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Comments on 2022-R-A-0011: Low Emission Vehicle Program

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Comments:

This topic has caused me to take some time to give this due consideration. I like the IDEA of emission free vehicles, and the notion is seductive. What I have learned about seduction is that it tends to mask darker motives at worst, and neglect examination of unintended consequences at best. With this week's release of the EPA's mandates that are effective duplicates of the Delaware proposal, it has become obvious this has little to do with improving air quality. Implementing mandates via executive rulemaking at both the federal and state levels; rules that effectively transform multiple sectors of our economy from a market structure to a near-command structure is leads me suspect the former motive. Cost of ownership to date seems to indicate that EVs are less expensive when maintenance is included, however it does not account for the initial purchase cost which places these vehicles beyond the reach of most households. Applying a free market analysis to the current EV fleet using price as the demand constraint implies that if EVs were an affordable and practical alternative to the internal combustion engine (ICE), more than 6% of the country would already be driving these vehicles. Ninety-four percent of the country has exercised economic self-determination and has chosen to stick the ICE as the most cost-effective personal transportation option. The EV isn't "there" yet from a price standpoint or a production standpoint. Tesla can't yet produce an entry-level sedan to compete pricewise with the ICE. Ford and GM cannot produce enough EV pickups to meet the existing demand largely due to the chronic global microchip shortage which adds an additional layer of complexity to both the price and the supply components of the model. Mandating additional supply of an item that is unavailable to the consumer when production is currently below existing capacity due to a shortage of a single component defies common sense. That reliance on microchips, of which 92% of the global supply is made in Taiwan (<https://www.theatlantic.com/international/archive/2022/10/taiwan-microchip-supply-chain-china/671615/>) creates an existential vulnerability for all EV vehicles (and all automotive manufacture globally) if China is able to obtain a stranglehold on microchip production. That would suggest a necessary and logical first step would be to establish a reliable, secure, and significant source of domestic microchips with a reliable, secure, and significant supply of primary inputs to their manufacture scalable to meet any increase in the demand of EVs. To do otherwise makes any EV mandate fundamentally impossible. The current Toyota CEO Akio Toyoda has stated publicly that it will be extremely difficult for global auto manufacturers to meet the requirement for a fully EV fleet by 2035 as mandated by states including NY and CA due to logistics problems with mining, microchips, and production bottlenecks (<https://www.cnbc.com/2022/10/02/toyota-ceo-akio-toyoda-electric-vehicles-happy-dance.html>). Toyoda further indicated that demands for lithium, cobalt, and nickel will outpace the current logistics chain to provide these essential minerals, which places upward pressures on prices across the board. The ores are both energy (meaning hydrocarbon-based sources) intensive and difficult to extract, and then refine into usable materials (<https://www.instituteforenergyresearch.org/renewable/the-environmental-impact-of-lithium-batteries/>). Current supplies of these raw ores are limited and mostly controlled by non-domestic US sources, China included, making their availability vulnerable to a host of geo-political threats. Production facilities face the same challenges. They have not yet been built, and they will require massive investments of capital and significant lead time in order to ramp production to a point that enables doubling production of EVs, let alone supplant 30% ICE fleet produced annually. There is also doubt about whether enough of these rare earth materials exist in the earth's crust to replace the existing vehicle fleet, let alone provide a supply to meet the EV needs of future generations (<https://insideinvestor.com.au/there-isnt-enough-lithium-to-replace-all-fossil-fuel-cars/>). Disposing of the EVs

batteries creates a new hazardous waste problem. Lithium is obviously toxic and worse when combusted, which makes it both difficult and expensive to recycle. It is currently more cost effective to mine new lithium and manufacture new batteries than it is to recycle old batteries (<https://www.asme.org/topics-resources/content/innovation-needed-to-reclaim-lithium-from-old-batteries>), which is rapidly creating a brand new and costly hazardous waste disposal problem for which we are currently unprepared. The question of powering an expanding EV fleet is also in question. The existing power grid is under stress, as recent instances in CA, TX and the upper Midwest have shown very recently. California in particular is a case study in how to do everything possible wrong in managing the state's energy supply (<https://abcnews.go.com/US/california-blackouts-power-grid/story?id=89460998>). Removing cheap, reliable and mature forms of energy production from the grid by decommissioning power plants then replacing only a fraction of the power removed using nascent and unreliable power sources costing upwards of 10x multiplier per kWh generated is folly. The grid capacity does not exist currently exist to accommodate the increased demand that an EV mandate will require without the use of generation systems much more powerful than wind and solar, since the footprint for both is massive, and lacks any multiplier effect through scaling. There seems to be no taste for the construction of nuclear power plants which is what this type of power demand increase will require to have any chance of success. Regardless, following the CA model will create power generation shortages and result in circumstances where EVs cannot be charged due to power outages, brownouts, and rolling blackouts. Power generation capacity must be created first for the EV fleet to run at all. Based on CA model, the more that hydrocarbon based fuels are replaced by renewables, the less stable and reliable the grid becomes (<https://www.forbes.com/sites/davidblackmon/2023/01/01/8-consequential-energy-predictions-for-2023/?sh=243d593371ef>) The logistics chain will also be negatively impacted by a premature push to all EVs. EVs are best suited to passenger cars in urban environments where short distances are typically driven and there are breaks in time driven allowing the vehicle charge to be topped off at a charging station. Time is money in the trucking industry. The limited range of EVs trucks means that goods will immediately experience delays as trucks remain idle for hours charging where previously they were able to "gas and go" after a brief stop at a fueling station. Factoring the 3x+ multiplier for purchase of a long-haul EV truck over a diesel truck, this places the price of entry for the "owner-operator" at a prohibitive point where the nation is still experiencing shortages in truck drivers. Effectively an additional barrier to entry for the small business owner will be created in the trucking industry creating a disparate impact that benefits the large corporation at the expense of the small business. The net effect will be price increases for all existing shipping providers regardless of efforts at changeover to EV vehicles. All small businesses will be affected as we saw under the recent logistics chain crisis that caused logistics providers to favor large corporate clients over small clients of all types. The small business owner has been put through enough over the last three year. It is time to stop creating barriers to their success. Expert logistics providers Amazon, UPS, USPS, etc., have all set targets to reduce carbon emissions to net zero by 2050, not 2035. These providers understand their businesses and the practical realities of moving to an EV fleet with realistic timetables. It is unfathomable that policymakers would second guess those who are the actual experts in the field. This mandate will also affect passenger transportation since the range of EV passenger cars is still inadequate to replace the utility of the ICE vehicle with "gas and go" capability. Travel on the interstate system is designed to allow the recreational driver the ability to travel long distances based on the individual driver's time needs. The "gas and go" at rest stops becomes impractical due to the length of charge time required. As a resident of an area of the Delaware Beaches, I have had opportunity to speak with a number of visitors to our resort towns who have driven new EVs from New York and upstate New Jersey. Anecdotally speaking, it took these visitors 2 to 3 times the amount of time to drive here using an EV due to the multiple, lengthy stops they need to make to recharge their vehicles. None were happy about the extra time, and several questioned the wisdom of converting to EVs by the time they had arrived. This is a very real consequence of the transition from ICE to EV that many drivers simply do not consider when making a purchase decision. Over the road capability of the EV is still decidedly inferior to the ICE, especially in times of the unavailability of power during a natural disaster or outage do to other inclement weather. Response teams needs a portable source of fuel to move relief supplies and response teams which the EV is simply incapable of doing in the event of a protracted power outage. Think Hurricane Katrina. Our natural disasters of choice here in Delaware are hurricanes and northeasters which produce coastal flooding on a regular basis. An added hazard to EVs is the inundation of the battery compartment with salt water through spray or flooding. Typically produces very poor results for the vehicle if the sealed battery compartment of the EV is compromised in any way. This speaks to the larger problem of EV use is rural settings where there are no recharging stations available. We still have large areas of Sussex County, DE that still do not have Wi-Fi service AT ALL, let alone 5G. Both cellular infrastructure and wireless infrastructure are mature technologies following massive proliferation in the early 2000s, yet deployment of these technologies is still sporadic

in areas with lower population concentrations. This problem becomes much more pronounced as population density decreases in rural areas away from the US coastline. It gives reason to consider whether those proposing the EV mandate have taken time to consider the implications that will result from replacing a proven, reliable, and mature technology able to transport passengers and cargo across long distances without interruption in favor of an immature, impractical, and infrastructurally unsupported technology proven to be inferior in performance while costing more than its predecessor. EVs are not currently suited for the task of long-distance interstate travel, and will not be for quite some time. What is more troubling is that consumer preference is already driving a market-based solution to EVs, and auto manufacturers are already responding with a market-based solution. Ford has invested \$50 billion in their Model e unit, (<https://www.reuters.com/business/autos-transportation/ford-run-ev-ice-businesses-separately-2022-03-02/>) and Toyota is investing \$28 billion by 2030 (<https://www.cnbc.com/2022/09/13/why-toyota-the-worlds-largest-automaker-isnt-all-in-on-evs.html>). Tesla continues to innovate with trucking solutions that provide a viable and cost competitive semi-truck for local route delivery that competes with current EV offerings by major truck manufacturers Volvo and Peterbilt (<https://www.motortrend.com/reviews/tesla-semi-interior-review/>). Why mandate something on an escalated and unrealistic timetable something that is already occurring organically? If vehicle manufacturers are already responding and have produced viable products in response to market forces without regulatory mandate, why therefore is Delaware DNREC, the State of Delaware, and the EPA so insistent on pushing a solution to a perceived problem that is already being addressed through free market innovation? The automotive industry and major corporate providers with large vehicle fleets have already set target dates of 2040 to 2050 to have EV replacement for their gasoline and diesel vehicle fleets. Why does this need to be done in a manner that is guaranteed to cost more, produce inferior results, and cause economic hardship for Delawareans since the technology and the necessary supporting industries simply don't exist yet? Currently, 11.6% of Delawareans live in poverty (<https://www.census.gov/quickfacts/fact/table/DE>). Poor economic conditions nationally mean that 58% of the households in this country are living paycheck-to-paycheck, savings have been depleted, and household credit card debt is increasing (and will require repayment at higher interest rates due to Fed rates increases) as households can't afford the basic necessities of daily living (<https://www.cnbc.com/2023/04/11/58percent-of-americans-are-living-paycheck-to-paycheck-cnbc-survey-reveals.html>). At a point in time where Americans are stressed financially, and with a recession being predicted for later in 2023 (<https://markets.businessinsider.com/news/stocks/fed-economists-mild-recession-outlook-forecast-economy-recovery-banking-crisis-2023-4?op=1>), why are new rules being promulgated that will have the net effect of increasing costs for today's families, and reducing the standard of living for the average family through structural price increases in the cost of vehicle price, energy production, and supply transportation? We will defer discussing tax increases because there are always tax increases associated with these types of mandates, and I haven't done enough research on those yet to speak in an educated fashion. A new cost that will probably manifest is an increase in insurance rates for drivers since insurance companies are very concerned about the structural integrity of the EVs battery compartment in the event of a minor accident and are inclined to total cars with only minor damage due to the cost of replacing the battery pack (<https://www.reuters.com/business/autos-transportation/scratched-ev-battery-your-insurer-may-have-junk-whole-car-2023-03-20/>). This emergent consideration eradicates any environmental benefit if a low-mileage EV is involved in even a minor accident due to massive energy investment in the production of the battery pack. Emergency first responders are also faced with a new challenge when responding to incidents with EVs. The heat of the fire and the nature of the fire makes traditional fire fighting methods ineffective, and in some cases exacerbates the danger (<https://www.caranddriver.com/news/a34335268/electric-car-fire-preparedness-ntsb-report/>). New techniques, protocols, and extinguisher systems are being developed to deal with the additional hazards, but have not been universally disseminated at a cost to the taxpayer in the form of training and equipment acquisition. There are a host of unintended financial and economic consequences implicit in these mandates. The question remains whether these have been fully considered by those promoting the EV mandate. If they have been considered, and the decision to move forward in spite of the prohibitive level of deficiencies in the supporting industries necessary to support the EV, then the assessment becomes something more objectionable. This moves the discussion from insufficient due diligence to intentional infliction of economic hardship on the citizens of the State of Delaware. Intentionally creating economic inefficiencies through the regulatory process whereby a more expensive and qualitatively inferior product is forced upon the marketplace as a compulsory purchase with no alternatives can be seen as nothing other than economic malfeasance. From this perspective, these rules remove competition from the marketplace effectively establishing a product monopoly via governmental decree that results in nationalizing the auto industry if adopted on a national basis. By extension the power generation industry, the microchip manufacturing industry, and the logistics industry by proxy are also nationalized on a de facto basis. This premise is supported by the exclusive focus on EVS

without carve out space for low or zero-emission EV alternatives including the hydrogen fuel cell. Toyota, BMW, Hyundai, and Honda all have, or will be introducing, hydrogen fuel cell vehicles in the next several model years and are expected to be followed in the next two years by most major manufacturers. The State of Delaware and the EPA seem to have already chosen the “winner” in the low and zero emissions vehicle space to the exclusion of any technology except the EV. In a free enterprise system embracing democracy, governments do not pick the winners. This defies all free-market principles, and is exemplary of the dictates typical of communist states using centrally planned economies. There is nothing democratic about these types of systems. Nor is there anything democratic about a state agency deliberately creating economic hardship for the people of the State of Delaware. It is additionally troublesome that these rules are being promulgated in a fashion that directly and intentionally circumvents the legislative process where the people of the State of Delaware are unable to hold their legislators accountable through the electoral process. These rules will fundamentally alter the economics of the State of Delaware, and are being promulgated by appointed officials largely invisible to public scrutiny and accountable to no one except through the partisan favor of the Governor smacks of pure totalitarianism. The level of personal autonomy that this set of regulations requires that individual citizens cede to governmental authority is staggering. It is unarguably a major restriction of individual economic freedom, and has the potential for greater abuse through the addition of civil and criminal penalties for non-compliance. If we have learned nothing from recent history, it is that government will abuse its power at the expense of the citizenry if given the opportunity to do so. This creates just such an opportunity and is an economic disaster in the making, There are other, better ways to achieve the stated goal. Let the free market work. It is already creating the solution, and consumer choice is driving that solution. The timetable proposed by DNREC is unrealistic and will be an economic disaster if implemented. A working solution that addresses the issues previously identified, as well as identification of other steps that must be taken to make this an economic win for Delaware needs to take place. This needs to include the democratic process where elected representatives debate the issues exhaustively with transparency and with extensive stakeholder involvement. This is the democratic process. Circumventing this process means that these rules are deliberately meant to disenfranchise Delawareans, create a centrally planned and controlled economy that deprives people of economic self-determination, disparately impacts low-income Delawareans, and reduces the standard of living for all Delawareans for the next several generations. Regardless of whether the reality of the EV mandate is the aforementioned darker motive, or a simple failure to fully consider the unintended consequence, the EV mandate is a singularly bad idea for Delaware and bad idea for the United States. There is no form of seduction that produces positive consequences. The proposed EV mandates from DNREC and EPA are not exceptions. Dr. Jeffrey D, Bunting 34459 Deer Court Dagsboro, DE 19939