

Comments to CARB LCFS Rule changes from SGH2 Energy Global Corporation

1. SGH2 has three projects in CA providing Carbon negative Clean H2 production from the thermal conversion of biomass and biogenic residues with carbon capture. These 3 facilities will supply two of the State's largest HRS owners and operators with a total production of 65 Tons per day on base load production equivalent to 21,450 Tons per year of Clean H2.

2. SGH2 Energy team has been participating in CARB workshops throughout 2022 and supports the proposed rule changes by CARB staff to increase stringency to a minimum of 30% by 2030, preferably to 35% by 2030. The argument is that a larger commitment of 35% stringency in 2030 from CARB will provide the necessary and required increase in LCFS pricing back to what it was before the pandemic. Only then will investors commit large capital investment required to build out the infrastructure needed for the whole H2 ecosystem. A partial increase of 30% is viewed as a minimum and may require additional intermediate steps to shore up credit pricing, including Step down, acceleration or ratchet.

3. The Federal IRA legislation identify Clean Hydrogen by its Carbon Intensity thus removes any references to how the Hydrogen is produced and thus remain technology agnostic. In order to align the LCFS with the IRS as CARB intends to do, CARB should also remove all technology or conversion process to produce Hydrogen and only uses the CI to determine the H2 value consistent with the IRA. Today, CARB is proposing a dedicated Tier 1 Pathway for H2 but select only two specific technologies: Electrolysis and SMR. The latter is currently a Pathway to produce H2 from NatGas with the maximum amount of 12 Kg CO2 per Kg of H2. Under the current CA regulations, renewable Hydrogen include H2 produced by electrolysis with Renewable Power and the Thermal conversion of Biomass or biogenic residues. Therefore, SGH2 Energy recommend that CARB proposed Tier 1 for Hydrogen should be restricted only for Renewable "clean" H2 processes and not SMR H2 from fossil fuels.

4. Book and Claim for Renewable Electric power is currently approved to be deployed for the production of H2 from electrolysis. Other processes such as thermal conversion gasification of biomass or biogenic residues used almost 4 X less power than electrolyzers to produce H2, and should also benefit from using book and claim of renewable power to ensure that the whole process is carbon neutral , and should also earn the carbon credits for using renewable power in its facility. Otherwise, the current CARB rules encourages the use of dirty grid power as it is not recognizing book and claim for other H2 production processes.

SGH2 Energy recommends that CARB allows and include Book and Claim for renewable power for the production of clean H2 from all conversion technology and not only for electrolysis.

5. Additional steps such as Step Down / Acceleration or Ratcheting, if determined to be applicable by Staff then it should be based on:

- a. Minimum floor price of LCFS of 120\$ (since price CaP already in place)

b. Defined Price increase in LCFS to stabilize by early 2024 of 120\$ and if not, then automatic acceleration to the 35% stringency

6. Avoided methane credits should include avoided CH₄ from Landfill gas in CA. Further, Staff should review and reduce current LFG cap of landfills from 75% to 50% since landfills in CA are NOT all capped to reduce LFG to 75%. EPA studies have shown that most Landfills in the US are not capturing 50% of its LFG. The Landfill in the city of Lancaster, CA is in fact NOT even capped, and yet under CARB current rules, our Project in Lancaster can only claim 25% of the avoided methane.

7. Methane Global Warming Potency (GWP) has to be calculated based on a 20 year life due to its short half-life and NOT based on a 100 year timeline. Methane impact over a 20-year timeline is the most significant at 80 X CO₂ while spreading it out to 100 years will reduce its impact to 20 X CO₂ which is incorrect according to the UN IPGCC and the US EPA. Yet, CARB continues to use a Methane GWP based on a 100 year timeline. 179 Countries have signed to the Methane Cap regulations based on the 20-year impact of CH₄. CA should follow suit as it is trying to reduce its Carbon footprint by 2045.

8. Biomethane from Dairy creates a green washing loop allowing two dirty industries to continue to pollute accruing to EarthJustice and many other NGOs: the Dairy farms in the mid-West and other farm states are using the high LCFS pricing in CA to earn large amount of cash without reducing its huge pollution in farm waste and environmental pollution. Fossil fuels companies using NatGas or Oil are buying these Environmental Attributes from other states to reduce its CO₂ footprint while continuing to use and sell fossil fuel based products (including H₂) into CA earning even more LCFS. This Book and Claim of BioGAs has caused a surplus of credits in CA and crashing the LCFS pricing which in turn shuts down additional investments in H₂ and ZEVs infrastructure and demand.

SGH₂ supports limiting BioMethane for LCFS credits only to Biomethane which is produced and or directly transported and used in the State of CA.

9. Renewable Diesel and Crop based biofuels are taken advantage of high Oil price due to the Ukraine War and dumping large amount in CA earning additional LCFS revenues. This creates a huge surplus in LCFS and causing mass disruption in LCFS pricing resulting in the almost cessation of capital investment into LCFS based projects and defeating the purpose of the program. Within the last 12 months, 85% of LCFS Projects did not achieve FID due to the current LCFS price crash.

If LCFS pricing does not increase, as per Point 1 above with the CARB proposed rule changes, the State will not reach its decarbonization goal by 2030 nor its role to roll out ZEVs and H₂ market. Further, Renewable Diesel supports the continued use of ICE vehicles which is the reverse of CA's goal of rolling out both ZEVs (both EBVs and FCEVs) infrastructure and demands. Further, the continued increase in land use for crop fuels, supported by CA LCFS , will affect the price of food due to these expanded land use further flaming the Food vs Fuels crisis.

SGH2 supports the limiting of Renewable Diesel from out of state by:

a. capping the amount of Renewable diesel to those produced in the State and or used directly in vehicles in the State.

b. Create a clear % limit within the total LCFS credit program for Renewable Diesel like a Blend wall effect so that Renewable crop-based diesel does not make up the majority of fuels within the State and drowning out all other renewable fuels within the LCFS program for ZEVs.

Lastly, SGH2 Energy respectfully recommends that CARB issue a Clear Statement that it intends to make the rule changes as presented by Staff in the Feb Workshop to increase the Stringency by a minimum of 30% by 2030. So far, the market reception is lukewarm because there is no clear statement from CARB on its rule's changes for LCFS.

Respectfully submitted,

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