From: Charles Davidson, Sunflower Alliance and the Rodeo Citizens Association. Hercules, CA
To: California Air Resources Board (CARB)
Date: February 20, 2024
Re: Concerns Regarding LCFS Eligibility and Claims by the Rodeo Phillips 66 and Martinez Marathon Refineries

Dear Chair Liane Randolph, CARB Members, and Hon. Dr. Steven Cliff,

I write to express urgent concerns about claims made by the Phillips 66 San Francisco Refinery in Rodeo and the Martinez Marathon Refining Company regarding their renewable diesel projects' eligibility under CARB's Low Carbon Fuel Standard (LCFS). Their claims misrepresent the eligibility criteria and carbon greenhouse gas footprint requirements of renewable diesel, but also exploit regulatory loopholes, potentially violating CARB regulations. Specifically, these LCFS violations regard both the use of virgin food oil *non-waste* feedstock for renewable diesel and the fact that renewable diesel refining is profoundly energy intensive.

Existing lax GHG auditing by CARB, allows the refineries to misuse generous State and Federal low-carbon subsidies for projects that are financially dependent on using unearned LCFS certifications. For LCFS-accredited CO2 greenhouse gas reduction projects for renewable diesel, there is an urgent need for rigorous guardrails and pre- and post-project *per barrel GHG auditing*.

**KEY ISSUES:**

**1.   Misallocation of LCFS Exemptions: Both refineries are inappropriately claiming LCFS tailpipe GHG exemption allowances for renewable diesel from virgin food oils**, traditionally reserved for waste-based feedstocks. Tailpipe CO2 emissions from fuel combustion represents 75% of total lifecycle GHGs, whether from renewable diesel or petroleum diesel. Removing tailpipe GHG emissions from LCFS GHG accounting for virgin food oil feedstock, promotes a massive, unjust food-to-fuels conversion pipeline**. *According to CARB’s own documents, tailpipe CO2 exemption allowances should only be reserved for rendered waste fats, oils and greases (ie, FOGs), not virgin food oils***, because:

The CO2emitted from vehicles during [used cooking oil] biofuel combustion is considered carbon neutral…as the carbon released was uptaken from the atmosphere within a short timeframe by the plant that produced the oil.**[A. Low Carbon Fuel Standards (LCFS). p.19. CARB.**

[**https://ww2.arb.ca.gov/sites/default/files/2020-09/basics-notes.pdf**](https://ww2.arb.ca.gov/sites/default/files/2020-09/basics-notes.pdf)**]**

**2.   Lack of Carbon Intensity Reduction Evidence:** There is *no substantial evidence* to demonstrate a reduction in carbon intensity per barrel of renewable diesel produced (compared to the pre-project petroleum baseline). Instead, both project’s Environmental Impact Reports (EIRs) clearly demonstrate **a large (post-project) increase in *per barrel*hydrogen production and the resultant large increase in *per barrel* GHG emissions. (1)**

**3.  Inadequate CARB Oversight:** The refineries' claims have been locally approved without sufficient scrutiny, despite public comment on these matters. The mere fact of CARB not auditing these GHG-related discrepancies in LCFS qualification scoring, highlights critical oversights in CARB's lifecycle GHG assessment capabilities for renewable diesel projects dependent on substantial GHG-reduction subsidies.

**IMPLICATIONS:**

The Phillips 66 Rodeo Renewed Project and Marathon’s Martinez Renewable Fuels Project, being among the largest hydrogen-based renewable diesel initiatives globally, involve significant financial and reputational stakes. Yet, both refineries’ environmental claims stand on shaky ground, with potential loopholes allowing continued use of high-emission petroleum-refining processes.

What has been lost amongst the public promotion of renewable diesel and the Rodeo Renewed Project, is that Phillips 66’s Environmental Impact Report maintains a little-known backdoor loophole that will allow the refinery to continue to use their high GHG-emitting, massive bottom-of-the-barrel petroleum-refining Delayed Coker complex.

**RECOMMENDATIONS:**

**Reevaluate LCFS Eligibility:** CARB must closely examine and rectify the misapplication of LCFS exemptions for high-GHG virgin food oil-sourced renewable diesel, that is extremely expensive, requires subsidies and always has critical supply constraints that make its unrestricted use for transportation fuel a potential national security issue

**Implement Rigorous GHG Accounting:** It's imperative to introduce stringent, *project-specific GHG accounting, hydrogen accounting and auditing measures* to ensure the veracity of claimed environmental benefits and prevent greenwashing.

**Promote Transparency and Sustainability:** By addressing these issues, CARB can reinforce its commitment to environmental stewardship and truly sustainable energy solutions.

I trust CARB will take these concerns seriously, ensuring that LCFS certifications and subsidies genuinely contribute to reducing GHG emissions and advancing sustainable practices.

Sincerely,

Charles Davidson

**PS: FOOTNOTES**

**1) INCREASE IN REFINERY-LEVEL CO2 GHG EMISSIONS PER BARREL:**

% Increase, estimated based on EIR-provided information, *relative increase from petroleum baseline*, ie, refinery-wide, yearly Mt CO2, divided by yearly product amount. (Mt CO2; million tons of CO2e GHGs).

**Phillips 66: ~54-76% (relative increase from baseline)**–– (2.147 / 2.171 Mt CO2 = 0.99) ÷ [(67/105 bpd = 0.64)-to-(67/120K(capacity) bpd = 0.56) = ~ (1.54-to-1.76)/1.00

**Marathon: ~77% (relative increase from baseline)** –– (2.169 / 1.145 MtCO2= 0.53) ÷ (48K / 160K(capacity) bpd = 0.3) = 0.53 / 0.3 = ~ 1.77/1.00

**LIMITATION OF RENDERED WASTE FEEDSTOCK SUPPLY:** By 2030, the combined renewable diesel feedstock needs of Phillips 66 and Marathon, alone, will be 97.3 % of CARB's projected amount of total California waste oil (FOG) feedstock available, until 2045 (neither including, nor considering, CARB’s ambitious SAF aviation target goals).

**CONSEQUENCES OF THE ABOVE LIMITATIONS:** If the renewable diesel from only the Phillips 66 and Marathon were combined, ~ 43% of ALL US soybeans would go to renewable diesel (or fungible edible food-quality alternatives, IF there were no waste FOGs used in their manufacture). This would equal an area planted entirely with soybeans, row-by-row, the size of the State of Michigan planted border-to-border. “To produce 100 percent of 2022 US diesel fuel consumption in the transportation sector would require more than 160 million metric tons (MMT) of feedstock, which is 10 times US production of vegetable oils in 2022 or 80 percent of global vegetable oil production in 2022” Everything You Wanted to Know About Biodiesel and Renewable Diesel. (Jan. 10, 2024) The Union of Concerned Scientists.

[https://blog.ucsusa.org/jeremy-martin/all-about-biodiesel-and-renewable-diesel/]](https://blog.ucsusa.org/jeremy-martin/all-about-biodiesel-and-renewable-diesel/%5D)

**SUPPLY INSTABILITY EXACERBATING THE ABOVE LIMITATIONS:** Foreign sources of soybeans have profoundly decreased since the war in the Ukraine began and most recently, because the collapse of soybean production in Argentina (a major global soybean producer) due to drought. Specifically, noting that "in the 2022/23 season, Argentina had a historical crop failure caused by hot, dry conditions enhanced by a third consecutive La Niña. The USDA estimated Argentina’s 2022/23 production at 25 million metric tons, the smallest since 1999/00, with a 43% drop from the previous year. Local sources such as the Buenos Aires Grains Exchange went even lower, putting last year’s production at 21 million metric tons.” Beginning over one year before the invasion of Ukraine and since, the rate of inflation for global virgin food oils has increase at a faster rate than all other major food items.

In stating their reasons for limiting renewable diesel production the Union of Concerned scientists state the following need "to be realistic about where they come from, and limit feedstocks to sustainable resources used at a reasonable scale to avoid turning a helpful tool into a harmful dead end. The realistic potential for biofuel conversions is quite small because of the limited availability of suitable feedstocks. Exaggerated hype about potential for refinery conversions to biofuel production amounts to greenwashing that distracts from more scalable solutions.” [Everything You Wanted to Know About Biodiesel and Renewable Diesel. Also, see: The overlooked hub of South American: New Trase data on Argentina’s soy supply chain highlights how indirect soy supply in South America could be hiding deforestation in global supply chains. Soy. (Aug. 11. 2022) <https://trase.earth/insights/argentina-the-overlooked-hub-of-south-american-soy>]

**SUMMARY:** Virgin food oil supply is becoming increasingly limited for various geopolitical, climate change, market structure and other reasons. The first step towards limiting the misuse of valuable virgin food resources is limiting their being misused for LCFS accreditation and government subsidies. **The method to achieve LCFS truthfulness would be a loophole-free auditing of lifecycle CO2 GHGs for renewable diesel, on a per barrel basis with the full accounting of hydrogen production metrics and tailpipe emissions.**