Jack Lifton Debunks Market Myth: Lower EV Demand Doesn’t Correlate with Permanent Magnet Demand

written by Jack Lifton | May 21, 2024

The non-Chinese OEM automotive industry seems to have learned a lesson from the marketplace that has eluded Washington, Ottawa, and Brussels. Unfortunately for the non-Chinese rare earth permanent magnet industry, the so-called “sector covering journalists” have also missed the point.

The rare earth permanent magnet motor is also the motor of choice, based on efficiency and weight, of the non-Chinese OEM automotive industry for hybrid power trains.

The trend in non-Chinese OEM automotive has switched from replacing all internal combustion engines (ICEs) with EVs to a mix of EVs, hybrids, and ICEs. Some large non-Chinese OEMs, such as Toyota, the world’s largest OEM automotive company, made this choice from the first day of the policy-driven push to “electrify” the industry’s products. Now, as the market results have replaced the policy-driven hopes, the OEMs are rushing in to declare their apostasy. We were wrong, they cry, hybrid power trains are the most efficient users of both fossil and alternate energy (electricity from non-carbon sources) fuels. Thus, hybrids will give our fuel supplies a longer life.

Toyota has predicted a future where its production will be one-third EVs, one-third hybrids, and one-third ICEs. If this prescription were followed by the others then ultimately two thirds of the non-Chinese world’s auto production would be best

served by rare earth permanent magnet motors. This means that the demand for those magnets will now increase faster than we thought.

The current U.S. tariff policy means that if American companies wish to continue to make EVs or hybrids without Chinese magnets, then they have an existential problem.

Chinese export restrictions on rare earth permanent magnet technologies, now in place, plus the effect that the new U.S. tariffs may have on the importing of Chinese automotive products present a genuinely existential threat to the domestic US automotive industry and its supply base for electric motors.

Only the U.S. Department of Defense seems to have recognized this. It has “invested” not only in rare earth separation, but also in the domestic production of rare earth permanent magnets from domestic materials for its own needs. However this “supply chain deficit awareness” is not universal in the governments of the West.

Only one U.S. mine is producing rare earths. There are only two disclosed operational rare earth separation plants in the US (China has 100s!). There are no commercial rare earth metal or alloy plants in the U.S. And the only credible magnet plant under construction in the USA is dedicated to supplyinhg the US military if and only if it can get domestic or friendly nation supplies of rare earths that can then be processed into rare earth permanent magnet alloys in the U.S.

We need to know exactly who is doing what and at what level they are doing it to create a domestic American rare earth permanent magnet supply chain.

The future of the domestic American OEM automotive industry really depends on this.