Motor & Equipment Manufacturers Association

Comments to

U.S. Department of Energy
Office of Energy Efficiency and Renewable Energy

RE: Risks in the High-Capacity Batteries, Including Electric Vehicle Batteries Supply Chain

RFI No. DE-FOA-0002502; via email VTO@ee.doe.gov

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The Motor & Equipment Manufacturers Association (MEMA) submits the following comments regarding the U.S. Department of Energy Office of Energy Efficiency and Renewable Energy's Notice and Request for Information on the Risks in the High-Capacity Batteries, including Electric Vehicle Batteries Supply Chain.[1]

Introduction

MEMA represents more than 1,000 companies that manufacture original equipment (OE) and aftermarket motor vehicle parts, components, systems, and materials for use in passenger vehicles and commercial trucks.[2] U.S. motor vehicle parts manufacturers provide more than 907,000 direct jobs, making it the nation's largest employer of manufacturing jobs with a presence in all 50 states. Direct, indirect, and induced vehicle supplier employment accounts for over 4.8 million U.S. jobs. Moreover, vehicle suppliers contribute 2.5 percent of U.S. GDP. The average U.S. wage for direct vehicle supplier jobs reached $80,300 – exceeding the average of all U.S. manufacturing sectors.[3]

Across the entire range of new vehicle innovation – from automated to zero-emission technologies – vehicle suppliers are leading the way. Vehicle suppliers conceive, design, and manufacture the OE components and technologies that make up two-thirds of the value in every vehicle, including fuel efficiency, emissions, and electric vehicle components. Additionally, vehicle suppliers also manufacture aftermarket parts and materials for the maintenance and repair of 290 million vehicles on the road.

Impacts of Current High-Capacity Battery Supply Chains on U.S. Vehicle Parts Manufacturers

MEMA is committed to working with the President to achieve a net-zero carbon transportation future for all Americans. This future includes a shift to electric-drive vehicles. To achieve this goal, the U.S. must act now to address the demand for advanced high-capacity batteries.

MEMA urges the administration to consider three fundamental objectives in addressing this challenge. First, the U.S. must increase its domestic production of electric vehicles (EVs) and

[1] 86 Fed. Reg. at 16343.

[2] MEMA represents its member companies through its four divisions: Automotive Aftermarket Suppliers Association (AASA); Heavy Duty Manufacturers Association (HDMA); MERA - The Association for Sustainable Manufacturing; and Original Equipment Suppliers Association (OESA).

[3] U.S. Labor and Economic Impact of Vehicle Supplier Industry, MEMA and IHS Markit. February 2021.

batteries. In 2020, 1.4 million EVs were sold in Europe and 1.3 million EVs were sold in China.[4] U.S. sales represented a fraction of our largest competitors with about 328,000 EVs sold.[5] Furthermore, there are 93 giga factories to manufacture lithium-ion batteries in China, compared with four in the United States.[6] MEMA is grateful that the construction of the new Georgia battery plant and a recent settlement of a U.S. ITC trade case will increase domestic supply.[7] However, this overall disparity of EV and battery manufacturing plants will hamper further development and sales of EVs in the U.S.

Second, this country must act to compete with China. While China is an important trading partner for the U.S., it remains a competitor for innovative technology development. In recent years, the Chinese government has announced several policies designed to promote the development and localization of strategic industries including the "Made in China 2025" initiative that identifies "new energy vehicles" (NEVs) as one of ten priority sectors.

As part of this initiative, China set a target to sell 35 million vehicles annually by 2025, with a further objective that at least one-fifth of them be classified as NEVs. The plan has a domestic content goal of 70 percent by 2020 and 80 percent by 2025. This initiative is focused on increasing Chinese innovation and providing government assistance to Chinese industries to take investment from other regions. China began implementing this aggressive new energy vehicle policy in 2015. However, the goal should not be to decrease operations in China, but to expand the demand for EVs and the supply chain to support these vehicles in the United States.

Finally, the U.S. must invest in research and development, capital investment, retooling, workforce training, infrastructure, and consumer incentives to meet the goal of a net-zero carbon transportation future. In a March 29, letter to President Biden, MEMA joined the Alliance for Automotive Innovation and the UAW to lay out specifics that must be addressed to achieve this goal.[8] The industry noted that the U.S. is at a critical juncture stating:

> "*For the U.S. to be a leader in this transformation, we must work collaboratively to develop a comprehensive national vision and strategy. This is not just about the future of the auto industry in the U.S., it is about the nation's global competitiveness, economic security, and the transition of the U.S. workforce. Nations that lead the development and adoption of innovative technologies will also shape supply chains and job creation, define global standards and, potentially, reshape the international marketplace. However, neither the current trajectory of consumer adoption of EVs, nor existing levels of federal support for supply- and demand-side policies, is sufficient to meet our goal of a net-zero carbon transportation future*."[9]

For the U.S. to be a leader, the letter proposed key strategies for the following areas:

- Consumers – Affordability and Awareness
- Charging and Refueling Infrastructure
- Innovation, Manufacturing and Supply Chain

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[4] "Global Plug-in Vehicle Sales Reached over 3,2 Million in 2020," by Roland Irle, EV-volumes.com,
[5] "2020 US Electric Vehicle Sales Report," by Zachary Shahan, CleanTechnica, Feb. 8, 2021.
[6] "Biden wants to create millions of clean-energy jobs. China and Europe are way ahead of him," by Jeanne Whalen, *The Washington Post*, Feb. 11, 2021.
[7] "South Korean battery makers reach last-minute settlement," by Steven Mufson, *The Washington Post*, Apr. 11, 2021.
[8] Joint Vehicle Industry Letter to President Biden re: Working Towards a Net-Zero Carbon Transportation Future, from the Alliance for Automotive Innovation, MEMA, and UAW, March 29, 2021.
[9] *Ibid*, page 1

The joint industry letter noted that U.S. vehicle manufacturers and suppliers have made and are continuing to make significant domestic investments. Nevertheless, it is imperative that the U.S. have "a comprehensive plan that takes the present market realities into consideration, as well as the on-going investment and innovation in internal combustion engine (ICE) technologies."[10] The letter closed by urging policymakers to "think big" and work collaboratively with all stakeholders to develop a coherent national approach.

MEMA Responses to Particular Elements of the DOE-EERE Notice and RFI

(i) Critical materials including battery grade nickel, cobalt and lithium, underlying the supply chain for high-capacity batteries, including electric vehicle batteries.

Other critical minerals important in battery manufacturing are aluminum and copper. Each of these are critical materials for high-capacity battery production that should be some combination of increased U.S. production and increased production from allies. The goal here is gradual localization, where possible.

(iii) The availability of the key skill sets and personnel necessary to sustain a competitive U.S. high-capacity batteries ecosystem, including the domestic education and manufacturing workforce skills needed for high-capacity battery manufacturing; the skills gaps therein, and any opportunities to meet future workforce needs.

Motor vehicle parts suppliers rely on a strong technical workforce, particularly in the wake of the transformation of vehicle technology and mobility. For the vehicle supplier industry to continue to innovate and remain competitive, companies need the right workers with the right skills at the right time. Workforce development and training is a necessary tool to provide workers the right skills to satisfy employment needs. The hiring and retention of skilled workers is a key challenge. Over the next decade, nearly 3.5 million manufacturing jobs likely need to be filled. The skills gap is expected to result in 2 million of those jobs going unfilled.

The motor vehicle parts sector has a current skills gap and workforce shortage that keeps thousands of available positions unfilled. Broad application of federal, state, and local worker training and skills development is important to combat the current situation and longer-term challenges. The additional $100 billion in worker training funding proposed as part of the American Jobs Act by President Biden will be extremely helpful on this issue.

The industry's workforce needs are evolving with the push to vehicle electrification and automation. In response to these changing needs, worker training programs must advance to continue providing U.S. workers with the necessary skills to manufacture and maintain new technologies. The industry will require a diverse workforce with occupations across many industries with varying levels of education, training, and experience. Most of these occupations will require specialized training or work experience.

Skills necessary for EV and advanced high-capacity battery development and production in our sector include, but are not limited to, the following: mining then refining materials; active materials production; cell production; module and pack production; automation enhancements; inserting cells and testing units; and, high-voltage production training.

The U.S. also needs additional engineer capability and incentives for engineering and technology graduates from universities. Our nation needs to engage with federal agencies to upgrade training opportunities for our current workforce and restore key college visa and H1B and L visa capacity

[10] *Ibid*, page 1

after college. The Trump Administration suspension of these visas expired on March 31, 2021. Now quotas must be gradually expanded, and red tape streamlined to make progress in this key area of U.S. competitiveness for our sector and more broadly.

(iv) Risks or contingencies that may disrupt the high-capacity batteries supply chain (including defense, intelligence, cyber, homeland security, health, climate, environmental, natural, market, economic, geopolitical, human-rights or forced labor risks).

The U.S. vehicle industry relies on both its global suppliers and its local domestic component manufacturers to be viable with as little disruption and as much predictability as possible. The vehicle supply chain, their customers, and the jobs they support are highly interdependent. Even small changes to the supply chain can generate big consequences. Recent examples of broad risks to the supply chain include the March fire at the Renesas motor vehicle semiconductor plant in Japan, which had been expanding automotive chip production, the Texas winter storms resulting in widespread power outages impacting Infineon and NSP semiconductor fabs as well as various motor vehicle grade resin and foam facilities, and the broader woes of West Coast port slowdowns and the recent Suez Canal blockage.

Additional battery production in the U.S. will create more flexibility to adjust to national security tensions, overall trade disruptions, and natural disasters. A strong USMCA-based North American regional supply chain will allow for more advanced and strategically import components to be sourced from the U.S. and Canada, while more commodity level components can be sourced from Mexico.

(v) The resilience and capacity of the high-capacity battery supply chain to support national and economic security and emergency preparedness …

Advanced batteries will be needed in increased numbers as the military moves more toward EVs for Department of Defense (DoD) fleet vehicles as well as combat and land transportation vehicles. In addition to these direct DoD impacts, the broad jobs and industrial base impacts of the motor vehicle and parts sector, are both critical to our national security.

(vii) Policy recommendations or suggested executive, legislative, regulatory changes, or actions to ensure a resilient supply chain for high-capacity batteries (e.g., reshoring, nearshoring, or developing domestic suppliers, cooperation with allies to identify or develop alternative supply chains, building redundancy into supply chains, ways to address risks due to vulnerabilities in digital products or climate change).

As discussed above, MEMA supports a wide range of investments and incentives for EV and advanced battery production along the lines of what is proposed in the American Jobs Act. In addition, an extension of the current law providing full and immediate deductibility of R&D into 2022 and beyond is also critical to industry. Both are real additional incentives to increased domestic battery manufacturing as well as high-tech U.S. parts manufacturing.

(viii) Any additional comments relevant to the assessment of the high-capacity batteries manufacturing and advanced packing supply chains required by E.O. 14017

First and foremost, the U.S. battery policy objective should be to increase and diversify the supply of U.S. and global high-capacity advanced batteries. Increasing the size of the pie can benefit U.S. motor vehicles and parts manufacturers. Diversification means more opportunities to encourage more production of U.S. high-capacity advanced batteries, which also strengthens the North American region and enhances the USMCA.

Yet, we can never forget the edge that the creativity, ingenuity, and entrepreneurial spirit that is inherent in the U.S. technology and manufacturing sectors. Given that dynamic, the U.S. can regain a leadership role in lithium-ion and other advanced high-capacity battery production as well as a more robust domestic and allied nation supply chain.

Conclusion

MEMA is grateful that the Biden Administration initiating this investigation. MEMA urges the administration to provide incentives outlined above to expand U.S. competitiveness and industrial capability in advanced high-capacity batteries for EVs. Increasing and diversified supplies of advanced batteries and components in the U.S. and around the world are necessary and vital to U.S. motor vehicle parts manufacturers.

The U.S. needs to work with its allies, and even sometimes its adversaries, to make the progress needed to advance motor vehicle EV technologies and attain mutual goals of a net-zero carbon transportation future. MEMA reiterates that it is important to work on all aspects of the supply chain to enhance our mutual competitiveness. Only these efforts will ensure continued open markets and free trade.

MEMA appreciates the opportunity to provide the Department of Energy with these comments. For any additional information or questions, please contact Bill Frymoyer, vice president of public policy at bfrymoyer@mema.org.