



Jeremy Loeb

California Air Resources Board
P.O Box 2815
Sacramento, CA 95812

September 29, 2021

RE: Response to Public Comment - Application No. B0214 Tier 2 Pathway: Compressed Natural Gas (CNG) from Swine Manure

Dear Jeremy,

Public comments were submitted during the 10-day public comment period for Element Markets Renewable Energy, LLC ("Element Markets") Tier 2 Pathway for Compressed Natural Gas ("CNG") from Swine Manure for use as transportation fuel in vehicles in California. According to §95488.7(d)(5)(A)(2), this letter provides written response to the Executive Officer why the Element Markets, as fuel pathway holder, believes that revisions to the fuel pathway application are not necessary or required.

Pursuant to §95488.7(d)(5)(A): "Only comments related to potential factual or methodological errors will require responses from the fuel pathway applicant." The comments received are not related to factual or methodological errors. However, Element Markets remains in compliance and desires to address these claims as a participant in the Low Carbon Fuel Standard ("LCFS") program and because the comments incorrectly claim adverse environmental damage resulting from the project. In contrary, the project provides long-term benefits to improved air quality and reductions in greenhouse gas emissions.

Element Markets' responses to all public comments received are included below and Element Markets' position is that no revisions to fuel pathway application B0214 are needed. We thank you for the opportunity to respond to comments on this fuel pathway application and we respectfully request that the Executive Officer certify the pathway pursuant to §95488.7(d)(5)(B).

Sincerely,

A handwritten signature in black ink, appearing to read "S. O'Neill", written in a cursive style.

Scott O'Neill
Senior VP Operations
Element Markets, LLC.



Public Comment and Fuel Applicant Response

Comment No.1

“Important factual information is omitted or redacted in the application, rendering meaningful stakeholder review of its claims impossible”

Element Markets Response No.1

As required by sections 95488.7 and 95488.8 of the LCFS regulation¹, Element Markets provided all documents and information necessary to certify a Tier 2 pathway in conjunction with the approval of the California Air Resources Board (“CARB”) Staff. The same documents were provided to an approved third-party validator according to section 95500 of the LCFS regulation - a complete unredacted fuel pathway application and supporting material.

This documentation includes comprehensive farm and project information and data, including, but not limited to, the number of livestock, manure management practices and parameters, local environmental conditions, and metered operational records. This is used in the calibration of the CARB-approved CA-GREET3.0 Model (“GREET Model”)² for Anaerobic Digestion of Dairy and Swine Manure (August 2018).

The third-party validator reviewed the entirety of the baseline and project data Element Markets used in the GREET Model. This review ensures the accuracy of the inputs and information. The same information was also provided to CARB for the purposes of an independent engineering review of the project prior to the pathway being posted for the 10-day public comment period. The CARB staff summary posted for public review ensures that all pathway information required for public comment is unredacted. For example, a Life Cycle Assessment Report (“LCA Report”) discloses a summary of historic and current manure management practices, average number of swine livestock and other details regarding the facility operations.

All redacted information in the documents posted for public comment constitutes "Confidential Business Information" and is not considered “public information” under the California Public Records Act (see Section 6254.7 of the California Government Code and CARB guidance document 20-05³). In addition, any modifications to the default equations or assumptions of the GREET Model were also included with the posting.

¹ https://ww2.arb.ca.gov/sites/default/files/2020-07/2020_lcfs_fro_oal-approved_unofficial_06302020.pdf

² [Tier 1 Simplified CI Calculator for Biomethane from Anaerobic Digestion of Dairy and Swine Manure](#)

³ [Low Carbon Fuel Standard \(LCFS\) Guidance 20-05](#)



Comment No.2

“The application violates the LCFS regulation by failing to employ a methodologically sound life cycle analysis that accounts for the GHG emissions that result from the applicant's production of manure methane.”

Element Markets Response No.2

As requested by CARB, Element Markets submitted a thorough LCA Report for public comment. The LCA Report outlines the facility operations, life cycle GHG emission and Carbon Intensity summary, following the requirements described in section 95488.7(a)(2) of the LCFS regulation. Unredacted copies of the LCA Report were submitted, reviewed, and approved by CARB and the third-party verification body.

The approved GREET model provided by CARB calculates the Carbon Intensity of the project for the life cycle GHG emissions associated with the manure management practices of the farm and the biogas production and collection of the project. This includes data such as the number of livestock, the type of livestock and manure management practices in both the baseline and project scenarios. The methodology follows the boundary defined in CARB's Compliance Offset Protocol for Livestock Projects (the “Protocol”)⁴. The Protocol accounts for emissions that would have occurred in the absence of the project and emissions generated through the operation of the project. The Protocol also specifies the parameters of the biogas production project that must be included in the emissions calculations. Any calculations used with the project data are taken from the Protocol and the GREET Model. This is in alignment with CARB guidance on calibrating the certified GREET Model submitted with the application.

Comment No.3

“CAFOs have significant environmental effects, including environmental injustice. CAFOs spur climate change and degrade air quality, degrade water quality and harm human health and harm animals. CAFOs degrade water quantity and quality, which harms human health. CAFOs disproportionately harm communities of color and low-income communities. CAFOs harm animals, including those who are members of endangered and threatened species.”

Element Markets Response No.3

There is no evidence to support the claim that environmental issues with the swine CAFOs are not addressed. The objections raised by the public comments to the application for provisional certification of a Tier 2 pathway for manure methane are not objections about methane capture and upgrading. These are objections to livestock farming and as such, are outside of the scope of this fuel pathway application. The RNG operations, including those in Utah, are developed with community input and engagement that far exceeds what is already required by regulating authorities.

⁴ [Compliance Offset Protocol Livestock Projects](#)



The existence of the project reduces the overall GHG emissions generated by the placement of manure in uncovered lagoons lined with an impermeable layer according to the state permit requirements. By covering the lagoons with an impermeable layer, the project captures the harmful emissions and cleans the gases which would have been otherwise emitted to the atmosphere through traditional manure management practices. This also creates a safer work environment as the harmful contaminants are contained and monitored with the appropriate environmental health and safety management practices. Lastly, the purified renewable natural gas originally captured by the anaerobic digestion system is transported to California for use as transportation fuel instead of traditional fossil fuel.

This project will reduce methane emissions and other GHG emissions with the capture of biogas produced from uncovered lagoons. Methane (CH₄) is a short-lived climate pollutant that is 25 times more harmful and potent than carbon dioxide as indicated by CARB's default value in the submitted GREET Model.

The project only accepts manure from swine livestock and the manure management system involves a scrape/gravity feed system designed to reduce the need for additional flush water. In the event of overflow, the liquids from the covered and lined lagoons are gravity fed to the adjacent evaporation pond lined with an impermeable layer which helps the farm to manage wastewater compared with other manure management processes. Evaporation solids are naturally dried, periodically removed and land applied on local agricultural fields according to permit requirements.

This projects also support Smithfield's goal to become carbon negative in all company-owned operations by 2030 and effectively reduce methane emissions, which is good for the environment and our communities. Along with their significant environmental benefits, CAFOs introduce significant employment opportunities that lift entire communities economically. The average concentrated animal feeding operation can provide over \$1 million in total support for a local economy of any size in its first 12 months of operations.

The hog farming industry is strictly regulated by state and local agencies, including in Utah. There is no evidence to support the claim that these operations harm animals or have any impact to endangered species that is not proactively addressed by regulatory processes and policies.



Comment No.4

“Granting the application would incentivize CAFOs to expand proliferation and expansion of CAFOs and industrial animal agriculture, exacerbating the associated significant environmental effects in violation of the 2006 California Global Warming Solutions Act.”

Element Markets Response No.4

Swine farms manage their animals based on demand for their product, not biogas production. The installation and operation of the covered lagoons helps the farm to reduce the environmental impact of its ongoing operations.

The amount of crediting given to a project for reducing methane emissions is capped at a level based on the facility’s baseline emissions determined in the Protocol and implemented as part of the LCFS program. The purpose of this methane emissions quantification methodology is to measure what would have been emitted to the atmosphere prior to the installation of the biogas collection system. The baseline methane calculation is meant to represent a business-as-usual scenario to quantify methane emissions in the absence of the project. No crediting is given for any methane produced above this threshold, which creates an incentive to reduce current methane emissions.

Comment No.5

“Methane digesters are false solutions to the significant environmental effects inherent in industrial animal agriculture.”

Element Markets Response No.5

The LCFS program requires certified pathways to operate within the boundaries of the facility’s operating permits. The project is required to remain in compliance with applicable regulations and will continue to do so. Furthermore, the project will adhere with the reporting and recordkeeping obligations within the LCFS regulation. Element Markets submitted an unredacted copy of the Air Quality Permit for the New Hog Farming and Biogas Operation issued to Murphy Brown LLC dba Smithfield Foods, INC – Milford Farm by the State of Utah Department of Environmental Quality on December 11, 2019, to CARB as part of the pathway application.

A stringent level of methane monitoring and avoidance of fugitive methane emissions is required by the operating condition imposed by CARB and stated in the Staff Summary: “Any quantity of biomethane metered as captured that cannot be demonstrated by meter records to have been destroyed, must be calculated by energy balance and accounted for in the CI as a fugitive methane emission if the calculated value exceeds the default 2% fugitive emission.” The GREET Model submitted for this pathway accounts for any environmental impact of methane leakage from the project and does not provide this facility any crediting for vented or fugitive methane.



Air pollution is directly reduced by the capture of methane which would have been otherwise emitted or vented to the atmosphere. Air pollution is also improved since renewable natural gas will be utilized as a substitute of conventional fossil fuel powered vehicles. The presence and operation of the covered lagoons poses no new water quality issues and complies with applicable water quality regulations. The adjacent evaporation ponds that treat wastewater are also lined with an impermeable layer.

The LCFS program incentivizes the reduction of methane from the project's ongoing operations by rewarding project owners that mitigate venting of methane, reduce flaring, or improve manure management practices and reduce the overall energy demand of the project.

There are a few small biogas blowers and compressors transferring the raw digester gas to the upgrading facility via a closed network of pipelines that do not pose a risk of environmental effects or methane blowouts involving gas infrastructure. The facility has safety protocols in place to protect its employees involved in operations.

Comment No.6

“Approving the application would violate CEQA and CARB’s own certified regulatory program.”

Element Markets Response No.6

Element Markets followed the CARB guidance provided with respect to confidential business information (“CBI”) outlined in 17 CCR §95488.8(c). While some CBI has been redacted from the application, sufficient information is provided to the public to determine the carbon intensity score. The entirety of application B0124 was submitted to CARB unredacted and reviewed by CARB Staff and by a CARB accredited independent third-party verifier. The Staff Summary posted by CARB staff and the applicant provides an overview of the pathway, the facility operations, and ongoing operating conditions to which the fuel pathway will be subject. As stated in the Staff Summary, “[s]taff has reviewed the application and has replicated, using the Tier 2 modified version of the Simplified CI Calculator, the CI values calculated by the applicant. EcoEngineers (H3-20-008) submitted a positive validation statement”.

The biogas that would have been vented from these projects can be converted to renewable energy. The methane captured from this project is converted into renewable compressed natural gas for use as a transportation fuel in California, which reduces California’s dependence on fossil fuels. These projects exist because of the policy enacted by the California Legislature through the passage of SB 1383⁵ and CARB’s implementation of SB 1383. This process involved years of public outreach and engagement. This legislation focuses on the need to reduce emissions from the swine sector and mitigates the need of fossil fuel demand in the transportation sector.

⁵ https://leginfo.legislature.ca.gov/faces/billTextClient.xhtml?bill_id=201520160SB1383