



February 20, 2024

Ms. Rajinder Sahota  
Deputy Executive Officer – Climate Change and Research  
California Air Resources Board  
1001 I Street  
Sacramento, CA 95814

Re: Aera Energy Comments on Proposed 2024 Low Carbon Fuel Standard Amendments

Dear Ms. Sahota,

Aera Energy LLC (Aera) appreciates the opportunity to provide the comments below regarding the California Air Resources Board's (CARB) proposed amendments and related 45-day rulemaking documents for the Low Carbon Fuel Standard (LCFS) program. Aera is one of California's largest oil producers, with assets across the State. As a California-based company, Aera understands the need to reduce GHG emissions to work towards the 2045 carbon neutrality target, which is why we are helping lead the State in developing low carbon projects, including carbon capture and sequestration (CCS), direct air capture (DAC), and renewable energy.

**Section 95489(c)(1)(F). Updates to the Emission Factor for Calculating Credits for Producing Crude Oil with Innovative Methods using Solar or Wind-Based Electricity**

In Section 95489(c)(1)(F), CARB staff propose updating the emission factor for producing crude oil with solar or wind electricity from 511 gCO<sub>2</sub>e/kWh (current emission factor) to 314 gCO<sub>2</sub>e/kWh (proposed emission factor), which would result in a 39% reduction in credits generated by these projects. In *Appendix E: Purpose and Rationale for Low Carbon Fuel Standards Amendments*, the rationale for this update is that the solar projects approved by CARB under this pathway to date have been supplemented by grid electricity. Therefore, the avoided emissions from solar projects should be based on the carbon intensity of grid electricity (the proposed emission factor) rather than the carbon intensity of electricity from a natural gas fired combined cycle plant (the current emission factor).

However, this change presumes that future innovative crude solar or wind project applications will all be supplemented by grid electricity, similar to previous project applications. In fact, Aera has contracted with a solar developer to install 37 MW DC (27 MW AC) of solar PV at its Belridge oilfield, with an estimated completion date of 2025. This would be one of the largest innovative crude solar projects to date, and unlike previous projects, the solar electricity would be supplemented with electricity from natural gas fired cogeneration units that currently supply almost all of the electricity to the Belridge oilfield. Therefore, the emissions avoided from this project would be similar to the emission factor in the current LCFS regulation, rather than the proposed reduced emission factor. Lowering the emission factor and credits generated by a project such as the one at Belridge would incorrectly calculate avoided emissions and discourage investment in oilfield solar electricity and energy storage, as companies such as Aera consider installation of much larger solar projects. Aera recommends that innovative crude solar or wind electricity projects that displace natural gas electricity generation utilize the current emission factor when calculating LCFS credits generated.

**Section 95489(c)(5). Phaseout Provisions for Petroleum Projects.**

In Section 95489(c)(5), CARB staff proposes to phase out crediting of innovative crude projects no later than December 31, 2040, excluding CCS projects. In *Appendix E: Purpose and Rationale for Low Carbon Fuel Standards Amendments*, the rationale for this phase out was the 2022 Scoping Plan, where the “State has identified the need to phase down fossil fuel production as fossil fuel demand drops, and the need for all viable tools such as CCS and direct air capture to address the existential threat that climate change presents.”

While fossil fuel demand in California will decline over time, it is not expected to be eliminated in 2040. Given this need past 2040, as well as the goals of reducing GHG emissions, Aera is evaluating solar electricity and solar steam projects that would be some of the largest in the world, to achieve near-zero emissions crude oil production, including after 2040. This would allow fossil fuel production in California to be much less carbon intensive than fossil fuel imported from elsewhere. Given the size of these projects, they would require years of permitting and construction and hundreds of millions of dollars in investment, with long payouts. Eliminating LCFS credit generation “no later than December 31, 2040” would hurt the investment case for these projects, as well as send a signal to developers of all types of projects that LCFS credit generation could be prematurely eliminated in future rulemaking. Such a phase out, and uncertainty over future potential LCFS regulatory changes, would discourage investment, incentivizing higher emissions from the crude oil producers and imports in the coming years.

In *Appendix E: Purpose and Rationale for Low Carbon Fuel Standards Amendments*, CARB staff also recognize the need for tools such as CCS and direct air capture to address climate change, which is presumably the rationale for allowing these credit generation pathways to continue post 2040. Similar to CCS and DAC, other innovative crude projects such as solar electricity and solar steam are tools needed to address climate change long-term, with the potential to provide zero-carbon energy long after the cessation of oil production. Aera recommends removing the post-2040 phase of innovative crude crediting, supporting investments that not only result in near-term emissions reductions, but also long-term low-carbon energy generation that would benefit the State for decades to come.

Aera looks forward to working with CARB and other stakeholders to craft policies that will facilitate the projects and technologies needed for California’s energy transition. If you have any questions regarding this submittal, please contact me via email at [rwhoyle@aeraenergy.com](mailto:rwhoyle@aeraenergy.com).

Sincerely,



Randy Hoyle  
Chief Carbon Solutions Officer  
Aera Energy LLC