

# PEARSON *FUELS*

December 21, 2022

Liane M. Randolph  
Chair, California Air Resources Board  
1001 I Street  
Sacramento, CA 95814

## RE: Pearson Fuels Comments on Potential Changes to the Low Carbon Fuel Standard

Dear Chair Randolph,

RTC Fuels, LLC, dba Pearson Fuels (“Pearson Fuels”), appreciates the opportunity to provide comments on Potential Changes to the Low Carbon Fuel Standard (“LCFS”). Pearson Fuels is the largest distributor of E85 in California, supplying more than 300 public and private fueling locations across the state. More than 100 additional Pearson Fuels sites are planned to open in the next 24 months. Pearson Fuels has developed two large wholesale biodiesel blending terminals and five biofuel transload facilities. Pearson Fuels is also providing the only E85 fuel rack in California, which replaces the gasoline component of E85 with renewable naphtha. Paired with cellulosic ethanol, E85 with renewable naphtha is fully renewable and low aromatic with GHG reductions approaching 80% compared to CARB gasoline.

### Summary

As the leading distributor of E85 fuel in California, Pearson Fuels applauds the California Air Resources Board’s (“CARB”) development and implementation of the LCFS. As recognized in the 2022 Final Scoping Plan (“Scoping Plan”), the LCFS program is the most effective program in the transportation sector. The Scoping Plan similarly recognizes that increasing the rate of LCFS carbon intensity (“CI”) reductions and extending the schedule of CI reductions is therefore essential to California’s success in fulfilling the requirements of AB 32 and achieving carbon neutrality by 2045. We support the most aggressive LCFS target for the state, including a 35% CI reduction by 2030. We also support changes to CARB’s modeling approach that will more accurately reflect the opportunities for decarbonization and de-fossilization that E85 presents to the state.

While recognizing the enormous success of the LCFS program, we strongly encourage CARB to develop complementary policies to further accelerate the decarbonization and de-fossilization of transportation sector fuels. Meeting Scoping Plan targets requires California to reduce fossil fuel consumption 94% by 2045. Given the continued dominance and long lifespans of internal combustion engines (“ICE”), the only way California can feasibly meet this target is to speed the transition to low carbon liquid fuels in legacy ICE vehicles. Other than a website that tracks the remarkable growth of E85 fuel demand,<sup>1</sup> CARB has thus far overlooked opportunities to develop

---

<sup>1</sup> CARB website, “Alternative Fuels: Annual E85 Volumes,” at <https://ww2.arb.ca.gov/resources/documents/alternative-fuels-annual-e85-volumes>

# PEARSON **FUELS**

programs to further leverage California’s existing fleet of flex fuel vehicles (“FFVs”) capable of utilizing E85. The California Energy Commission tallied 1.2 million FFVs in the state’s light-duty fleet at the end of 2021.<sup>2</sup>

## CI Reduction Target

**Pearson Fuels supports CARB staff’s Alternative C with a 35% CI reduction target in 2030.** This scenario will best support LCFS credit prices and incentivize the use of lower carbon fuel options.

## Opportunities to Improve CATS Modeling

We realize CARB cannot achieve this ambitious target without aggressive and immediate GHG reductions. Therefore, **we urge CARB to realize the potential of deploying ultra-low carbon E85, produced from a blend of cellulosic ethanol and renewable naphtha – and further enhanced with CO<sub>2</sub> capture and permanent storage – as a near zero CI fuel opportunity.** The California Transportation Supply Model (“CATS”) must implement several changes, or include new options, to its “Ethanol” and “E85” pathways to accurately demonstrate these reductions.

In its “Ethanol” section (p. 12), the Draft CATS Model Documentation uses a CI for corn ethanol of 66 gCO<sub>2</sub>e/MJ based on average registered pathways. However, the most recent quarterly average ethanol CI was 59.71 gCO<sub>2</sub>e/MJ. We recommend CARB use a four-quarter rolling average CI for ethanol to achieve better accuracy with this model.

In its “Ethanol and Ethanol with CCS” section (p. 20), the Draft CATS Model Documentation states: “For modeling purposes, it was assumed that the majority of CO<sub>2</sub> captured from ethanol would either be used or stored in oil and gas fields.” We recommend CARB implement an additional pathway for ethanol with carbon capture and permanent storage. One ethanol producer is currently capturing and storing CO<sub>2</sub> near its site,<sup>3</sup> with other production plants planning to do the same.<sup>4</sup> Several ethanol biorefineries<sup>5,6</sup> are planning to capture and transport CO<sub>2</sub> via pipeline for permanent sequestration. The ethanol industry is advantageous for CO<sub>2</sub> capture and storage because the production process yields “a high-purity (99%) gaseous CO<sub>2</sub> stream consisting only of CO<sub>2</sub>, H<sub>2</sub>O, and small amounts of organic and sulfur compounds.”<sup>7</sup> Ethanol with CCS and permanent storage will be easily traceable under the LCFS.

---

<sup>2</sup> California Energy Commission (2022). Light-Duty Vehicle Population in California. Data last updated April 29, 2022]. Retrieved [October 12, 2022] from <https://www.energy.ca.gov/zevstats>

<sup>3</sup> Ethanol Producer: “Red Trail Energy begins carbon capture and storage” at <https://ethanolproducer.com/articles/19447/red-trail-energy-begins-carbon-capture-and-storage>

<sup>4</sup> Ethanol Producer: “Carbon America to develop CCS project at Nebraska ethanol plant” at <https://ethanolproducer.com/articles/19655/carbon-america-to-develop-ccs-project-at-nebraska-ethanol-plant>

<sup>5</sup> Heartland Greenway, Navigator CO<sub>2</sub> website at [https://d3o.151.myftpupload.com/?page\\_id=612](https://d3o.151.myftpupload.com/?page_id=612)

<sup>6</sup> Summit Carbon Solutions website at <https://summitcarbonsolutions.com/project-footprint/>

<sup>7</sup> Sanchez DL, Johnson N, McCoy ST, Turner PA, Mach KJ. Near-term deployment of carbon capture and sequestration from biorefineries in the United States. Proc Natl Acad Sci U S A. 2018 May 8;115(19):4875-4880.

# PEARSON *FUELS*

Related to “E85” (p. 20), we recommend CARB include a pathway for E85 that utilizes renewable naphtha in place of CARBOB to show the tangible benefits of E85. Additionally, we urge CARB to recognize that almost all cellulosic ethanol moving into California has a CI below 30 gCO<sub>2</sub>e/MJ. Pearson Fuels has been blending cellulosic ethanol and renewable naphtha, with a CI around 20 gCO<sub>2</sub>e/MJ, to create a remarkably low CI, finished E85. When carbon capture and sequestration is attributed to the corresponding cellulosic ethanol gallons, this E85 will have a final CI nearer to zero than the 35 gCO<sub>2</sub>e/MJ currently used in CATS modeling. Further, this ultra-low carbon E85 eliminates the need for petroleum gasoline and can help California accelerate its transition away from fossil fuels. We continue to urge CARB to leverage this existing technology as an avenue to meet its goal of reducing liquid petroleum consumption 94% by 2045.

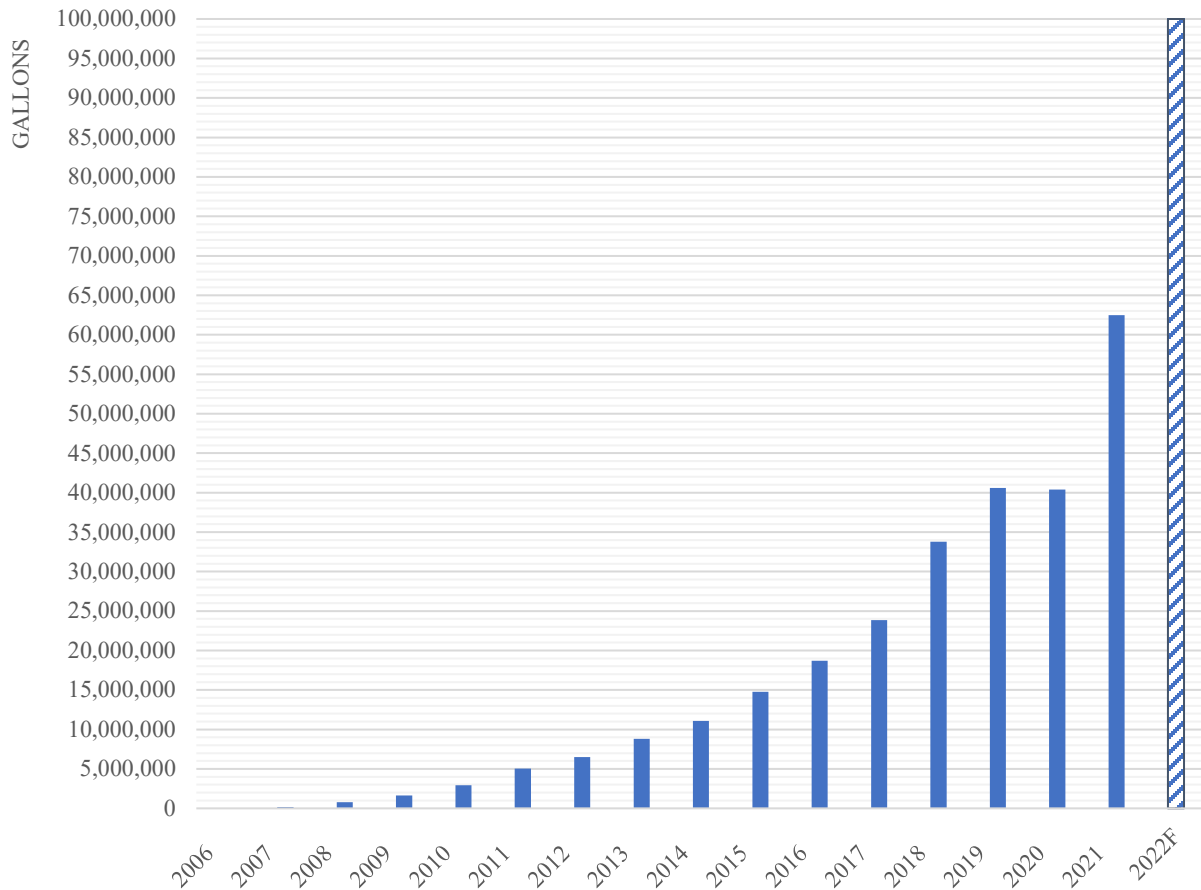
In its “E85” section (p. 20), the Draft CATS Model Documentation states: “...because the demand for E85 is limited due to vehicle technology, and providing E85 to customers requires tailored infrastructure and blender pumps, there is additional cost associated with bringing E85 to market relative to E10.” We feel strongly the former statement is a misinterpretation of historical E85 usage in California.

---

doi: 10.1073/pnas.1719695115. Epub 2018 Apr 23. Erratum in: Proc Natl Acad Sci U S A. 2018 Oct 16;115(42):E9991. PMID: 29686063; PMCID: PMC5948974.

# PEARSON *FUELS*

## California's Annual E85 Volumes

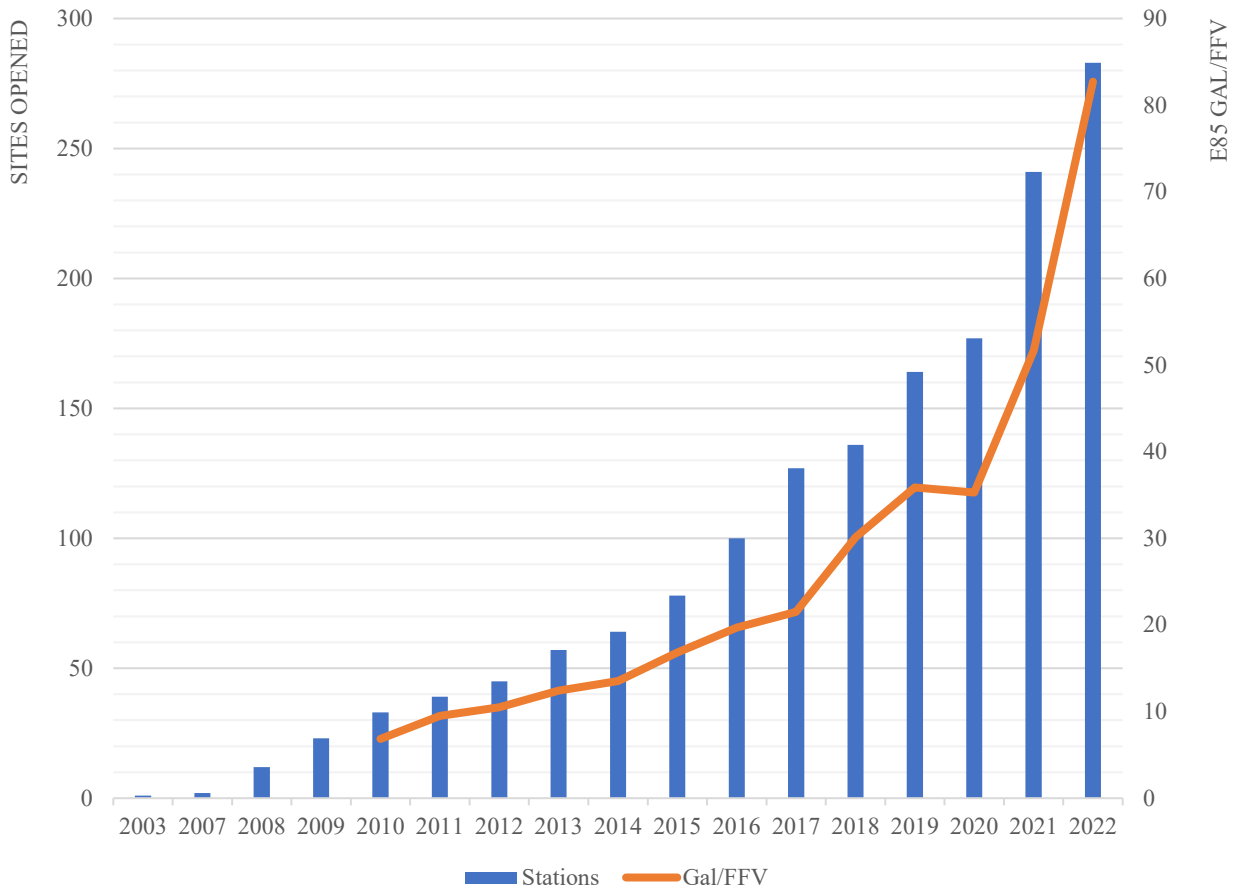


We do not believe demand for E85 has reached its upper limit. Using CARB-verified data on annual E85 usage in California, the number of California vehicles capable of using E85, and E85 sites in California,<sup>8</sup> we know E85 use per FFV increased 656% from 2010 to 2021. We estimate California's E85 volume at 100 million gallons in 2022, based on internal sales to date. Holding the total number of FFVs steady from 2021 to 2022, annual E85 usage per FFV will increase to 82.72 gallons from 51.68 – clear evidence vehicle technology has not capped in-state demand.

<sup>8</sup> Alternative Fuels Data Center, [https://afdc.energy.gov/fuels/ethanol\\_locations.html#/find/nearest?fuel=E85](https://afdc.energy.gov/fuels/ethanol_locations.html#/find/nearest?fuel=E85)

# PEARSON *FUELS*

## E85 Sites Opened in California & E85 Gallons Per FFV



While offering E85 at a retail station does require tailored infrastructure, the cost to install that equipment at a greenfield site is nominal. Compared to choosing only E10 at a new retail location, including E85 at one fueling position would only add about \$10,000 – total – based on our knowledge of hundreds of retail conversions and installations.

Adjusting the model's figures accordingly should lower the expected cost to bring E85 to the market and yield greater benefits.

Thank you for your consideration of our recommendations.

Sincerely,

Jeff Wilkerson  
Government Policy and Regulatory Affairs Manager  
Pearson Fuels