



energy independence now

September 1, 2017

Sam Wade Chief
Transportation Fuels Branch
Industrial Strategies Division
California Air Resources Board
1001 I Street
Sacramento, CA 95814

RE: Feedback to the draft LCFS rulemaking (§ 95488(b)(2)(F))

Dear Sam,

On behalf Energy Independence Now (EIN), our [Board of Directors](#), hundreds of supporters and hydrogen vehicle and Infrastructure stakeholders, I am writing to urge you to amend the existing LCFS rule (§ 95488(b)(2)(F)) to allow grid connected electrolyzers to utilize RECs to generate renewable hydrogen and qualify for LCFS credits.

Energy Independence Now (EIN) is the only nonprofit organization dedicated to advancing fuel cell electric vehicles (FCEVs) and the hydrogen-fueling infrastructure required to catalyze a rapid transition to a clean energy and transportation economy. EIN engages in comprehensive research, strategic policy advocacy and public outreach to promote the widespread adoption of fuel cell electric vehicles as a key part of a zero-emission transport future.

Currently, the LCFS rule puts one of the most cost-effective and currently attainable renewable hydrogen generation options - via grid connected electrolysis - at a severe disadvantage when compared with other forms of renewable hydrogen generation such as directed biogas reforming. This rule makes it harder for hydrogen production companies to move towards California's goals of creating 100% renewable fuels and exacerbates the state's prediction of a shortage in the availability of low carbon hydrogen for vehicles in the 2020-2022 timeframe.

EIN is about to release a White Paper on Renewable Hydrogen (RH2) that calls out the critical role that LCFS credits have in driving the development of RH2, and addresses some of the current deficiencies and counter-intuitive policies that treat renewable hydrogen production punitively.

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I would be happy to provide you with an advance copy of the paper, which notes that “currently five LCFS-certified hydrogen production pathways exist for renewable hydrogen, but many more production methods (or variations of approved methods) have yet to be analyzed. The hydrogen stakeholder community would benefit from certifying as many LCFS pathways as possible, so that these valuable credits can be modeled into investment profiles BEFORE developers attempt to finance renewable hydrogen production processes. This would help alleviate investor uncertainty and improve developer access to financing. Investor confidence will grow as more pathways become certified and as more projects demonstrate that investors can rely on a consistent LCFS marketplace.”

The current LCFS rule runs counter to ARB’s objectives. In the [2017 AB8 report for hydrogen network developments](#) ARB states: *“Establishment of new production capacity, especially renewable production capacity, within California would be a significant step. This would also help ensure the State’s goals of renewable hydrogen throughput, implemented through Senate Bill 1505 could continue to be met in the future.”*

The report also states: *“In addition to dispensing capacity, the state’s hydrogen network may similarly face a shortage in hydrogen production capacity, especially for hydrogen produced in state and with large contributions from renewable resources. Industry stakeholders are increasingly sharing the expressed desires of their customers to make the greatest environmental impact possible by choosing to drive an FCEV. Continued adoption of the vehicles may rely critically on ensuring the availability of renewably-sourced hydrogen at a reasonable, competitive market-driven price. Incentives like the Low Carbon Fuel Standard may help build industry interest in establishing new hydrogen production facilities in California, especially for low-carbon production methods.”*

Currently you CAN inject biogas into the gas network at location A and remove it at location B in a central reformer to generate renewable hydrogen if a ‘physical pathway’ exists (i.e. there is theoretically a way for the renewable molecule to travel from point A to point B via the pipeline). In reality the gas is metered in at point A, metered out at point B and recorded in the system - in effect it is a bookkeeping exercise. This makes sense as the distances and physical size of the biogas generation facilities make it difficult to co-locate with reformers and/or hydrogen refueling stations.

You CANNOT do the same for a renewable electron at present using the REC system. This is extremely detrimental, particularly in the early deployments of large-scale plants. The REC system allows for full traceability of the renewable

generation. This is good enough for the utility RPS but not for hydrogen generation, which represents a tiny fraction of the equivalent energy recorded.

Having to co-locate a hydrogen production facility with a renewable generation plant severely limits the geographical location. Additionally, sources of renewable generation are far from the regions of the state that have been prioritized for hydrogen fueling stations (near densely populated cities and transportation corridors). Furthermore, the hydrogen industry does not have the luxury of using an existing pipeline system such as the natural gas network to move the gas around once generated.

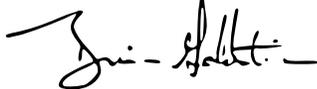
Early stage electrolysis production facilities RELY on a revenue stream from LCFS credits to ensure an economic and stable facility. Without it many projects simply are not financeable in the current market of low numbers of fuel cell vehicles.

One other important note is that the LCFS rule should be in line with the direction and priorities from other state agency policies. For example, under the California Energy Commission's (CEC) AB8 hydrogen station initiative, electrolyzers that are grid tied can use RECs to generate renewable hydrogen (to meet SB1505 requirements). This is also true of the CECs newly proposed renewable hydrogen production solicitation (see [docket 17-HYD-01](#)).

As we move into a future with an increasingly renewable electricity grid, reactive loads such as electrolyzers will become increasingly valuable to grid operators to prevent curtailment of renewables and manage network loads such as the California 'duck curve'. Penalizing early adopters of electrolysis plants will severely limit the amount of renewable hydrogen fuel that can be produced in state.

Thank you for your consideration of our comments. I would be happy to speak with you or your staff further if you have any questions.

Sincerely,

A handwritten signature in black ink, appearing to read "Brian Goldstein", with a horizontal line extending to the right.

Brian Goldstein
Executive Director