

August 8, 2022

California Air Resources Board
Attention: Cheryl Laskowski
1001 I Street
Sacramento, CA 95814

RE: CARB Scoping Plan Workshop July 7, 2022

Cheryl,

Aemetis, Inc. hereby offers comments on the proposed amendments to the Low Carbon Fuel Standard (LCFS) regulation as presented at the CARB Scoping Plan Workshop on July 7, 2022.

To support the success of the LCFS, Aemetis recommends the following:

- (1) Adopt an automatic mechanism to protect the range of LCFS credit prices;**
- (2) Maintain consistent and long-Term LCFS targets;**
- (3) Include the in-state air quality benefits of biogas (methane) capture vs. out-of-state biogas projects;**
- (4) Prioritize fuels in the LCFS that reduce short-lived climate pollutants.**

Headquartered in Cupertino, CA with operations in the Central Valley (Stanislaus County), Aemetis, Inc. is one of California's leading renewable fuels companies focused on below zero carbon intensity products. As the owner and operator of the largest fuel ethanol production facility in the state, Aemetis has supplied over 60 million gallons per year of low carbon biofuel and approximately 450,000 tons (annually) of high protein feed to over 80 dairies for the past decade. Aemetis has expanded operations to become a leading dairy renewable natural gas (RNG) developer and producer.

Aemetis recently acquired the 125-acre Riverbank Industrial Complex, a former US Army ammunition plant near Modesto, to build and operate a 90 million gallon per year sustainable aviation fuel (SAF) and renewable diesel (RD) plant.

Aemetis has signed \$3.4 billion of SAF supply agreements with Delta, American, Qantas, Japan and other airlines, as well as \$3.2 billion of RD agreements to support the development of the \$430 million Riverbank SAF/RD production facility.

To further the Governor's goals of sequestering 20 million metric tonnes of CO₂ by year 2030 and 100 million metric tonnes by year 2045, Aemetis is currently developing two Carbon Capture and Sequestration (CCS) injection wells at its two biofuels plant sites. Each well will have the capacity to permanently sequester one million metric tonnes of CO₂ per year.

These projects will expand Aemetis' contributions to the (LCFS) program as both a producer of LCFS credits and by reducing harmful climate pollutants through decreasing the use of carbon-based transportation fuels.

In 2019, Aemetis Biogas LLC was formed to develop and operate dairy methane digesters for the production of below zero carbon intensity (CI) RNG for use as transportation fuel. When fully built out, the 60+ planned dairies in the Aemetis biogas project are expected to reduce harmful methane emissions in California's Central Valley by capturing more than 1.6 million MMBtu of dairy methane annually. Aemetis will invest over \$380 million in the dairy RNG project, which add thousands of direct and indirect jobs to the region over the next five years. .

The amount of methane captured by the completed Aemetis Biogas project will be roughly 40 percent of the credits generated across all fuel types of the LCFS program during 2020.

Similarly, the Aemetis SAF, RD, and CCS facilities will be significant contributors to the LCFS program.

1. Adopt an Automatic Mechanism to Protect the Range of Prices of LCFS Credits

In August 2020, CARB conducted a public hearing to disclose a proposed "price cap" mechanism to protect the "\$200/MT plus cost-of-living increase" for LCFS credits. At the hearing, CARB proposed to provide newly issued LCFS credits to the regulated utilities in California to increase the supply of LCFS credits as much as needed to drive down the LCFS credit price below the \$200/MT price cap.

The price of LCFS credits in August 2020 was \$218. As of today, approximately \$88 per credit, an approximate 60%% decline in LCFS revenues for projects.

Lenders and investors listened to CARB closely, hearing that CARB was fully committed to enforcing a price cap on LCFS credits by directly intervening in the LCFS market to add LCFS credits in order to drive down LCFS credit prices.

The crash in the price of LCFS credits resulted in a loss of 60% of the LCFS revenue for operating plants and for projected financings of new production plants. During the 2020 to 2022 timeframe,

an estimated \$280 million of debt and equity investment was lost in California due to the LCFS credit price crash as 50% of the ethanol production capacity in the state was shut down, and hundreds of direct and indirect employees were terminated.

In discussions with CARB staff during the past year, Aemetis has focused on a key message: the decision to invest hundreds of millions of dollars into low carbon intensity biofuel production or biogas production is based on generating LCFS revenues. Therefore, the amount of LCFS revenue that is projected to be received by a project is the determining factor in bank lender credit committee decisions.

To provide clarity and predictability to the LCFS revenue projections used by lender and investors, and to establish a range of revenues that can be expected to repay project financing loans, Aemetis proposes the following automatically adjusting formula to be adopted by CARB as a self-regulating mechanism:

Automatic LCFS Credit Adjustment Mechanism:

1. Average Price of LCFS Credits for the past six months $>$ \$200 = no action taken to increase or decrease LCFS credit requirements

Example: \$210 LCFS credit price is more than \$200, so no action is taken to adjust LCFS credit requirements

2. Average Price of LCFS Credits for the past six months $<$ \$200 = increase the number of LCFS credits required in the next six months by the % that the LCFS credit price is below \$200

Example: \$190 LCFS credit price is 5% below the \$200 target price, so the number of LCFS credits required in the next six months after the automatic LCFS credit adjustment would increase by 5% from the then-applicable LCFS credit requirement

This mechanism is self-regulating, since the LCFS credit price would gradually rise until it exceeds \$200. This formula would cause LCFS traders and obligated parties to buy credits when the price dips below \$200 per credit, since the self-regulating formula will cause the price to rise to \$200 during the next six-month period by automatically increasing the number of LCFS credits required by the program.

If an automatic adjustment of the lower range of LCFS prices is seen by the market as a reliable management of LCFS demand to maintain a minimum \$200 per credit price, lenders and investors will use \$200 as the LCFS credit price for 20-year project planning.

This price stability will encourage investment in innovation to develop and commercialize new technologies to decarbonize transportation, since long-term investments are attracted by long-term price stability. Trading the range of \$200 to \$300 entails significant uncertainty about revenues, since the gap between \$200 and \$300+ is a significant amount of annual revenues.

However, the \$200 LCFS price floor drives investment in new projects and technologies, with the potential of a \$300 LCFS price as an upside to the investment plan in order to repay lenders more quickly than planned – and then re-invest in the expansion of production.

If not, many renewable projects will not get built, since lenders and investors will continue to take a “wait and see” attitude about the level of commitment to the LCFS shown by CARB.

In the view of lenders and investors, the stability of the LCFS credit market is a direct measure of CARB’s commitment to decarbonization. Therefore, reduced CARB commitment to a predictable LCFS credit price translates into lower revenue/ROI for decarbonization projects and less overall investment.

2. Maintain Consistent and Long-Term LCFS Targets

Aemetis strongly supports CARB’s proposal of setting 5-year interim targets out to 2045, as long as the annual targets for the early years through 2035 are clearly stated and an annual automatic adjustment mechanism is adopted to allow LCFS credits to trade in a predictable price range of \$200, plus Cost-of-Living increases.

Building new, long-term renewable energy projects is inherently riskier than maintaining current investments. New projects based on new technologies and supply chains are complex; they can take thousands of hours and hundreds of millions of dollars to come to fruition, often taking years or even decades to develop and build.

Long-term and consistent policy is crucial for stability and growth of these markets. Establishing 5-year interim targets will provide benchmarks and a smoother path for the market by providing longer term market signals and greater certainty, but annual targets will reduce the price volatility of LCFS credits.

3. Include the In-State Air Quality Benefits of Methane Capture vs. Out-Of-State Biogas Projects

The CARB Staff Presentation on July 7, 2022, shows that biomethane use, along with other biofuels, is increasing in California. The in-state capture of methane for the production of RNG provides far greater air quality and environmental justice benefits to California than out-of-state projects.

Unfortunately, the vast majority of biomethane sold into the LCFS program is currently generated out of state and little, if any, of the out-of-state biomethane is physically delivered to California. A biogas project in Indiana does not improve air quality in California, reduce the unemployment rate in disadvantaged communities in California, or provide new investment in disproportionately minority communities in rural areas of California.

While out-of-state biomethane capture certainly provides global climate benefits, providing an equal number of LCFS credits to out-of-state biomethane producers puts in-state producers at a

cost disadvantage due to the significantly higher taxes, labor, housing, real estate, equipment, energy and other costs of building and operating a biomethane project in the California.

CARB should further incentivize in-state biomethane production in the LCFS program by providing In State Air Quality Benefits to California RNG producers.

4. The LCFS Should Prioritize Fuels that Reduce Short-Lived Climate Pollutants

Aemetis urges CARB to maintain the LCFS as a program based on the carbon intensity of fuels, as the program was originally designed. This ensures that the program remains focused on its overarching goal - reducing the carbon intensity of transportation fuels – and achieves the greatest potential carbon reductions, while measuring progress much simpler and more objective.

If, however, CARB is going to continue to adopt incentives for infrastructure or other goals beyond carbon intensity, then Aemetis urges the Air Board to adopt additional incentives for fuels that reduce Short-Lived Climate Pollutants (SLCP).

Adding incentives for fuels that reduce SLCP emissions makes sense for several reasons. First, SB 1383 requires significant reductions in SLCP emissions – a 40 percent reduction in methane and a 50 percent reduction in anthropogenic black carbon - by 2030.¹ Second, climate science is now very clear that reducing SLCP emissions is by far the most urgent step we can take to address climate change as it is one of very few measures that begins to cool the climate right away – or even in the next several decades. As CARB’s *Short-Lived Climate Pollutant Reduction Strategy* states, “The science unequivocally underscores the need to immediately reduce emissions of short-lived climate pollutants (SLCPs).”²

Finally, SLCP reductions, unlike reductions in carbon dioxide emissions, provide immediate and significant public health benefits.³ Black carbon and methane are both air pollutants that impact air quality and public health significantly. Black carbon emissions also impact agriculture and forest health and can impact precipitation patterns. In other words, not only is SLCP reduction more critical for the climate than other carbon reductions, but it also provides more immediate benefits to public health, California residents and the economy than carbon dioxide reductions.

Aemetis urges CARB to incentivize low carbon fuels that reduce SLCP emissions to help meet the requirements of SB 1383 and to provide direct benefits to public health. This includes biofuels, hydrogen and electricity generated from organic waste in California, which reduces SLCP emissions from landfills, livestock, agricultural, and forest waste. Only by prioritizing the reduction of SLCP emissions do we simultaneously prioritize the lives of the most impacted communities from transportation fuels.

¹ Health and Safety Code section 39730.5.

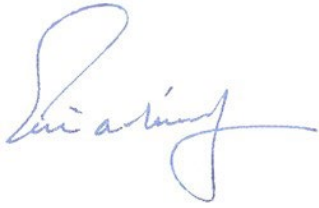
² *Short-Lived Climate Pollutant Reduction Strategy*, adopted by the California Air Resources Board, March 2017, at page 1.

³ Id.

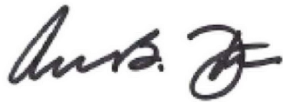
In conclusion, Aemetis is an excellent example of the type of company that CARB is seeking to attract by a healthy LCFS marketplace: our \$1.5 billion of planned new investment to create jobs in the Central Valley of California will reduce air pollution and decrease CO2 and methane emissions.

Aemetis appreciates CARB's consideration of our comments and is committed to working with CARB staff throughout this regulatory process. Please do not hesitate to reach out to us with any questions.

Sincerely,



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