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November 5, 2019

Re: Comments of POET LLC on the Transportation and Climate Initiative's Framework for a Draft Regional Policy Proposal

SUBMITTED VIA THE ONLINE PORTAL

POET, LLC (POET) hereby submits these comments on the Transportation and Climate Initiative's (TCI) Framework for a Draft Regional Policy Proposal (Framework), which furthers the organization's efforts to develop a regional low-carbon transportation policy for the 12 Northeast and Mid-Atlantic States and the District of Columbia. As outlined below, biofuels are poised to provide a crucial means for achieving the TCI's goals of delivering a cleaner and more resilient transportation system, reducing greenhouse gases (GHGs) and other harmful pollutants, and benefiting those communities that are disproportionately burdened by air pollution. POET strongly supports and looks forward to contributing to TCI's objective to incorporate community engagement, equity and environmental justice into the Framework.

POET is the world's largest biofuel producer, with 28 state-of-the-art facilities that produce close to 2 billion gallons of corn starch and cellulosic ethanol, as well as other biorefined products. POET was recently recognized by *Fast Company* Magazine as one of the most innovative transportation companies in the United States. POET is deeply committed to decarbonizing transportation and developing cleaner, affordable alternatives to fossil fuels. We believe biofuels can play a very important role in TCI's program to achieve a low-carbon future.

I. The Role of Biofuels in Transportation Sector GHG Reductions

a. Increased Use of Biofuels Can Significantly Reduce CO_2 Emissions from Combustion of Transportation Fuels in the Near Term.

Greater use of biofuels can significantly contribute to the TCI's objective of reducing CO_2 emissions from transportation fuel use. Emission guidelines established by the Intergovernmental Panel on Climate Change, the U.S. Environmental Protection Agency (EPA), and the State of California all recognize the combustion of biofuels for transportation purposes as carbon neutral.[1] The carbon released through biofuel combustion is balanced by the uptake of

[1] *U.S. Energy Information Administration, Monthly Energy Review, Environment Section, Section Note*, U.S ENERGY INFO. ADMIN. (June 2019), https://www.eia.gov/totalenergy/data/monthly/pdf/sec12_n.pdf; *Low Carbon*

carbon when biomass feedstock is grown, resulting in zero net emissions over time. For this reason, California's cap-and-trade program—which covers transportation sector GHG emissions—provides that any CO_2 emissions from the combustion of biodiesel and ethanol do not result in an allowance obligation.[2] Similarly, the Regional Greenhouse Gas Initiative (RGGI)—a cap-and-trade program for power plants in which multiple TCI jurisdictions participate—treats power generated from eligible biomass[3] to be carbon neutral and exempt from allowance surrender obligations.[4]

Even on a life-cycle basis, biofuels have significantly lower life-cycle GHG emissions than gasoline and diesel. A 2018 peer-reviewed study by the U.S. Department of Agriculture found that the life-cycle GHG emissions attributable to corn ethanol are 39% lower than gasoline; the study further found that, based on prevailing industry trends, corn ethanol's life-cycle GHG emissions could be 47-70% lower than gasoline by 2022.[5]

Relative to other tools to reduce transportation sector CO_2 emissions, greater use of biofuels can provide immediate and large-scale benefits. Virtually all gasoline sold today contains 10% ethanol ("E10"). Almost all of the existing fleet of cars and trucks (those not designed to run on diesel or electricity) can use 15% ethanol ("E15").[6] E15 increases the biofuel content in gasoline by 50% above E10. E15 is EPA-approved for all gasoline vehicles model year 2001 and newer, which cumulatively represents more than 90 percent of vehicles on the road.

Moreover, as of 2017, there are more than 21 million flex-fuel vehicles (FFVs) on the road in the United States, which can support up to 85% ethanol ("E85").[7] Of that number, approximately 4.4 million FFVs are in use in the 12 TCI states.[8]

Fuel Standard, CALIFORNIA AIR RESOURCES BOARD, https://ww3.arb.ca.gov/fuels/lcfs/background/basics-notes.pdf, at p. 18.

[2] CAL. CODE REGS. tit. 17, § 95852.2(a)(5), (6) (2019).

[3] "Eligible biomass" includes sustainably harvested woody and herbaceous fuel sources that are available on a renewable or recurring basis, including …other neat liquid biofuels derived from such fuel sources." *Model Rule*, RGGI (Dec. 14, 2018), https://www.rggi.org/sites/default/files/Uploads/Design-Archive/Model-Rule/2017-Program-Review-Update/2017_Model_Rule_revised.pdf, at p. 11.

[4] *Emissions*, RGGI, https://www.rggi.org/allowance-tracking/emissions

[5] *The greenhouse gas benefits of corn ethanol-assessing recent evidence*, BIOFUELS (Mar. 25, 2019), https://www.tandfonline.com/doi/pdf/10.1080/17597269.2018.1546488?needAccess=true.

[6] *See* Partial Grant of Clean Air Act Waiver Application Submitted by Growth Energy To Increase the Allowable Ethanol Content of Gasoline to 15 Percent, 76 Fed. Reg. 4,662 (Jan. 26, 2011), available at https://www.federalregister.gov/documents/2011/01/26/2011-1646/partial-grant-of-clean-air-act-waiver-application-submitted-by-growth-energy-to-increase-the.

[7] *Flexible Fuel Vehicles*, U.S. DEPT. OF ENERGY, https://afdc.energy.gov/vehicles/flexible_fuel.html.

[8] Note that information is unavailable for the number of FFVs in Washington, D.C. *E15 & Flex Fuel Trailer Roadmap*, AMERICAN COALITION FOR ETHANOL (2016-2017), https://flexfuelforward.com/roadmap/wp-content/uploads/E15_Flex_Fuel_Retailer_Roadmap.pdf.

CO_2 reduction benefits increase in proportion to the increased share of biofuels blended into gasoline, and higher-level ethanol blends are readily suited for today's vehicles. Indeed, ethanol is the only realistic, available means to significantly decarbonize fuels for internal-combustion passenger vehicle engines.

b. Ethanol Provides an Affordable Solution to Climate Change and is of Particular Benefit to Lower-Income Consumers.

Because ethanol has typically been less expensive than gasoline, higher ethanol blends can lower TCI compliance costs and provide immediate CO_2 reduction benefits. E15 can be offered at a discount to regular gasoline while providing more octane. This is because ethanol historically has been sold at a discount to gasoline, as demonstrated in Figure 1. Thus, E15 lowers prices at the pump for consumers, without even accounting for programs that add a premium to low carbon intensity fuels. Furthermore, the availability of lower-cost biofuels can reduce compliance credit costs under the TCI as there becomes less "demand" for compliance credits due to a greater supply of low-carbon fuels.

Both E15 and E85 are primed for significant increased use in TCI states. Until several months ago, year-round sales of E15 had been saddled by unjustified federal limits in some regions; EPA recently correctly lifted these limitations.[9] Further, the largest TCI member with state-level restrictions on E15 – New York – is poised to remove those restrictions this fall.[10] The TCI process can help improve the recognition of biofuel as a key climate mitigation tool. POET is aware of over 200 stations already offering E15 in Maryland, Pennsylvania, and Virginia. With virtually all vehicles now E15-compatible under federal law and with remaining statewide barriers falling by the wayside, TCI jurisdictions could lead the nationwide shift from E10 to E15, which increases by 50% the availability of low-carbon biofuels in gasoline.

As noted above, millions of underutilized FFVs are already in circulation in TCI states. Existing FFVs (as well as future FFVs that could be manufactured at low marginal cost) are a climate mitigation tool available to many lower-income motorists and would become an even more attractive mitigation tool if an additional pricing incentive were added to the already competitive cost of ethanol.

In California, with a supportive policy environment, E85 demand has increased an average of more than 30% per year for the last 12 years, and increased over 40% from 2017 to

[9] Modifications to Fuel Regulations to Provide Flexibility for E15, 84 Fed. Reg. 26,980 (Jun. 10, 2019), available at https://www.federalregister.gov/documents/2019/06/10/2019-11653/modifications-to-fuel-regulations-to-provide-flexibility-for-e15-modifications-to-rfs-rin-market.

[10] *See* XLI, N.Y. Reg. 1 (July 24, 2019), available at https://www.dos.ny.gov/info/register/2019/july24.pdf. Of the other TCI states, only Delaware and Rhode Island appear to have potential state law impediments to E15 sales.

2018 to a total of over 33 million gallons.[11] Even a modest TCI carbon cap could spur a shift from E10 to E15, while also helping to incentivize those drivers who already have FFVs to begin using more biofuels.

c. Increased Use of Biofuels Can Promote the TCI's Environmental and Equity Objectives.

Increased use of biofuels can help the TCI program maximize co-benefit improvements in local air quality for low income and vulnerable communities that have been plagued by harmful pollutants. Combustion of the fossil fuel component of gasoline and diesel results in harmful particulates and toxic aromatics like benzene and toluene.[12] Increased biofuel-blending can mitigate these emissions. Biofuels' displacement of harmful fuel additives is further illustrated by a recent study conducted by the University of California Riverside (UCR), which found that greater use of ethanol-blended fuels can reduce carbon monoxide, ozone, and particulate matter levels relative to the use of gasoline-only fuels.[13]

The effect that increased biofuel-blending can have on reducing air pollution is especially significant for communities of color in the Northeast and Mid-Atlantic regions. Research has shown that on average, communities of color in these regions breathe in 66% more air pollution from vehicles than white residents.[14] Vehicle pollution is a key culprit of air quality issues for these communities.[15] Biofuel-blended fuel is positioned to ease the pollution burdens these communities bear, including reducing the toxic constituents in gasoline.

Further, higher biofuel blends may be a primary means of reducing cost impacts of the TCI program on low income consumers. While other means of alternative personal transportation may be relatively expensive or require extensive infrastructure upgrades, higher

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[11] *Annual E85 Volumes*, CALIFORNIA AIR RESOURCES BOARD (Feb. 13, 2019), https://ww3.arb.ca.gov/fuels/altfuels/e85/annuale85vol_02-2019.pdf

[12] *See e.g., New Studies Show Ethanol Reduces Emissions and Improves Air Quality*, URBAN AIR INITIATIVE (Apr. 11, 2018), https://fixourfuel.com/2018/04/11/new-studies-show-ethanol-reduces-emissions-and-improves-air-quality/. *See also*, University of California CE-CERT, *Impacts of Aromatics and Ethanol Content on Exhaust Emissions from Gasoline Direct Injection (GDI) Vehicles* (April 2018).

[13] S. Mueller, *et. al., The Impact of Higher Ethanol Blend Levels on Vehicle Emissions in 5 Global Cities*, UNI. OF ILLINOIS AT CHICAGO (Nov. 2018), http://www.erc.uic.edu/assets/pdf/UIC5cities_HEALTH_Nov12_Final.pdf. *See also*, J. Yang, et. al., *Investigation of the Effect of Mid- And High-Level Ethanol Blends on the Particulate and the Mobile Source Air Toxic Emissions from a Gasoline Direct Injection Flex Fuel Vehicle* (Dec. 2018) at https://pubs.acs.org/doi/10.1021/acs.energyfuels.8b02206 (finding ethanol reduces emissions of hydrocarbons, CO, NO_x, BTEX and particulate matter versus E10 blends).

[14] *Inequitable Exposure to Air Pollution from Vehicles in the Northeast and Mid-Atlantic*, UNION OF CONCERNED SCIENTISTS (June 21, 2010), https://www.ucsusa.org/resources/inequitable-exposure-air-pollution-vehicles

[15] *Vehicles, Air Pollution, and Human Health*, UNION OF CONCERNED SCIENTISTS (July 18, 2014), https://www.ucsusa.org/resources/vehicles-air-pollution-human-health

biofuel blends can be utilized by nearly all consumers, and can be offered at a discounted price relative to higher GHG emitting fuels. Higher biofuel blends are a way to share the economic advantages of a low carbon transportation sector with low income consumers.

II. POET's Comments on the Framework

a. Excluding biofuels from the definition of "affected fuel" is consistent with the environmental, equity, and administrative objectives of the TCI.

POET supports the position that the definition of "affected fuels" should only include the fossil fuel component of gasoline and diesel. The Framework outlines a regulatory program focused on capping CO_2 emissions from combustion of transportation fuels. It is consistent with this cap design for the "affected fuels" to include only those fuels that have CO_2 emissions from combustion, *i.e.*, the fossil fuel component of gasoline and diesel. As discussed above, international, federal, and state policies all recognize that combustion of biofuels results in zero net CO_2 emissions.

Excluding biofuels from the definition of "affected fuels" also is consistent with the TCI's objectives of administrative simplicity and transparency. The number of "position holders" for the fossil component of gasoline and diesel is relatively finite. By contrast, the number of position holders for biofuels is two to three times larger, and includes many relatively small companies. Therefore, including biofuels in the definition of "affected fuels" would encompass many more regulated entities and require more complicated reporting and verification, thereby substantially increasing the administrative burden on both the regulators and the regulated community.

By imposing allowance costs only on the fossil fuel component of gasoline and diesel, the TCI program would create robust incentives for increased use of biofuels and bring about numerous environmental and economic benefits. As discussed above in Section I, such incentives would result in substantial and near-term CO_2 emission reductions, reduce conventional air pollutants, benefit low-income communities and communities of color disproportionally impacted by pollution, and help moderate the impact of the cap on prices at the pump to further the TCI's environmental and equity objectives.

Furthermore, excluding biofuels from the definition of "affected fuels" would render biofuels a significant and immediately-available compliance option in the TCI program. By contrast, regulating biofuels as an "affected fuel" runs the risk of effectively transforming the emissions cap into a regional cap on liquid fuels—an outcome that would run counter to the TCI's objectives for equity and environmental justice.

b. Revenues from allowance sales should be used to support biofuels.

Revenues generated by allowance sales to prime suppliers and other regulated entities would be well utilized in, and should be allocated to, the biofuel space. Specifically, two suggested investments would aid TCI jurisdictions to meet their goal to expand low-carbon and clean mobility options to communities who are disproportionately adversely affected by climate change and transportation pollution.

First, investment funds can be put towards facilitating the deployment of blender pump equipment and additional retail gas station tanks that can support a higher concentration of blended fuel (up to E85). While most newer E10 fuel distribution equipment is compatible with E15, programs could assist with upgrading older gas station equipment and facilitating broader product offerings such as E85.

Increased blender pump and tank equipment will allow more retailers to provide higher ethanol blends, and improve the availability and cost of motor fuels for consumers. E15 is currently sold at prices that are 3 to 10 cents per gallon less than regular gasoline. Thus, the investment in equipment can yield higher sales volumes over time. Studies show that motorists will drive 10 minutes out of their way to buy fuel that is 5 cents less than the norm. Therefore, a tailored tax credit or credit support could be particularly meaningful for the many retail stations that are "mom and pop" or family-owned stations that cannot otherwise finance infrastructure upgrades.

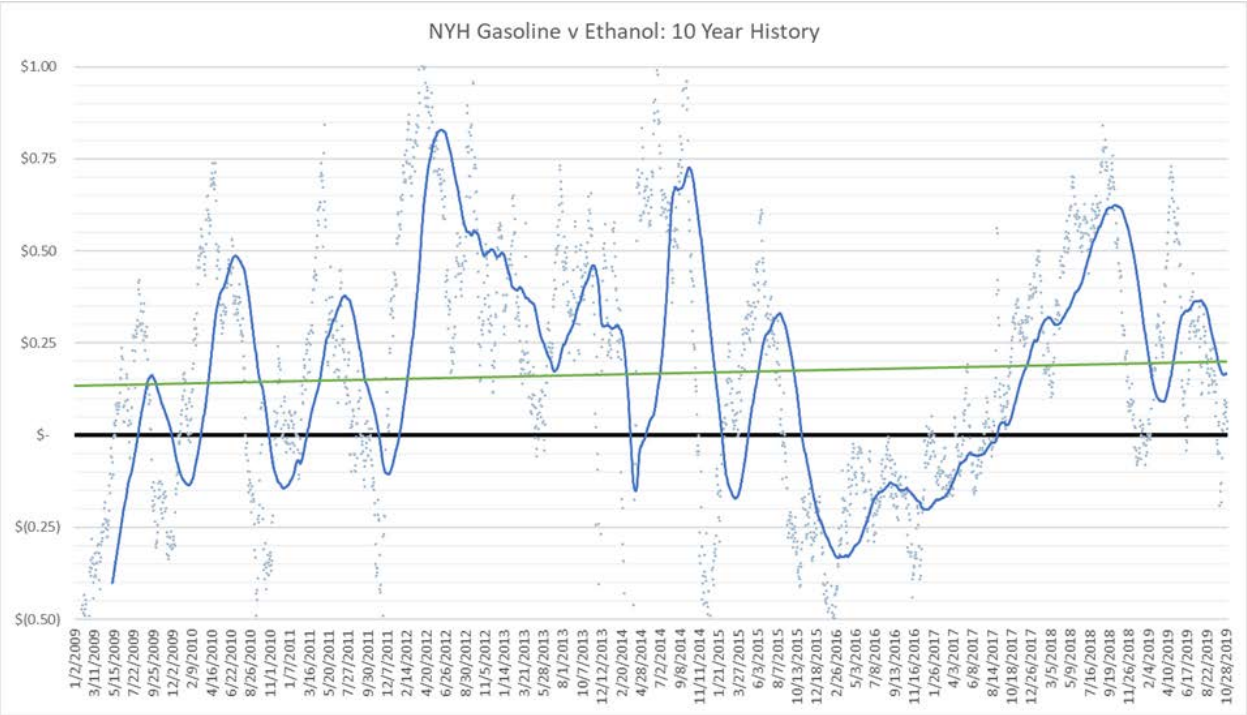
Second, investment funds can be put toward tax credits for retailers to sell E15 or higher blends. The availability of these blends will offer motorists in all communities stabilized gas prices and lower tailpipe emissions impacting air quality and in turn, improving public health, especially in vulnerable communities.

III. Conclusion

POET appreciates the opportunity to comment on the Framework. Biofuels can significantly reduce CO_2 emissions from cars and trucks in TCI states, benefit low-income communities disproportionally impacted by pollution, and help moderate the impact of the CO_2 cap on prices at the pump to further the TCI's environmental and equity objectives. POET looks forward to being part of the ongoing TCI stakeholder discussion.

If you have any questions or would like additional information, please contact Shai Sahay, Senior Regulatory Counsel at POET, at shailesh.sahay@poet.com.

Figure 1



Positive value indicates net discount of ethanol compared to fossil component of gasoline. Green line indicates long term trend line of discount.