. Department of Transportation Federal Highway Administration, *Interstate Movements of Natural Gas by Pipeline: 2011 Map*, [https://ops.fhwa.dot.gov/freight/freight\\_analysis/nat\\_freight\\_stats/interstatenatgas2011.htm](https://ops.fhwa.dot.gov/freight/freight_analysis/nat_freight_stats/interstatenatgas2011.htm) (last modified Mar. 23, 2020).

California, and from the Rockies to California. The entire pipeline system in the United States is interconnected and in many cases is now bidirectionally flowing.

Natural gas has long been distributed through pipeline systems tracking volumes being injected and withdrawn throughout the entire system. These volumes are carefully tracked, as the pipeline system typically has state and federal oversight and third-party pipelines have metering throughout the system. Not only does this create a robust and liquid market for physical gas delivery across North America, that market already optimizes moving gas from supply to demand in a least cost (and lowest GHG)<sup>12</sup> fashion.

Given the interconnected nature of the US Gas pipeline, deliverability requirements can create a difficult burden on producers of natural gas to prove compliance. In addition, it will limit the production of biomethane for use in organics processing and in sectors that are hard to electrify. We strongly recommend that CARB avoid implementing deliverability requirements and instead maintain the status quo of the program to allow for book and claim for RNG Programs across North America. As California currently sets the precedent for the nation's decarbonization efforts, it is crucial that the state accept book and claim requests for projects across North America to better incentivize states to decarbonize. As new states adopt LCFS programs, it is important to consider what such a precedent would create as they adopt policies championed by CARB. Instead, Divert would welcome the opportunity to work with CARB to better explain the ramifications of such a policy move and discuss alternatives for a productive outcome.

### **Increased Program Ambition as it is Critical for Continued Methane Reduction and Growth in All Low Carbon Fuels**

We support the effort that CARB staff has taken to outline future scenarios that set forth carbon intensity reduction goals for 2030 and beyond, however we feel that the biggest barrier to continued LCFS-driven methane reduction is the Proposed Rule's lack of overall ambition. Given the LCFS credit surpluses seen over the past two years and as CARB staff has highlighted in several of their recent workshops, the LCFS program has significantly exceeded expectations and low carbon fuels are coming to the market quicker and in greater volumes than previously anticipated. With this success, a significant step-down in the Annual Carbon Intensity (CI) Benchmarks is critical at this time. Based on all recent market information to date in 2024, the program will have produced many more credits than deficits. This will cause the bank to continue to build rapidly, prices to fall, and low-carbon investment to decline.

We urge CARB to adopt goals to reduce this trend and promote a healthy market. To accomplish this goal, CARB must adopt the appropriate stringency trajectory for the CI Benchmarks. Throughout this rulemaking process, a diverse group of clean fuel voices have contracted with the consulting firm ICF to independently prepare and submit an analysis of what program targets are feasible. In their analysis they are recommending that:

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<sup>12</sup> Moving gas requires additional energy and emissions from compression stations and potential methane leakage. These factors are already correctly accounted for in the LCFS CI modeling, which assumes physical gas flow from source to sink, regardless of the ability to trace actual molecule path. This provides a fair and appropriate disincentive that recognizes GHG disbenefits of moving gas from projects located farther from California, all else equal.

*A 2025 Target of >25% is Needed to Address Current Oversupply Issues. This Level of Ambition Should also be Implemented in Q3 or Q4 of 2024, if Administratively Possible.*

The ICF work demonstrates that increasing the program's benchmarks to set a 25% CI reduction below the 2010 Baseline in 2025 would be sufficient to begin to draw down the credit bank, reestablish a demand for additional expansion in low carbon fuel supply, and therefore drive additional greenhouse gas abatement. Further, starting the step-down as soon as possible and avoiding unnecessary bank build is crucial. We recommend that CARB target the step-down to occur on 7/1/2024 to a level of 25% below the 2010 baseline and maintain that level through 12/31/2025 (assuming CARB elects to retain the updated 2010 diesel baseline value).

*A 2030 Target of >30% can be Achieved with a Lower Credit Price Trajectory than Predicted in CARB's Modeling of the Primary ISOR Scenario*

ICF's work shows significantly different LCFS credit price outcomes than CARB's ISOR analysis of the primary scenario. We believe that ICF's outlook is better informed by the true near-term supply outlook across all low carbon fuels and a better understanding of the potential other areas of public policy support (e.g., federal biofuel policy). Given that this deeper understanding demonstrates that it is possible to achieve greater mid-term reductions, we recommend that CARB continue to target at least a 30% CI reduction by 2030.

## **Conclusion**

By considering the above recommendations, CARB staff has the opportunity to inspire further innovation in the low-carbon fuel sector while ensuring that the state does not prematurely reverse its historic emissions reduction accomplishments. These suggestions will strengthen the LCFS program by:

- Incorporating new innovations in emissions reduction and inspiring additional carbon reduction operational improvements.
- Ensuring that the LCFS program prioritizes the removal of short lived climate pollutants by keeping incentives in place to develop necessary organics infrastructure
- Creating opportunities for a cohesive and uniform RNG marketplace across North America

We would welcome an opportunity to discuss these suggestions further and additionally talk through our operations to provide further context to our suggestions. If you have any questions, please do not hesitate to contact me at [cthomas@divertinc.com](mailto:cthomas@divertinc.com) or at 202-421-1107. We are eager to collaborate further on this critical effort.

Sincerely,



Chris Thomas  
Vice President of Public Affairs  
Divert Inc.