Clerk of the Board

California Air Resources Board  
1001 I Street

Sacramento, CA 95814

October 24, 2022

Dear Chair Randolph and members of the Board,

Thank you for the opportunity to comment on the Recirculated Draft Environmental Analysis (RDEA) for the California Air Resources Board’s (CARB) AB 32 2022 Scoping Plan. Global Clean Energy is a California-based renewable fuels innovator producing ultra-low carbon renewable fuels from patented nonfood camelina varieties. We agree with CARB’s stated goals of reducing harmful air emissions through regulatory actions, including further transition toward increased renewable energy sources; however, we have identified several areas of concern related to the analysis of projected impacts from Alternate Low Carbon Fuels in the RDEA.

Background: [CARB Approves Camelina LCFS Pathway in 2015]

Global Clean Energy produces ultra-low carbon renewable fuels from our patented camelina varieties. These camelina varieties were granted a first-of-its-kind Low Carbon Fuel Standard (LCFS) pathway[[1]](#footnote-1) by CARB in 2015. In that LCFS pathway staff recommendation, CARB it is noted: “Camelina is a lipid-based feedstock that is a member of the mustard family and a distant relative to canola… Camelina has historically been grown in rotation with row crops or cereals, and has not been grown for human consumption. Camelina contains about 35 to 38 percent oil, which makes it suitable for biofuels production. Camelina meal can be used as livestock feed. Camelina has been evaluated most intensively as a rotation crop that can fit into the traditional winter wheat, spring wheat and fallow crop cycles on dryland wheat farms. In addition to growing camelina on fallow wheat acreage, its agronomic attributes allow it to be inter-cropped with perennials, double-cropped with row crops and fit into other shoulder periods between primary crop harvesting and next crop planting.”

Further, CARB’s LCFS pathway states, “camelina production is not expected to result in any significant indirect land use change impacts.”

Camelina has many attributes as an ultra-low carbon renewable feedstock above and beyond what is noted in CARB’s LCFS pathway designation. These benefits include but are not limited to: reducing soil erosion, growing productively in areas with low soil fertility, low water use/drought tolerance, reducing nematodes in soil, low fertilizer use, pest and disease tolerance, benefits for biodiversity, and animal feed applications.

* Reducing soil erosion [Putnam, DH, et al. 1993. Camelina: A promising low-input oilseed. p. 314-322. New crops. Wiley, New York [Hunsaker, D.J., et al. 2013 v. 31. Pp. 911-929. Irrigation Science]
* Reducing nematodes in soil [Zanetti, Federica, et al. 2021. Camelina, an ancient oilseed crop actively contributing to the rural renaissance in Europe. A review. Agron. Sustain. Dev. 41 2]
* Low fertilizer use [Iskandarov, Umidjon, et al. 2014. Camelina: An emerging oilseed platform for advanced biofuels and biobased materials. Center for Plant Science Innovation. Pp. 131-138]
* No impact on traditional crops grown following camelina cycle [Frederick, Bill, et al. 2020. Practical Farmers of Iowa]
* Productive in areas with low soil fertility [Iskandarov, Umidjon, et al. 2014. Camelina: An emerging oilseed platform for advanced biofuels and biobased materials. Center for Plant Science Innovation. Pp. 131-138]
* Pest and Disease tolerance [Grady, Kathleen, et al. 2010. Camelina Production. South Dakota State University College of Agriculture and Biological Sciences. USDA]
* Benefits for biodiversity [Suskiw, Jan, et al. 2015. Camelina Holds Promise for Biofuel and Bees. AgResearch]
* Animal feed applications [Lawrence, RD, et al. 2016. Evaluation of camelina meal as feedstuff for growing dairy heifers. Journal of Dairy Science. V. 99. Issue 8. Pp 6215-6228]

Comments to RDEA

The RDEA lists several areas as having “significant impacts” associated with the use of Alternative Low Carbon Fuels. Respectfully, the impacts listed in the RDEA do not apply to Global Clean Energy’s Bakersfield Renewable Fuels Refinery or the production of our proprietary camelina feedstock. The determinations of significance for Low Carbon Fuel Alternatives outlined within this RDEA include: **Aesthetics, Agriculture and Forestry Resources, Biological Resources, Geology and Soils, Hydrology and Water Quality, Land Use Planning, Noise and Vibration,** and **Utilities and Service Systems.** CEQA requires a finding ofsignificance if a project “has the potential to substantially degrade the quality of the environment.” (Cal. Code Regs., tit 14, § 15065, subd. (a).) We believe the determination of significance for Global Clean Energy’s operations is inadequately addressed within the RDEA, as our impacts are less than significant in these stated areas:

Impact 1.b: **Long-Term Operational-Related Effects on Aesthetics**

The cultivation of our camelina feedstock, grown between traditional crop cycles on existing farmland that is otherwise left fallow or idle, as well as the furtherance of construction on our renewable fuels refinery, located within an appropriately zoned, non-residential area not located along a scenic route, do not contribute to significant aesthetic impacts.

Impact 2.b: **Long-Term Operational-Related Effects on Agriculture and Forestry Resources**

As previously noted by CARB staff, our camelina feedstock does not result in land use change as it grows between crop cycles on existing farmland that is otherwise idle or fallow. Therefore, increased cultivation and production of camelina would not result in alteration of the location and extent of existing farm footprints nor would it necessitate the expansion of agricultural land into rangeland, grassland, or forests. Further, camelina is not used for food, ensuring no displacement of food-based production on agricultural land currently used to grow row crops. As noted within the RDEA, “the development of energy crops adapted to be highly productive on lands marginal for other agricultural uses could reduce the potential impact of biofuel production on non-fuel crop production.” We believe camelina falls within this category of crops and would not contribute to potential land use changes that could adversely affect agriculture and forestry resources.

Impact 4.b: **Long-Term Operational-Related Effects on Biological Resources**

Similar to waste products, camelina was assigned a “zero” LUC value by CARB due to its quick maturity and unique growing cycles (between crop cycles on existing farmland) that provide soil benefits similar to those of a cover crop on idle or fallow established farmland where it is grown. Camelina is not widely used as a food product, thereby not displacing food or resulting in the expansion of agricultural acreage. Furthermore, Global Clean Energy’s patented camelina varieties do not require the use of pesticides or increased soil nutrients, eliminating the concern over runoff impacts. Additionally, camelina is a melliferous species that has been shown to enhance biodiversity where it is grown, providing a biological resources benefit to the land on which it is cultivated.

**Impact 7.b: Long-Term Operational-Related Effects on Geology and Soils**

The RDEA notes, “Even when soil erosion is not excessive, intensive agriculture can impair soil quality by depleting the natural supplies of trace elements and organic matter. In natural ecosystems, soil fertility is maintained by the diverse contributions and recycling of nutrients by a wide range of plant and animal species. When this diversity is replaced by a single species grown year after year, some trace elements are depleted if not replaced by fertilization. The organic content of the soil also diminishes unless crop residues or other organic materials are supplied in sufficient quantities to replace that consumed over time.”

Camelina provides similar protection to agricultural lands as cover crops – it prevents soil erosion and adds to crop diversity on the lands where it is planted. Furthermore, camelina provides nutrient benefits to soils including reduced nitrogen leaching, increased nutrient retention in soil, and improved soil fertility.

**Impact 10.b: Long-Term Operational-Related Effects on Hydrology and Water Quality**

Concerns are outlined within the RDEA over Agricultural nonpoint source (NPS) pollution, and its potential impacts to the water quality of rivers, lakes, and wetlands and contributions to contamination of estuaries and groundwater. Agricultural activities that cause NPS pollution include poorly located or managed animal feeding operations; overgrazing; plowing too often or at the wrong time; and improper, excessive, or poorly timed application of pesticides, irrigation water, and fertilizer. As noted previously, the cultivation of camelina does not require pesticide use, excessive fertilizer, or irrigation water. Camelina is a low water use crop that grows on dryland (non-irrigated) farms using natural rainfall as its irrigation source. Therefore, camelina does not contribute to adverse effects on water quality.

**Impact 11.b: Long -Term Operational-Related Impacts on Land Use and Planning**

While Global Clean Energy’s operations may require future/ongoing construction of new or modified infrastructure, these operations would occur on existing, appropriately zoned parcels not contributing to land use change. Further, our patented camelina varieties are grown in such a manner so as to not contribute to land use change. As discussed above under, “Agriculture and Forestry Resources,” “Biological Resources,” “Geology and Soils,” and “Hydrology and Water Quality,” camelina cultivation does not result in environmental effects associated with land use change that would be potentially significant as a result of implementing the increase of low carbon fuel alternatives.

**Impact 13.b: Long-Term Operational-Related Effects on Noise and Vibration**

Global Clean Energy’s patented camelina varieties are harvested using farmers’ existing equipment. Global Clean Energy’s camelina oil is processed into ultra-low carbon renewable fuels at our Bakersfield Renewable Fuels Refinery – a former petroleum refinery that is being refurbished as a renewable fuels refinery. The noises and vibrations associated with the cultivation and processing of feedstock into renewable fuels would remain at the existing noise levels for present-day farming and refining operations. Furthermore, Global Clean Energy’s refinery contains existing rail lines that will be used to transport the majority of feedstock from out of state. By utilizing these existing railways and rail schedules, no increase in sound or vibrations to current rail operations would be expected. There would not be a substantial increase in either noise or vibration associated with Global Clean Energy’s operations.

**Impact 19.a: Long-Term Operational-Related Effects on Utilities and Service Systems**

Global Clean Energy’s Bakersfield Renewable Fuels Refinery is in the process of installing a 10 MW solar farm on the 510-acre refinery property. This installation is expected to relieve utility demand for refinery activities and send excess energy produced onsite to the grid for community use. Further, our patented camelina feedstock grows on dryland farms and does not require increased irrigation (see above). Therefore, no increased water demand or electricity demand is associated with Global Clean Energy’s operations. Furthermore, Global Clean Energy’s fuels produce zero waste. Once our camelina oil is extracted, the remaining biological materials are converted into a livestock feed for use in California, reducing the need for livestock feed imports into the state.

Conclusion

As noted within the RDEA, “Continued implementation of the LCFS program will continue to send market signals that incentivize use of fuels with less potential for land conversion and associated effects on biological species.” (RDEA at p. 100.)Global Clean Energy’s renewable fuels production operations are vertically integrated from farm to fuel, do not contribute to land use change, and provide multiple benefits to the biological environment – from capturing carbon in the soil while camelina is grown, to producing ultra-low carbon renewable fuels to power large scale machinery, equipment, and transportation. We encourage CARB to incentivize the use of camelina-based renewable fuels and other sustainable renewable fuels as the regulatory process continues, and to encourage the incorporation of renewable fuels’ sustainability benefits within AB 32 Scoping Plan procedures. We request that CARB should clarify that these significance determinations in the RDEA are not applicable to any subsequent project-level environmental review of the use of camelina feedstock.

Sincerely,

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1. CARB, Staff Summary, Method 2B (Feedstock Only) Application, Sustainable Oils, Camelina Sativa to Camelina Oil, available at https://ww2.arb.ca.gov/sites/default/files/classic/fuels/lcfs/2a2b/apps/so-camelina-oil-sum-110714.pdf [↑](#footnote-ref-1)