



September 19th, 2022

Ms. Liane Randolph, Chair
California Air Resources Board
1001 I Street, Sacramento, California 95814

SUBJECT: Transfer Flow, Inc.'s Public Comment regarding CARB's Low Carbon Fuel Standard

Dear Chair Randolph:

Transfer Flow appreciates the opportunity to comment on the proposed changes to The California Air Resources Board's (CARB) Low Carbon Fuel Standards (LCFS).

Transfer Flow has been in business in beautiful Northern California since 1983, manufacturing high-quality liquid fuel systems. In 2016, Transfer Flow received the small business of the year award from the California State Assembly.

Transfer Flow supports CARB's efforts to achieve deep, rapid emissions reductions from mobile sources. Unfortunately, CARB's blatant favoritism of battery-electric technologies to the detriment of renewable, sustainable, low-NOx, and carbon-negative liquid or gaseous fuels does not support the goal of immediate, near-term emissions reductions.

To meet California's ambitious goal of carbon neutrality by mid-century, CARB must take a close look at the lifecycle carbon intensity of all resources and the opportunities for carbon-negative emissions. Biogas from dairy anaerobic digesters reduce short-lived climate pollutants emissions from manure and displace fossil fuels. The carbon intensity of biogas can be negative on a life cycle analysis basis and can be lower than other renewable energy resources, including solar and wind power. Transfer Flow urges CARB to focus on the lifecycle carbon emissions of all fuels and technologies under discussion. Moreover, CARB must ensure that the LCFS program metrics are technology neutral and lifecycle carbon intensity based.

Currently, there is limited availability of HD ZEVs on the market, with only two manufacturers: BYD and Volvo. Volvo's HD ZEV has a limited 100-mile range making it impractical for many applications. Other



applications such as rural use, utility vehicles, and portable generators for emergency use are ill-suited to adopt battery-electric technologies. Heavy-duty battery-electric technologies are not commercially available on a widescale basis. Even if heavy-duty battery-electric technologies were available, there is an insufficient charging infrastructure to support the mass deployment of battery-electric technologies. The only serious debate is how to quickly decarbonize California's transportation sector in the near term and whether to continue to use high-polluting petroleum fuels or switch as soon as feasible to using low-NOx, renewable and sustainable biofuels. Low-NOx trucks and equipment are available now and are 90 percent cleaner than comparable diesel internal combustion engines. Furthermore, the average carbon intensity value for all renewable natural gas (RNG) sold into California's transportation sector for 2021, on average, was negative 33.36. This is the lowest known carbon transportation fuel available on the planet today. Consequently, RNG use combined with low-NOx trucks in heavy-duty transportation should be encouraged as a core strategy for achieving the purpose and credibility of CARB's emission reduction policies.

A crucial part of the lifecycle analysis for organic waste-derived fuels – including biomethane, hydrogen, and electricity – is the calculation of avoided emissions. For fuels generated from diverted organic waste that would otherwise be disposed of in landfills and converting them into renewable fuel, it is critical to assess avoided landfill emissions and use the best available science to do so. CalRecycle estimates the need to divert 20M tons of organic waste annually from landfill. The most efficient use of this diverted waste is to produce carbon-negative RNG.

The most cost-effective and readily available clean heavy-duty truck technology is low NOx trucks with 0.02g/bhp-hr engines. Low NOx trucks powered by carbon-negative renewable natural gas (RNG) is a proven solution to immediately help the State of California realize its decarbonization goals. Therefore, we support revisions to the LCFS that will further decarbonize the state's transportation fuels and provide an increasing range of low-carbon renewable alternatives, which reduce petroleum dependency and achieve air quality benefits.

Founded as a fuel-neutral program, the LCFS reflected a commitment to an "all-hands-on-deck" approach to reducing emissions with California's farmers, automakers, fuel producers, goods movers, and environmental advocates working together to combat climate change and clean our air. The program still represents a critical component of CARB's transportation decarbonization strategy by producing renewable, low-carbon fuel alternatives like RNG.

California can and should promote the production and use of all lower carbon renewable fuels while battery-electric development and deployment continues. Moreover, we should allow low-carbon renewable fuels to serve as a compliant alternative since ZEVs lack commercial availability, supporting infrastructure, and operational compatibility. Low to negative carbon fuel sources and the vehicles that use them are critical to achieving our carbon neutrality goals within the proposed time frame.

While the use of RNG in any industry application will yield significant and beneficial emission reductions, the most effective immediate use for RNG is in the transportation sector to aid California in achieving its



carbon neutrality goals, most likely ahead of schedule. Most medium- and heavy-duty trucks on California's highways are powered by diesel fuel. This significant black carbon source makes California's transportation sector the largest source of greenhouse gas emissions. Therefore, eliminating diesel truck emissions is the fastest and most effective way to meaningfully reduce emissions and decarbonize transportation. Nothing can reduce black carbon more effectively than renewable fuels when used to displace traditional diesel vehicles. The most readily available option today is RNG, which is certified by CARB as 90% cleaner than today's certified diesel vehicles and can reduce diesel particulate matter 100% when powering today's medium- and heavy-duty trucks.

Transfer Flow appreciates CARB's initial concern that allowing food crops to be used for biofuel production could impact food supplies and prices. "Food vs. fuel" is an oversimplification and dramatization that pits agriculture against consumers. These concerns are adequately addressed by supporting science-based models that accurately reflect food, fiber, and fuel production. Limiting crop-based fuels, as suggested, is not based on science, and CARB should not be swayed by false assumptions or inaccurate correlations about food versus fuel.

The pace of low-carbon fuel availability and use in California has exceeded expectations. This success should be applauded, making it possible for CARB to increase the stringency of the LCFS program before 2030. Transfer Flow supports continued analysis of this target setting in the LCFS rulemaking to maximize the availability and affordability of low-carbon fuels in both the short- and long term.

Since liquid and gaseous fuels with low CI values can compete with battery-electric technologies, CARB should ensure these technologies remain available in the program and are treated fairly as enablers of carbon reductions.

Sincerely,

Laurel Moorhead, E.I.T.
Regulatory Compliance Engineer