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By e-mail:

DNRECHearingComments@delaware.gov
Ms. Theresa Newman, Hearing Officer
Delaware Department of Natural Resources
and Environmental Control
Office of the Secretary 89 Kings Highway
Dover, DE 19901

Re: Comments on Proposed Amendments to 7 DE Admin. Code 1140, Delaware Low Emission Vehicle, Advanced Clean Car II Rule

PBF Holding Company LLC, a subsidiary of PBF Energy Inc. (“PBF”), respectfully submits these comments in response to the Department of Natural Resources and Environmental Control’s (DNREC) proposed Amendments to 7 DE Admin. Code 1140, Delaware Low Emission Vehicle, Advanced Clean Car II (ACC II) rule. PBF is one of the largest independent petroleum refiners and suppliers of unbranded transportation fuels, heating oil, petrochemical feedstocks, lubricants and other petroleum products in the United States.

PBF subsidiaries currently own and operate six domestic oil refineries in five states, with two of our subsidiaries, Delaware City Refining Company and PBF Logistics, operating in the State of Delaware. The rest of our refineries are located in New Jersey, Ohio, Louisiana and California, with combined processing capacity of approximately 900,000 barrels per day.

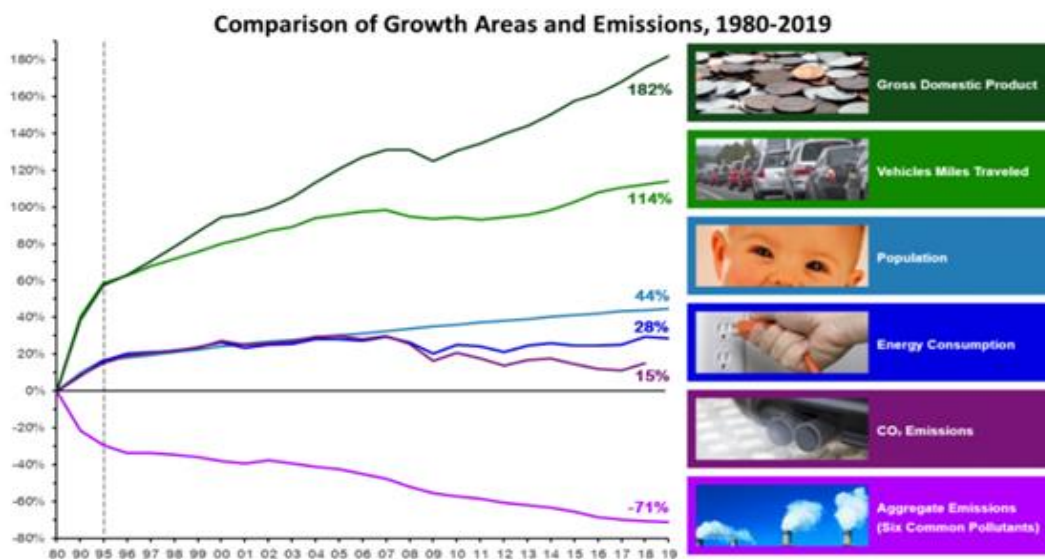
PBF employs about 3,500 people nationally and 546 in Delaware. As one of the largest U.S. merchant refiners - with the most East Coast refining capacity – de facto mandates for expanding vehicle electrification would have a significant, negative impact on PBF’s manufacturing and by default, transportation fuel consumers in Delaware, as well as refinery workers and our contractors/labor unions, vendors, suppliers, and customers, including petrochemical plants.

Specifically, as noted in PBF’s comments to Delaware’s Climate Action Plan (CAP), electric vehicle mandates could significantly raise the cost of and diminish mobility for Delaware residents, businesses, and government entities, while also hampering the competitiveness of East Coast fuel manufacturers, who compete with foreign refiners that literally “dump” surplus gasoline in regional ports that serve Delawareans, including Wilmington, Philadelphia, and Baltimore.

I. Any new transportation greenhouse gas (GHG) or other emission reduction program must recognize the extent of transportation emission reductions that have already been achieved – and will continue to progress - due to existing transportation-related regulations.

A. *Extensive federal emission regulations for the transportation sector will continue driving emission reductions.*

While DNREC’s November 2022 presentation detailing a summary of and justification for adopting California’s ACCII internal combustion engine (ICE) ban focused on criteria pollutants, the state’s announcement to adopt the measure makes clear that the primary purpose is to seek GHG reductions in pursuit of the Delaware Climate Action Plan (CAP).¹ Recent debates over reducing transportation sector emissions begin with the same flaw: Downplaying and/or ignoring existing regulations that have been and will continue driving emissions down in the transportation sector. U.S. Environmental Protection Agency (EPA) data shows that since 1970, all transportation sector emissions have decreased, despite significant increases in population, vehicle miles traveled (VMT) and Gross Domestic Product (GDP):²



Note:
CO₂ emissions estimate through 2018 (Source: [US Greenhouse Gas Inventory Report](#))
Gross Domestic Product: [Bureau of Economic Analysis](#)
Vehicle Miles Traveled: [Federal Highway Administration](#)
Population: [Census Bureau](#)
Energy Consumption: [Dept. of Energy, Energy Information Administration](#)
Aggregate Emissions: [EPA's Air Pollutant Emissions Trends Data](#)

Source: Environmental Protection Agency

¹ <https://news.delaware.gov/2022/03/03/delaware-to-adopt-zero-emission-vehicle-regulation/#:~:text=WILMINGTON%2C%20Del.,more%20choices%20at%20Delaware%20dealerships>.

² U.S. Environmental Protection Agency. *History of Reducing Air Pollution from Transportation in the United States*. Available at: <https://www.epa.gov/transportation-air-pollution-and-climate-change/accomplishments-and-success-air-pollution-transportation>

Several trends have contributed to such reductions, including federal regulations such as the combined National Highway Traffic Safety Administration (NHTSA) and EPA GHG tailpipe and Corporate Average Fuel Economy (CAFE) regulations. Federal and state gasoline taxes – which are carbon taxes – combined to add about 50 cents per gallon (cpg) of gasoline and over 57 cents per gallon of diesel fuel to prices at the pump on average.³ Delaware’s state gasoline tax is 23 cpg⁴, so motorists are already paying about 73 cents in taxes per gallon for gasoline and about 80 cents for diesel fuel.

This leads to the undisputable fact that any move towards forcing the electrification of the vehicle fleet on Delawareans will reduce the amount of tax revenue the state realizes from the purchase of liquid fuels, which will impact funds available for traditional infrastructure spending on highways, roads, and bridges.

Additionally, the federal Renewable Fuel Standard (RFS) contains GHG requirements for compliant biofuel. While these regulations create their own challenges that Congress and the Administration need to address,⁵ they are in part why the U.S. Energy Information Administration (EIA) projects continuing decreases in gasoline consumption for the foreseeable future. The agency’s latest Annual Energy Outlook (AEO) notes light-duty vehicle energy demand will continue decreasing through 2050 and that battery electric vehicles (BEVs) and plug in hybrid electric vehicles (PHEVs) will represent between 11 percent and 26 percent of the vehicles on the road in 2050.⁶

Policymakers and regulators everywhere, including DNREC, need to start by acknowledging the continuing, forecasted decreases in transportation sector demand and, thus, emissions reductions that will occur by default, given the existing regulatory environment, when considering the extent and necessity of new, additional state-based transportation sector GHG and other emission controls.

II. The ACC II Rule Does Ban Gasoline and Diesel Vehicles.

DNREC’s presentation on the ACC II requirements from last November states, “ACC2 requirements will not ban Gasoline/Diesel vehicles in Delaware.”⁷ This statement is false and misleading. PBF owns two refineries in California, representing approximately 20 percent of the

³ U.S. Energy Information Administration (EIA). Frequently Asked Questions. *How much tax do we pay on a gallon of gasoline and on a gallon of diesel fuel?* August 3, 2022. Available at: <https://www.eia.gov/tools/faqs/faq.php?id=10&t=10>

⁴ <https://dmv.de.gov/TransServices/MFSF/index.shtml?dc=mfsfFAQ>

⁵ For example, many environmental organizations feel the conventional biofuel mandated in the RFS has had the unintended consequences of increasing GHG emissions above what would have occurred without the fuels’ use. Additionally, declining gasoline consumption raises questions about how highway programs should be funded in the future.

⁶ U.S. Energy Information Administration (EIA). *Annual Energy Outlook 2023*. March 16, 2023. Available at: https://www.eia.gov/outlooks/aeo/pdf/AEO2023_Narrative.pdf; U.S. EIA. “Incentives and lower costs drive electric vehicle adoption in our Annual Energy Outlook.” *Today In Energy*. May 15, 2023. Available at: <https://www.eia.gov/todayinenergy/detail.php?id=56480&src=email>

⁷ DNREC. *Delaware’s Low Emission Vehicles, 7 DE Admin. Code 1140, Proposed Amendments for Advanced Clean Car II*. Virtual Public Workshop presentation. November 15, 16 and 17, 2022.

state's gasoline supply. As such, the company is intimately familiar with the ACC II rules and can definitively state they specifically and purposefully seek to ban sales, and eventually registration, of gasoline and diesel powered vehicles.

As further evidence, when announcing California's intention to advance the ACC II regulations, Governor Newsom expressly stated, "In the next 15 years, we will eliminate in the state of California the sales of internal combustion engines."⁸ As DNREC correctly noted in its ACC II November presentation, federal law requires any state opting into the California standards to, "do so identically."⁹

In response to the state's announcement on adopting ACC II, the auto industry's primary trade association, the Alliance for Automotive Innovation, sent Governor Carney a letter in March expressly noting, "The program you intend to adopt will require 100% of new vehicle sales to be electric by 2035, with standards increasing dramatically year over year until the 100% requirement in 2035."¹⁰

In addition to these examples, abundant information is readily available proving, without any doubt, that ACC II rules certainly do ban ICE vehicles.

III. The state's proposed ICE ban is unachievable, risks premature refinery capacity reductions and significantly higher consumer costs; which presents as an equity issue that will disproportionately impact lower income populations, particularly in urban areas where EV charging is problematic.

A. A 100 percent electric vehicle (EV) mandates is unachievable in Delaware.

As the previously mentioned letter from the Alliance for Automotive Innovation notes, "Although consumer interest continues to grow, and nearly 80 EV models are currently available, EVs comprised just over four percent, or roughly 651,000 of the nation's 14.9 million new vehicle sales. In Delaware, EVs comprised 3.75% of the state's new vehicle sales in 2021."¹¹ The letter goes on to list a litany of obstacles that need to be overcome to advance electric vehicle penetration that is so extensive, it can only be read as unachievable, before stating that Delaware electric vehicle sales would need to **increase by over 5,000 percent** to meet the requirements.¹²

In addition, despite generous government subsidies for EVs, substantial roadblocks stand in the way of consumer acceptance of adopting these vehicles, which are heavily dependent on extractive metals, minerals, and hydrocarbons, much of which is mined and refined outside the United States, with China leading the way on processing these materials. Among the many reasons consumers are reluctant to purchase EVs include the fact that the average price of an EV is about \$66,000 while Delawareans' average income in 2020 was \$34,513 according to the U.S. Census

⁸ <https://www.pbs.org/newshour/show/californias-move-to-ban-sales-of-new-gasoline-fueled-cars-could-spread-to-other-states>

⁹ DNREC. Virtual Public Workshop presentation. November 15, 16 and 17, 2022.

¹⁰ Alliance for Automotive Innovation. Letter to Governor John Carney. March 9, 2022.

¹¹ Id.

¹² Id.

Bureau;¹³ the batteries require rare metals and are difficult to recycle; the number of miles required to drive before an EV's hydrocarbon footprint is eclipsed ranges between 70,000 and 100,000 miles; they are only as green as their power source, which in Delaware is heavily dependent on hydrocarbons. The state's electrical energy generation mix in 2021 is reportedly comprising 86 percent natural gas, 6.8 percent coal, 1.7 percent biomass, 5.0 percent solar, 0.4 percent petroleum, and 0.1 percent wind.¹⁴

“Range anxiety” continues to be a leading objection, too, exacerbated by the amount of time required to “power up” and a lack of chargers, particularly in urban and exurban areas. Often unreported is the fact drivers typically have to pay to charge their vehicles, which includes while on the road, but also to set up a home charging station, which could require paying for new electric service, in addition to the charging system.

States that have aggressively been incentivizing vehicle electrification for years with public funds have yet to see anywhere near the extensive EV sales growth that would be needed to meet Delaware's proposed ICE ban. For example, California has long advanced policies to make gasoline and diesel fuel more expensive in a manner that makes electric vehicles seem cost effective in comparison. The state's low carbon fuel standard (LCFS) program went into effect in 2011 (for which electric vehicles can generate credits), fuels were placed under the state's cap and trade program in 2015 and it has long had one of the highest gas taxes in the nation at over 50 cents per gallon. These programs alone *add over one dollar per gallon to consumer fuel prices*, and they exclude the more than \$900 million in EV purchase incentives the state has paid for since 2011. Despite such measures, over the course of more than a decade, EVs, plug-in hybrid electric vehicles (PHEVs) and fuel cell vehicles (FECVs) collectively represent less than three percent of vehicles on the road.¹⁵

B. Aspirational EV mandates risk premature loss of regional fuel supplies.

Not only have California's large taxes and expensive regulations resulted in consumers paying the highest fuel prices in the nation, without greatly advancing electric vehicle adoption, but they have contributed to premature refinery closures that now leave the state short refining capacity and facing a fuel crisis.

Refineries plan out a timeline for major maintenance and capital projects, which entail hundreds of millions of dollars of investment, over the span of several years. A turnaround is a large-scale project that requires shutting down specific refinery units for planned maintenance and inspections to sustain safe, reliable operations. Major turnarounds occur every 1 to 2 years and cost between \$50–250 million. Capital projects are investments based on improvements in

¹³

https://datacommons.org/place/geold/10?utm_medium=explore&mprop=income&popt=Person&cpv=age%2CYears15Onwards&hl=en

¹⁴

https://en.wikipedia.org/wiki/List_of_power_stations_in_Delaware#:~:text=The%20corresponding%20electrical%20energy%20generation,petroleum%2C%20and%200.1%25%20wind

¹⁵ <https://www.energy.ca.gov/data-reports/energy-almanac/zero-emission-vehicle-and-infrastructure-statistics/light-duty-vehicle>

technology and regulatory requirements. Large project development to execution ranges from 3 to 5 years and construction is typically coordinated with unit turnaround cycles. Large multi-phase projects require more than ten years of planning to sequence and manage resources.

Like any other business, refineries need to know they will have a decent prospect of a return on their maintenance and capital project investments. Given the timeframes and amount of money required for refinery maintenance and capital projects, overly aggressive, aspirational regulations that essentially look to eliminate liquid transportation fuels can impact near term refining business decisions. Even when there is wide acknowledgement aspirational regulations are unachievable, they send a message to investors that refineries are not wanted. When faced with such signals, investors would often rather see refiners forgo capital projects and, in some cases, prematurely shut down assets rather than wait to see whether aspirational mandates, coupled with adverse market cycles, prevent a return on their massive expenditures. Such a scenario is exactly what happened in California.

Marathon's closed a 161,000 barrel per day refinery in Northern California, which it plans on turning into a 44,000 barrel per day renewable diesel facility. Phillips 66 is also closing two Northern California refineries totaling nearly 145,000 barrels per day of refining capacity, to be replaced with just over 44,000 barrels per day of renewable diesel production. The net result is a loss of over 218,000 barrels per day of fuel supply and more than 1,000 direct job losses, leaving the state short fuel relative to demand (and, as previously mentioned, without sufficient electric vehicle penetration to compensate for lost fuel supplies). California must now count on unreliable and extremely costly imports to meet demand that exceeds the state's fuel manufacturing capabilities, sending consumer prices skyrocketing and leaving them significantly higher than many other parts of the nation. While COVID likely accelerated refinery closures, the state's regulatory environment, which includes its proposed ICE ban, was cited as a major contributing factor in every instance.

Delaware could face a similar fate if it joins others in following California's lead. As DNREC notes, there are 15 states that follow California's previous ZEV standards. Four automatically opt into any new California standards, such as ACCII, including New York and New Jersey. More states opting into ICE bans enhances the probability of additional refinery closures in a region that has lost 70 percent of its indigenous refining capacity since 2009. Gas lines that materialized in the aftermath of the Colonial Pipeline cyber-attack and recent concerns over potential winter heating oil shortages already provide dire warnings of the consequences of lost refining capacity. These warnings should be particularly acute given the previously detailed inability to achieve 100 percent light duty electric vehicle sales by 2035.

C. DNREC's proposed car ban could leave the state with no vehicle supply; neither banned ICE vehicles or EVs.

Advocates of the Delaware's proposed ICE ban have argued the state has no choice but to follow California's actions if it wants any EV supplies delivered to the state's dealerships. Banning ICE vehicles will not ensure DE is allocated EVs. It is more likely to leave the state with no dealers.

As with any business, the supply of a product will go to areas with the largest demand and where the product can attract the most profit. Delaware is second to last among the states in motor vehicle demand. California, New York and New Jersey – each of which are also proposing ICE bans – are first, ninth and thirteenth respectively.¹⁶ EIA projects total, nationwide new EV and PHEV sales in 2035 will be approximately 2.6 million vehicles.¹⁷ Annual automobile demand in California, New York and New Jersey combined totals 2.9 million vehicles.¹⁸ If each state were to follow through on its ICE ban, EV demand in these states would represent about 300,000 more vehicles than EIA projects will be sold nationwide. In light of these facts, Delaware could adopt an ICE ban and be left with no vehicles, EV or otherwise. Mandates will not likely drive projected supplies higher given the various challenges associated with cost, mineral demand and other factors highlighted in these comments.

D. The poorest citizens bear the costs of failed, aspirational transportation mandates.

In addition to the fuel availability and energy security concerns, the poorest citizens bear the brunt of the consequences of poorly crafted transportation mandates. The average price of an electric vehicle is \$66,000, which remains higher than the median American income.¹⁹ Several minority organizations have raised concerns or legally challenged California’s overly aggressive climate policies and electric vehicle mandates, due to higher energy and transportation costs associated with such policies. In response to a Sierra Club advertisement praising Governor Newsome’s ICE ban Executive Order (EO), a California Latino organization noted:

You want to phase out our “polluting” cars, the ones we drive to work and take our kids to the park in. It would require us to write hefty checks for those expensive EVs you like so much, and then pay higher energy bill so we can afford to drive them.²⁰

Minority leaders suing California for racial bias in the state’s existing climate policies note:

The simple fact is that vast areas of California, and disproportionately high numbers of Latino and African American Californians, have fallen into poverty or out of homeownership, and California’s climate policies guarantee that housing, transportation and electricity prices will continue to rise while “gateway” jobs to the middle class for those without college degrees, such as manufacturing and logistics, will continue to locate in other states.²¹

¹⁶ <https://www.statista.com/statistics/196010/total-number-of-registered-automobiles-in-the-us-by-state/>

¹⁷ EIA. AEO 2023. Available at: <https://www.eia.gov/outlooks/aeo/data/browser/#/?id=48-AEO2023®ion=1-0&cases=ref2023&start=2021&end=2050&f=A&linechart=ref2023-d020623a.4-48-AEO2023.1-0~ref2023-d020623a.62-48-AEO2023.1-0~ref2023-d020623a.63-48-AEO2023.1-0&map=ref2023-d020623a.5-48-AEO2023.1-0&ctype=linechart&sourcekey=0>

¹⁸ <https://www.factorywarrantylist.com/car-sales-by-state.html>

¹⁹ <https://www.makeuseof.com/whats-the-average-price-electric-car/>

²⁰ United Latinos Vote. *An Open Letter to the Sierra Club*. Los Angeles Times. September 24, 2020

²¹

<https://static1.squarespace.com/static/56a45d683b0be33df885def6/t/5b9a834bc2241b0df2116e0a/1536852818>

The same organization recently filed lawsuit aimed at stopping California's ACCII regulations, arguing the mandate will unduly harm minority and low income populations given the exorbitant cost of electric vehicles.²²

Delaware should heed the warnings of the California experience, particularly since minorities represent 42 percent of the state's population. A 2035 ICE ban puts East Coast refining capacity and jobs at risk, threatening fuel availability and sending energy prices exponentially higher. Coupled with the high cost of whatever electric vehicles may be made available for sale, it will make transportation a luxury, disproportionately impacting the state's poorest citizens while putting its economy in jeopardy.

IV. DNREC should consider the other potential unintended consequences of trying to unnaturally force massive amounts of electric vehicles on consumers.

- A. *Mass vehicle electrification could result in higher criteria pollutant emissions, without reducing – and possibly increasing - GHG emissions.*

Much of the current debate assumes electric vehicles (EVs) are more environmentally friendly than internal combustion engine. However, a growing body of evidence indicates this may be inaccurate. Data from many studies indicates that the net environmental benefits from EVs often fails to accurately account for the source of electricity powering these vehicles or the GHG emissions associated with manufacturing and components. As one commentator noted before the Delaware Public Service Commission in 2019, "When all of these factors are considered carbon dioxide lifetime emissions savings may range between minus 3.2 and plus 3.8 tons, or an average of essentially zero savings."²³ These comments also note EV expansion could easily result in increased criteria pollutant emissions.

The California experience once again provides a cautionary tale. The state has had a renewable portfolio standard (RPS) in law since 2002, which requires large percentages of electricity to come from renewable sources. It is also widely considered to have the most aggressive GHG reduction laws in place, the first of which passed in 2006.²⁴ Despite these statutes, while the state saw some emission reductions in the early years of the laws taking place, it has seen its GHG emissions flat-line and slightly increase since 2017.²⁵

Such emissions are largely attributable to the fact that the state has had to rely on extensive use of natural gas fired power generation, not only to provide primary baseload fuel for electricity, but also to power backup generation needed to address renewable energy's intermittent nature. Natural gas fired electricity generation represented nearly 38 percent of the state's power in 2021, with wind and solar *combined* representing just under 26 percent.²⁶ As one commentator noted,

²² <https://cacurrent.com/civil-rights-group-sues-over-cas-gas-fueled-vehicle-sales-ban/>

²³ Stevenson, David. CRI Rebuttal Comments on (DE) PSC Docket 19-0377. October 23, 2019

²⁴ <https://www.law.berkeley.edu/research/cee/research/climate/climate-policy-dashboard/>

²⁵ Bryce, Robert. "California Screamin'." March 2324, 2023. Available on Substack at: <https://robertbryce.substack.com/p/california-screamin>

²⁶ <https://www.energy.ca.gov/data-reports/energy-almanac/california-electricity-data/2021-total-system-electric-generation>

the state used more natural gas to power electricity in 2021 than it did in 2011. It's important to note that California has the benefit of ample hydroelectric resources, both in state and from the Pacific Northwest;²⁷ resources not available to the PJM region. Finally, this data does not take into account GHG emission increases from leakage of industrial operations to other states or abroad. For example, due to the previously mentioned refinery closures, California now has to import between 80,000 and 100,000 barrels per day of finished petroleum fuels from abroad; primarily that are transported via ocean going tankers from Asia.

The PJM grid profile, coupled with the California experience, highlight why Delaware cannot assume that mandating 100 percent EVs will result in a net reduction of GHG or other emissions.

B. Mass vehicle electrification, combined with other policy developments, could result in skyrocketing electricity costs, while increasing the risk of rolling blackouts.

Not only have the cumulative effective of California's climate policies failed to create a completely renewable electricity grid, from which electric vehicles could be powered to theoretically lower overall emissions, but consumers in the state now experience the highest electricity prices in the nation outside of Hawaii. California's electricity prices are more than double the national average²⁸ and the state is prone to rolling blackouts to the point where, shortly after announcing its plan to ban gasoline and diesel powered vehicles, the Governor told Californians not to charge their electric vehicles, since the grid may be unable to handle the power load.²⁹ It is often more expensive to charge an EV in California than to fill up a gasoline powered automobile.³⁰

There are indications the Mid-Atlantic regional grid may be on its way to facing the challenges California is experiencing. In a February report, the regional grid operator, PJM, warned that overly rigid GHG reduction targets are putting grid reliability at risk, threatening supply and likely driving consumer prices higher.³¹ The report notes thermal retirements are on track to exceed supply from renewable electricity generation additions, noting policy factors helped drive and could continue to greatly exacerbate this situation. To the extent greater electric vehicle adoptions occurs in concert with mandates like those Delaware is seeking to adopt, it will amplify grid reliability concerns and certainly drive rates even higher; leaving transportation consumers that do choose EVs paying even more for energy needed to charge their vehicles that may not even be available when needed.

²⁷ Id. It is important to note that California also imports nearly a third of its power needs from electric generation outside the state, including ample supplies of hydropower from other Pacific Northwest states.

²⁸ Bryce. "California Screamin."

²⁹ Rahman, Khaleda. "Californians told not to charge electric vehicles days after gas car sales ban." *Newsweek*. August 31, 2022. Available at: <https://www.newsweek.com/californians-told-not-charge-electric-cars-gas-car-sales-ban-1738398>

³⁰ Moore, Alicia. "Are California public EV charging costlier than filling at the gas pump?" *Hydrogen Fuel News*. October 15, 2022. Available at: <https://www.hydrogenfuelnews.com/california-ev-charging-gas-pump/8555449/>

³¹ PJM Interconnection. "Energy Transition in PJM: Resource Retirements, Replacements and Risks." February 24, 2023. Available at: <https://www.pjm.com/-/media/library/reports-notice/special-reports/2023/energy-transition-in-pjm-resource-retirements-replacements-and-risks.ashx>

C. *Mass vehicle electrification raises other natural resource supply and humanitarian issues.*

Electric vehicles need significant quantities of cobalt. More than half the global supply of cobalt is located in the Democratic Republic of Congo, a large portion of which is mined using child labor.³² Policymakers should address the sustainability and humanitarian issues associated with cobalt supply before promoting overly aggressive EV targets. They should also assess the cost impacts on other consumer goods relying on cobalt, like cell phones, if significant quantities of the resource are reallocated to EV battery production.

In addition to cobalt, EVs require relatively large amounts of lithium. One study that explores meeting Europe's carbon reduction goals through mass EV penetration notes that, "The majority of lithium and cobalt is located in a few countries which is a potential risk for prices and security of supply."³³ This study indicates the lithium that would be needed if EVs were used to simply meet Europe's carbon reduction goals would dwarf existing production levels of this scarce, mined resource. Such resource demands are amplified given the fact that China currently controls 70 percent of the world's lithium-ion battery production.³⁴ Ensuring security of lithium supply and battery production will be critical in any plan relying on massive vehicle electrification.

Resource needs for mass electrification extend to essentially all the minerals needed for EV batteries. London Natural Museum Earth Sciences Head Professor Richard Herrington conducted an analysis of mineral resources needed to meet the United Kingdom's plan for complete vehicle electrification by 2050. His letter to the British government noted that, "...to meet UK electric car targets for 2050 we would need to produce just under two times the current total annual world cobalt production, nearly the entire world production of neodymium, three quarters the world's lithium production and at least half of the world's copper production."³⁵ As one commentator said about this letter, "And remember, that's just for the U.K.!"³⁶

About as many new vehicles are sold in California each year as in the UK.^{37 38} Given these realities, it is obvious that if just the UK and California move forward with EV mandates, the previously mentioned resource needs could double. It is evident that were the 15 states abiding by California's preexisting ZEV standards to adopt the ACCII ICE bans, the world may currently lack sufficient supply of *all* the minerals needed for electric vehicle batteries, requiring a massive

³² Nikolewski, Rob. "Electric vehicles' future relies on cobalt. It's often mined by children and is soaring in price." *The Los Angeles Times*. February 22, 2018. Available at: <https://www.latimes.com/business/la-fi-electric-car-cobalt-battery-20180222-story.html>

³³ Powell, Nick, et. al. "Impact Analysis of Mass EV Adoption and Low Carbon Intensity Fuels Scenarios – Summary Report." Ricardo. August 24, 2018. Available at: <https://www.fuelseurope.eu/wp-content/uploads/Summary-Report-Mass-EV-and-Low-Carbon-Fuels-Scenarios-1.pdf>

³⁴ <https://www.wsj.com/articles/u-s-mounts-a-charge-to-take-on-china-the-king-of-electric-vehicle-batteries-11611658235?page=1>

³⁵ <https://www.nhm.ac.uk/press-office/press-releases/leading-scientists-set-out-resource-challenge-of-meeting-net-zero.html>

³⁶

<https://www.realcleanenergy.org/articles/2020/11/29/five-reasons-why-internal-combustion-engines-are-here-to-stay-651051.html>

³⁷ <https://www.cncda.org/news/cncda-responds-to-governor-newsoms-executive-order-to-ban-the-sale-of-new-gasoline-powered-vehicles-by-2035/>

³⁸ <https://www.statista.com/topics/1982/the-uk-automotive-industry/>

expansion of mining on an unprecedented global scale and significantly impacting the health of the environment and ecological systems throughout the world.

Mandating massive amounts of electric vehicles prior to addressing the significant mineral and humanitarian concerns associated with their production will leave that state and nation totally reliant on China and other potentially unstable regions to supply electric vehicle batteries and battery materials. Another supply chain crisis or tariff trade war will dramatically affect all EV owners and car dealers. In addition, Delaware has no plan in place to address disposal of the EV batteries after they reach their life span of eight years and they are not recyclable.

V. DNREC should recognize the economic and environmental benefits of petroleum transportation fuels, while also acknowledging there are better ways to advance emission reductions.

- A. *DNREC needs to recognize that petroleum products make modern life possible and are currently the most efficient and reliable forms of transportation fuel.*

The cleanest, most reliable and most affordable transportation fuels will continue to come from petroleum-based gasoline and diesel for the foreseeable future. No other form of energy carries the same bang for the buck. Managing future emissions will necessitate continuing to use petroleum based fuels more efficiently; particularly since affordable energy is essential to continued economic growth and prosperity. In discussing the benefits of petroleum fuels over other sources, EIA notes:

Energy density and the cost, weight, and size of onboard energy storage are important characteristics of fuels for transportation. Fuels that require large, heavy, or expensive storage can reduce the space available to convey people and freight, weigh down a vehicle (making it operate less efficiently), or make it too costly to operate, even after taking account of cheaper fuels. Compared to gasoline and diesel, other options may have more energy per unit weight, but none have more energy per unit volume.³⁹

Domestic refiners are making the cleanest transportation fuels in the world at costs affordable for Americans across the economic spectrum. Americans also continue to use these fuels more efficiently, in a manner that ensures continued health while advancing potential for upward economic mobility.

Reducing domestic refining increases the amount of imported fuel from regions of the world that may not adhere to U.S. environmental standards. Additionally, since refining petroleum for the petrochemicals needed for everyday products like contact lenses, glasses, sneakers, appliances, solar panels, and wind turbines – in addition to transportation fuels – will continue to be a necessity, policies that could dramatically reduce or eliminate domestic refining are actually environmentally irresponsible.

³⁹ EIA. "Today In Energy." February 14, 2013. Available at: <https://www.eia.gov/todayinenergy/detail.php?id=9991>

B. DNREC should also recognize that greater emission reductions will be achieved over the long term through research & development (R&D) initiatives aimed at making alternative energy as cost effective as traditional fuels, while providing well-crafted incentives that enable traditional fuel manufacturers to play a critical role in the energy transition.

A true transition to a more diverse energy mix can only occur when alternatives are cheaper than the energy we need today. The world is decades away from such a goal. However, a focus on R&D and appropriately aligned incentives to effectively jumpstart new industries will provide more opportunities to lower emissions faster than poorly crafted mandates.

PBF Energy is currently leveraging its expertise in fuels to invest in a more diverse transportation energy future. The company is actively investing in and exploring new investment opportunities in alternative transportation energy in excess of billions of dollars.

The Company is spending \$600 million to transform an idled refinery unit at its Chalmette, Louisiana, refinery into a renewable diesel manufacturing plant. This unit will be additive to our existing refinery, rather than acting as a replacement for it, as has been the case in California due to the state's poorly crafted policies. Recently completed, the Chalmette Renewable Diesel Unit (RDU) will soon produce 20,000 barrels per day – or 300 million gallons per year - of low carbon renewable diesel fuel. Renewable diesel is a “drop in” fuel that is chemically indistinguishable from petroleum diesel and, as such, can be used in all existing transportation diesel fuel engines and infrastructure, while also greatly reducing emissions. A pretreatment unit (PTU) being built as part of the project will allow the Chalmette RDU to process a wide variety of low carbon feedstocks.

Additionally, PBF has publicly announced its plans to explore building a clean hydrogen and logistics hub adjacent to its Delaware City plant, supporting the community, state and region. The project seeks to use existing low or zero carbon electricity, coupled with renewable power slated to come online in the near future in addition to building onsite renewable resources to fuel electrolyzers that will produce 55,000 metric tons of zero emitting green hydrogen. This amount of hydrogen is enough to power 12,500 medium duty trucks, which is the average size of a major shipping company distribution center. Combined with the various elements of a potential hydrogen economy already in the state, as well as Delaware's world class colleges and universities, it holds the promise to potentially create a transformative new zero emission energy economy.

Newly adopted federal policies like the recently enacted Bipartisan Infrastructure Law (BIL) and the Inflation Reduction Act (IRA), which contain historic investments in new energy technologies and job creation, offering tax incentives to advance a more diverse energy economy, greatly enable PBF's ability to venture down this new path. However, the Company's ability to leverage these initiatives in a manner that ensures the success of its alternative energy investments over the long term will require policies that ensure the success of its existing refining business as the nation transitions into its energy future. As previously discussed, widespread adoption of ill-crafted automobile bans could put all these investments at risk.

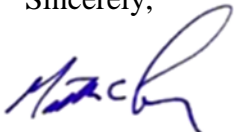
VI. The Regulatory Flexibility Analysis (RFA) and Impact Statement Form is Flawed

- A. *DNREC fails to recognize that that the Delaware Low Emission Vehicle Program affects consumers.*

On page 2 of the RFA, DNREC is exempting the completion of the RFA and Impact Statement due to the nature of the proposed regulation and specifies that the reason for the exemption is that the proposed regulation is not substantially likely to propose costs or burdens on individuals and/or small businesses. Furthermore, DNREC states that the compliance obligation is not imposed on individuals and/or small businesses. This is a false assumption because in section 2.0 of Regulation 1140, it is stated that “no person shall... offer for sale, sell,...purchase, rent, acquire, receive or register...” vehicles that fail to comply with Regulation 1140. As stated, this is a ban that affects consumers, including individuals and small businesses, because it prohibits them from selling cars that they already own and limits the purchase to vehicles that comply with Regulation 1140 within the state of Delaware and prohibits registration of vehicles purchased outside of Delaware. Surveys indicate that the vast majority of consumers don’t want to purchase an electric vehicle. DNREC is imposing this regulation on consumers that are not supportive.

Thank you for the opportunity to comment on the state’s proposed ICE ban. DNREC and other policymakers must recognize there are many sides to this story that they need to consider before imposing significant new costs and mandates on consumers and/or fuel manufacturers in a way that could damage Delaware’s economy and the general welfare of its residents.

Sincerely,



Matthew Lucey
President