

**WRITTEN TESTIMONY BEFORE THE  
U.S. HOUSE OF REPRESENTATIVES COMMITTEE ON SCIENCE, SPACE AND TECHNOLOGY  
SUBCOMMITTEE ON ENERGY**

**HEARING ENTITLED “THE NEXT MILE: TECHNOLOGY PATHWAYS TO ACCELERATE  
SUSTAINABILITY WITHIN THE TRANSPORTATION SECTOR”**

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Chairman Lamb, Ranking Member Weber and distinguished Members of the Subcommittee, thank you for the honor of appearing before you today for this important hearing on ways that the United States can accelerate sustainability in the transportation sector. My name is James Chen and I am the Vice President of Public Policy for Rivian Automotive, LLC.

Founded in 2009 by R.J. Scaringe, a PhD engineering graduate of MIT and a member of MIT’s Sloan Automotive Laboratory, Rivian is an independent U.S. company dedicated to the mission of keeping the world adventurous forever, through production and promotion of sustainable transportation. Rivian will be producing two new vehicles next year – a light duty pick-up truck named the R1T and an SUV named the R1S. Both vehicles were unveiled at the L.A. Auto Show in 2018 and have been showcased at various locations throughout the U.S. Both the R1T pick up truck and the R1S SUV will have a range of up to 400 miles on a single charge, quad motor equipped all wheel drive, dynamic air suspension, and a rugged chassis that will enable all-electric, zero emission off-road excursions. In addition, the pick up truck will have seating for five adults, class leading storage in a front truck and side gear tunnel, along with a bed payload capacity of over 1,700 pounds and a rated towing capacity of over 11,000 pounds. The SUV will seat seven adults and have class leading storage through innovations like a front truck, class-leading rear cargo space and folding seats for expanded storage.

Both of these vehicles (as well as future electric adventure vehicle products) were designed and engineered at our Vehicle Design and Engineering Center in Plymouth, Michigan, Representative Haley Steven’s district. Both the R1T and R1S will be produced at our 2.6 million square foot production facility in Normal, Illinois, currently under renovation and rehabilitation. In addition to these Midwest facilities, Rivian also has several battery, powertrain, and advanced technology research and development centers in California. Our mission and approach has been validated by strategic partners who have collectively invested over \$1.5 billion in Rivian. These strategic investors are leading technology and automobile companies and include Amazon.com, Inc., Ford Motor Company, and most recently, Cox Automotive. Rivian is bringing all electric adventure vehicles and platforms to market to promote zero emissions transportation and to enable exploration of our planet in a manner that is sustainable, safe, and reliable utilizing technology that was developed and built in the United States.

There can be no question that transportation in the United States is on the verge of a technological revolution. Car-sharing, ride-sharing, and automation are some of the new and exciting technologies promising to transform transportation as we know it. However, no technology shows more potential to provide a wider spectrum of benefits than electrification. In fact, the electric vehicle platform is vital to enable the rest of the aforementioned new transportation technologies to come to market.

Despite the gains made over the past ten years, electric vehicles still only comprise less than 2% of all new car sales in the United States. More must be done to promote this promising American technology. Rivian strongly supports the efforts by this Subcommittee and legislators promoting new transportation technologies such as House Bill 2170, the Vehicle Innovation Act of 2019. This bill would promote research and development in vehicle electrification, support new and improved methods of manufacturing for this technology, and address life cycle uses of electric vehicle batteries and their various components.

The benefits of electrification are numerous. Electrifying transportation in the United States will reduce our dependence on fossil-fuel based sources of energy, lower the total cost of ownership for consumers, promote use of domestically produced electricity, strengthen the grid infrastructure and foster national security, energy independence, a stronger economy and a healthier environment. Of these many advantages, the three that provide the most compelling justification for U.S. investment are our national interests in technology leadership, positive contributions to the economy, and protection of our environment.

More than ever, the United States must lead in the area of new transportation technology. Lithium ion battery technology was invented by U.S. physicist John Goodenough, now a professor at the University of Texas, Austin. Modern use of this battery technology in cars was introduced by the founders of Tesla Motors, Inc., who proved that long-range, highway capable, battery electric vehicles were not only possible, but in many respects, superior to the incumbent technology of internal combustion engines in terms of performance, efficiency and utility. The United States cannot afford to cede leadership in this technology to other countries – a number of whom are spending significant sums to develop and lead in the area of electric vehicle technology. For example, in the last decade alone, China has spent nearly \$60 billion dollars to create an industry that builds electric vehicles, while reducing the number of licenses available for gasoline powered cars to increase electric vehicle demand. In addition, becoming the world leader in electric vehicle technology and production is part of China's "Made in China 2025" initiative. The United States simply cannot let the technology invented in the U.S. be dominated by other countries. We have already seen the dangers of allowing foreign countries dominate an industry. For example, 95% of rare earth minerals are produced exclusively in China. In the early part of this decade, China sent world markets roiling when it drastically reduced the allowed export of rare earth minerals. With rare earth minerals used in critical industries as computer memory, rechargeable batteries, cell phones, air pollution control, magnets, fluorescent lighting; and critical defense uses such as precision-guided weapons, night vision goggles, communications equipment, and GPS equipment, restriction of this resource was a substantial threat to the U.S.' security and economy. Such foreign dominance cannot be allowed with it comes to new transportation technology.

Promoting electric vehicles has very real and tangible economic benefits to the U.S. Using Rivian as an example, the Company acquired the former Mitsubishi production plant in Normal, Illinois in 2017. Originally slated to be torn down and repurposed for mixed use residential and commercial, Rivian will instead, be investing over \$400 million into this facility and create over 1,000 direct manufacturing jobs. Rivian has already hired over 130 full time employees at the facility and has already spent millions on equipment and factory rehabilitation. The Company will begin production by the fourth quarter of 2020 and quickly ramp up production in the ensuing years. Ensuring electric transportation technology is supported and promoted in the United States will be instrumental in allowing Rivian to move forward with its investment and create economic opportunity and jobs in America.

Finally, electric vehicles are simply good for the environment. With zero emissions, every electric pick up truck and SUV introduced in the market supplants its gasoline powered counterpart thereby reducing criteria pollutants such as carbon monoxide, nonmethane hydrocarbons, oxides of nitrogen and particulate matter. Minimizing these pollutants is vital to the health of the American public with incidents of childhood asthma and other lung related ailments on the rise. Moreover, every zero emissions vehicle added to the U.S. fleet also reduces the overall greenhouse gas emissions profile of our transportation sector, which accounts for the majority of greenhouse gas emissions in the United States, according to the U.S. Environmental Protection Agency. In fact, reducing our greenhouse gas footprint is not simply desirable, but vital to begin to address the very real threat of climate change. 2019 will soon be recorded as hottest year on record. Not including this year, seven of the last ten years globally have been the hottest on record. According to the Intergovernmental Panel on Climate Change (“IPCC”), global greenhouse gases must drop 55% by 2030 to limit the adverse impacts of climate change and limit global warming to only 1.5°C. With total greenhouse gas emissions at around 53.5 gigatons, this means that we need to eliminate 29 gigatons by 2030. Switching our transportation sector to zero emission technology is part of the solution. While some critics of electrification complain that electric vehicles simply shift emissions from the vehicles to the power plant, numerous studies, including a 2015 study by the Union of Concerned Scientists (updated in 2018) and a 2018 study by BloombergNEF, have found carbon dioxide emissions from battery-powered vehicles were about 40% lower than for internal combustion engines, even when accounting for emissions from powerplants. And those vehicles will become even cleaner as the grid continues its current trend of reducing reliance on fossil fuel for electricity generation, providing greater emissions reductions as these vehicles are utilized over time.

In conclusion, the United States is best served by robust investment and support of transportation electrification technologies. Such investment maintains America’s leadership in this developing technology, supports and promotes the economy, and improves the environment assuring cleaner air for all Americans. Congress has a strong role to play in promoting research and development in this technology and supporting the manufacture and market introduction of this American innovation.

Chairman Lamb, Ranking Member Weber and distinguished Members of the Subcommittee, thank you again for the opportunity to testify today. I look forward to your questions.