Lynne Cayting
17 State House Station
Augusta, ME 04333-0017

Public hearing: August 17, 2023, 9:00 a.m.
Augusta Civic Center, 76 Community Drive
Augusta, ME 04330

Comment deadline: August 28, 2023, 5:00 PM

Kevin A. King

27 River Road

Windham, Maine 04062

August 28, 2023

PUBLIC COMMENT

REFERENCE: Adoption of California-style EV Mandates.

THE BILL MAY BE: §585-D. New motor vehicle emission standards Subject to the provisions of this section, the board may adopt and enforce standards that meet the requirements of the federal Clean Air Act, Section 177, 42 United States Code, Section 7507 relating to control of emissions from new motor vehicles or new motor vehicle engines. These standards, known as a "low-emission vehicle program," must be designed to prevent air pollution and achieve and maintain ambient air quality standards within the State. [PL 2005, c. 245, §1 (AMD).

While I strongly agree that there is a place for Electric Vehicles in the Maine Automotive Structure, I strongly disagree with any bill that mandates their use. Maine's overall contribution to World Pollution, when you consider our forests, is almost non-existent. The goal to reduce all Greenhouse Gases is admirable, but the very geography that benefits the environment also makes the adoption of the proposed standards difficult.

My Reasons are as follows:

1. I believe in Toyota's 1:6:90 Rule (Case for Hybrid) as well as Toyota's focus on the Hydrogen Combustion Fuel Engine with 0% Emissions. The Proposal would eliminate a Hydrogen based combustion engine, likely the real long-term solution to replace fossil fuels.
2. Electric Vehicle's energy source remains 80% Carbon Fuels moving a diverse energy market to a centralized system, requiring huge investments in Utility Transmission and Electricity Fossil Fuel Production.
3. Electric Vehicles will require a huge investment in Charging Stations throughout a geographically enormous State.
4. The Precious Metals needed to build an electric battery in sufficient quantities requires substantial mining and possible damage to the Environment. In Maine Iridium Mining is banned even though we have this mineral in `Maine forcing the use of Third World Mining in terrible mining conditions.
5. Solar Based Electric Infrastructure is not reliable or cost effective in Maine where forests must be demolished to put up sufficient solar panels for the needs of 100% electrical production.
6. Solar Panels Projects in Maine are subsidized by higher electric rates thereby driving up the costs of electric vehicles and reducing Maine disposable income.
7. Hybrid Vehicles give balance to the goal between cost and results. In a disaster, the Hybrid Car could support minimal electric needs in a disaster.
8. The real cost of EV's are not publicly known as the assumption that the electricity needs of an EV have 0% fossil fuel impact is incorrect.
9. The electricity needed for Maine EV system will rely on Solar and Wind, but mostly New Nuclear infrastructure. The previous Nuclear Infrastructure was dismantled in Maine once before. Any EV mandate MUST be tied to New Nuclear development.
10. Any collapse in the Maine Electric Grid, even temporary (Ice Store of 1998) would be a disaster for Maine's citizen's. It forces Maine residents into home generators, at far greater pollution.

In Summary: The question of Carbon Fuels and Emissions is a complicated issue. Like the Florescent Lightbulb, initially mandated to replace incandescent light bulbs, it ignored future competing technologies like the LED lightbulb as a possible solution as well as the effect that Mercury might have in the environment. That adoption has placed millions of mercury lightbulbs in landfills creating a new environmental nightmare. I think awareness of what each person can do to reduce our own greenhouse footprint would have a much greater effect. The use of Gas/Electric Hybrids is thew future over the next 20-30 years.

In the case of EV's, infrastructure, affordability, and critical mineral supply need to catch up to the ambitions that many environmentalists aspire in looking to de-carbonize the Country.

Respectfully submitted,

Kevin A. King

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Toyota's 1:6:90 Rule (Case for Hybrid): The cost of one long-range battery electric vehicle could instead be used to male 6 plug-in hybrids or 90 hybrid vehicles. The overall carbon reduction of those 90 hybrid vehicles over their lifetimes is 37 times greater than a single battery electric vehicle.

Toyota's 1:6:90 Rule – The Case for Hybrids

Spencer HeyJune 7, 2023

Courtesy of Toyota

Nothing beats sending someone a private message, only to have them immediately take a screenshot and send it to someone else.

Corporate leak: Toyota recently issued a summary of its electric vehicle production and sales strategy to its dealerships, providing insight into Toyota's decision to focus more on hybrids than full EVs. Like any good confidential internal document, it was promptly leaked to the public over Twitter.

Toyota intends to focus on hybrids instead of EVs because of three major barriers to EV adoption

1. Critical mineral supply: According to Benchmark Minerals, over 300 new mines are required to support battery demand by 2035. While U.S. battery manufacturing capacity is taking off, Toyota doesn't think raw mineral supply will be able to keep up, leading to shortages and higher costs.

- Other automakers are even taking the unprecedented step to partner and invest in the mining sector to secure their own mineral supply.

2. Charging infrastructure: Public chargers have started to gain a reputation for being unreliable. Nothing ruins a family road trip faster than pulling up to a slow or broken EV charger. (No kids, we're not there yet, and now we're staying at this truck-stop motel for the night…)

- Infrastructure also lacks standardization which can limit access and reduce charging speeds—just ask anyone driving around their EV with charging adapters like they're the Key Maker from the Matrix.

3. Affordability. Even without the cost of installing a home charger, electric vehicles have historically been more expensive than their combustion engine counterparts.

- While this is typically still true, government subsidies and Tesla's price cuts are actively trying to change this.

Typical battery electric vehicle supply chain lead times

years

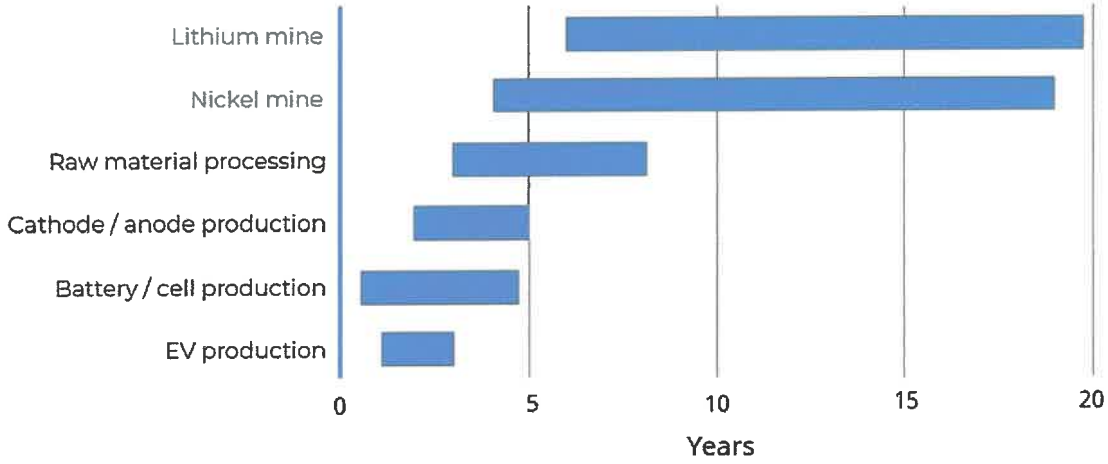


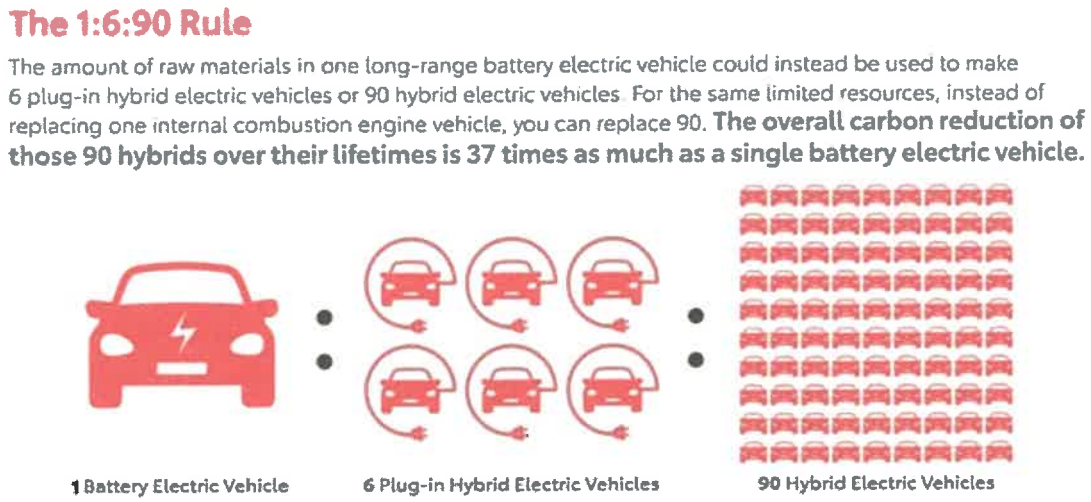
Chart courtesy of Toyota; data courtesy of IEA, Benchmark Mineral Intelligence, and S&P Global

Toyota has a goal to "reduce carbon emissions as much as possible, as soon as possible" including a 35 percent reduction in emissions from their vehicles by 2030, and a 90 percent reduction in emissions from their entire fleet by 2050.

Toyota's solution: the 1:6:90 rule

In the face of critical mineral supply shortages and other challenges, the Japanese automaker believes that hybrids, not electric vehicles, are the answer.

They crunched the numbers like they're Sheldon Copper and found that using the same amount of critical minerals needed to make a single full-electric vehicle could instead be used to make 6 plug-in hybrids or 90 non-plug-in hybrids.



Courtesy of Twitter

The punchline: In their view, not only does this help more people drive lower-emission vehicles, Toyota believes that the overall carbon reduction of 90 hybrids over their lifetime is 37 times *greater* than a single-battery electric vehicle.

As far as Toyota is concerned, having 90 people take a small step into a hybrid seems better than having one person take a giant leap into an EV. The transition then, is not the sum of a few grand acts but the collection of small changes made by everyone.

The big picture: In the case of EVs, infrastructure, affordability, and critical mineral supply chains need to catch up to the ambitions that many

governments that are looking to decarbonize the transportation sector, and it might be a long and bumpy road to get there.

Japan historically has lacked natural resoruces and so looks to pragmatic solutions to thrive. They may be a microcosm of the EV build out in the coming decades.