FRANK PALLONE, JR., NEW JERSEY
CHAIRMAN

CATHY McMORRIS RODGERS, WASHINGTON
RANKING MEMBER

ONE HUNDRED SEVENTEENTH CONGRESS

Congress of the United States

House of Representatives

COMMITTEE ON ENERGY AND COMMERCE
2125 RAYBURN HOUSE OFFICE BUILDING
WASHINGTON, DC 20515-6115

Majority (202) 225-2927
Minority (202) 225-3641

July 1, 2021

Mr. Joe Britton
Executive Director
Zero Emission Transportation Association
659 C Street SE
Washington, DC 20003

Dear Mr. Britton:

Thank you for appearing before the Subcommittee on Energy on Wednesday, May 5, 2021, at the hearing entitled "The CLEAN Future Act: Driving Decarbonization of the Transportation Sector." I appreciate the time and effort you gave as a witness before the Committee on Energy and Commerce.

Pursuant to Rule 3 of the Committee on Energy and Commerce, members are permitted to submit additional questions to the witnesses for their responses, which will be included in the hearing record. Attached are questions directed to you from members of the Committee. In preparing your answers to these questions, please address your response to the member who has submitted the questions in the space provided.

To facilitate the printing of the hearing record, please submit your responses to these questions no later than the close of business on Friday, July 16, 2021. As previously noted, this transmittal letter and your responses, as well as the responses from the other witnesses appearing at the hearing, will all be included in the hearing record. Your written responses should be transmitted by e-mail in the Word document provided to Lino Peña-Martinez, Policy Analyst, at Lino.pena-martinez@mail.house.gov. To help in maintaining the proper format for hearing records, please use the document provided to complete your responses.

Thank you for your prompt attention to this request. If you need additional information or have other questions, please contact Lino Peña-Martinez with the Committee staff at (202) 225-2927.

Sincerely,

Frank Pallone, Jr.
Chairman

Attachment

cc: The Honorable Cathy McMorris Rodgers
Ranking Member
Committee on Energy and Commerce

The Honorable Bobby L. Rush
Chairman
Subcommittee on Energy

The Honorable Fred Upton
Ranking Member
Subcommittee on Energy

Attachment—Additional Questions for the Record

Subcommittee on Energy
Hearing on
"The CLEAN Future Act: Driving Decarbonization of the Transportation Sector."
May 5, 2021

Mr. Joe Britton, Executive Director, Zero Emission Transportation Association

The Honorable Scott Peters (D-CA)

1. Critics have said that power grids across the United States are unstable and not equipped to handle an increase in load that electric vehicles may bring. Can you please explain how and if electric vehicles would affect the grid?

RESPONSE:

ZETA RESPONSE:

Electric vehicle charging can provide a variety of benefits to the overall power system, such as improved grid management, reliability, resilience, and overall ratepayer affordability. In addition, utilities and customers can take advantage of the flexible and geographically distributed nature of EV loads through vehicle-grid integration (VGI), price signaling (like time-of-use), and optimized charging.

Optimized charging presents a key opportunity for EVs to soak up excess energy, like solar, that may otherwise be curtailed. For instance, there are often excess solar resources available in the morning hours – when demand is lower – and an increase in electricity demand in the afternoon and evening hours when the sun is down. Smart charging and incentives to EV owners to recharge during peak solar hours help drive down costs for consumers and allow the grid to utilize more renewable energy, and shift demand in a way that benefits all grid users. And studies have shown that with new clean energy capacity added to the grid, it will grow more dependable and we will see increasingly lower wholesale costs than today.[1]

The overall capacity on the system (e.g., distribution circuits) may need to be upgraded as EV adoption increases, but PG&E and Southern California Edison, who have the largest footprint of EV adoption, have found that EV charging "increased utility revenues more than they have increased utility costs, leading to downward pressure on electric rates for EV-owners and non-EV owners alike." The reason is that EVs can help shave the peaks and the valleys of power

[1] https://www.2035report.com/transportation/evs-the-power-grid/

demand, where additional energy utilization in non-peak hours drives revenue without additional generation costs. In other words, EVs can help increase the efficient use of the power grid.[2]

These EV charging benefits can be managed and improved using smart statewide or local programs to incentivize charging during non-peak hours.[3] Because EVs can charge any time they are plugged in, they can also serve as an energy storage resource or participate in demand response programs that provide additional grid benefits.

The Honorable Doris Matsui (D-CA)

While investing in electric vehicle (EV) charging infrastructure expansion, we should also explore the deployment of technologies that will maximize the lifecycle of charging equipment and improve consumer access and reliability at public charging stations. One effort to compliment the expansion of EV charging infrastructure consists of installing network-capable, interoperable "smart" EV chargers at public stations. These smart chargers are capable of being monitored and managed remotely, provide usage patterns data, and can help consumers see whether a charging port is in use or broken.

1. What do you think are the benefits of investing in network capable "smart" EV chargers, compared to non-networked chargers, as a part of the EV charging infrastructure expansion?

RESPONSE:

ZETA RESPONSE:

From a federal policy perspective, there are a diversity of approaches to expand EV charging. For example, smart chargers would benefit areas where remote monitoring and online management tools would increase "uptime." Increasing uptime would mean that more chargers will consistently be online and available to charge. Their networked capability also creates the ability to have variable pricing, which can incentivize charging at times when there is excess power on the grid ("time-of-use" pricing) to help reduce power loads at peak demand. Similarly, networked chargers collect data, which can be useful for understanding charging behavior, costs, use cases, and to help plan for future installations and upgrades.

There are, however, use cases where networked charging is not necessary or cost-effective. Non-networked chargers are less expensive to purchase because they do not require integrated technology, and the installation may be more straightforward and less costly. Nonetworked chargers are sufficient for single-family homes and many multi-unit housing uses. They may also be preferable from a cost standpoint in areas without reliable internet service where the benefits of networked capabilities are limited. Of course, non-networked chargers can still be "network

[2] https://www.synapse-energy.com/sites/default/files/EVs-Driving-Rates-Down-8-122.pdf

[3] https://www.nytimes.com/2021/01/29/climate/gm-electric-cars-power-grid.html

capable," meaning that if internet access reaches that area, they would be capable of being networked in the future.[4]

2. How will "smart" chargers enhance EV charging infrastructure and improve our communities' access to EV charging stations?

RESPONSE:

ZETA RESPONSE:

Smart chargers can be remotely monitored, increase uptime, and expand access because they are connected to the internet. Because prices, availability, and power can be accessed remotely for smart chargers, they can more easily be located by drivers using charging locator applications that show prices, location, and availability.

Further, as noted above, smart chargers can be utilized to make electricity more affordable at non-peak times of the day when the grid is producing excess power (base load), and otherwise would be curtailed. This may be especially valuable to price-sensitive consumers looking to reduce their transportation and fueling costs.

The Honorable Kathy Castor (D-FL)

1. Mr. Britton, the recently released 2035 Transportation Report from UC Berkeley finds that there are "no insurmountable barriers" to significant scale-up of EV supply chains. It also highlights the potential for recycling to improve materials efficiency and create jobs. How can investments in materials R&D and recycling infrastructure strengthen battery and EV supply chains? What is the current state of EV battery recycling infrastructure in the U.S., and what investments can we make to ensure that battery materials are recovered and reused efficiently?

RESPONSE:

ZETA RESPONSE:

With coordination, smart incentives, and appropriate policies, the U.S. can regain a competitive advantage in domestic battery supply chains and battery recycling in particular.

Battery recycling is a promising American innovation that can help free us from reliance on China for critical materials. Recycling technology is already delivering on a promise to reclaim 95% of criticalmaterials in a commercially competitive way. ZETA member companies – including the

[4] https://afdc.energy.gov/fuels/electricity_infrastructure.html

American Battery Technology Company (ABTC), Redwood Materials and Li-Cycle – utilize cutting-edge recycling technologies to separate and process these minerals from used batteries and convert them into storage cells and new EV batteries.

While over 69% of the world's lithium battery recycling occurs in China, ABTC is currently permitting and building a lithium-ion battery recycling facility in Fernley, Nevada. This facility would quadruple the current annual U.S. lithium carbonate equivalent supply to 20,000 metric tonnes a year. By recovering critical materials and selling high-quality metals back into the battery market, recyclers in this sector are forging a path for sustainability and supply chain security. An advanced battery investment tax credit would help these technologies grow and scale to help secure the domestic supply of critical materials, drive economic development, and create a circular economy for batteries to help achieve sustainable results for decades to come.

Additionally, Enel is embarking on Second Life, a partnership with Nissan Leaf. This initiative disassembles batteries at the end-of-life and repurposes them for large stationary storage systems. Rivian, too, is designing their batteries for both first-life vehicle applications and a post-vehicle second life in energy storage. Congress and the Department of Energy (DOE) should engage in public/private partnerships and fund research and development to help deploy repurposed batteries, use sustainable materials in battery manufacturing (i.e. reclaimed/recycled rare earth metals), and standardize battery module design and build for easier disassembly, repair or recycling. This is similar to the Battery Processing and Manufacturing provision in the Senate Energy and Natural Resources Infrastructure package (section 20007) which we hope to see enacted.

Currently, there are not any federal incentives in place for consumers to recycle their electronic devices. Investment in consumer incentives to return batteries for recycling or second-life opportunities will improve rates of recycling. Consumers are required to locate a facility and return batteries, which is burdensome for people without easy access to such facilities, or who have not been made aware of recycling programs. Additionally, there is not federally aligned guidance from the Environmental Protection Agency, the Department of Energy, and the Department of Transportation directing producers or consumers on how to properly recycle EV batteries, which may also be encouraged through public-partnerships. Without federal guidance, it poses complications for manufacturers making decisions about end-of-life uses for their batteries, and causes barriers for recycling companies. The federal government should o establish a working group across agencies to provide consistent battery guidance for recycling companies, battery manufacturers, and consumers on the reuse and recycling for all lithium-ion batteries. This would also improve the domestic critical mineral supply chain.

Recently, the Senate Committee on Energy and Natural Resources passed a bipartisan title as part of a larger infrastructure package. In this legislation, there is a provision which creates a Battery Material Processing Grant program (section 20009), which focuses on small- and medium-sized manufacturers to enable them to build new or retrofit existing manufacturing and industrial facilities to produce or recycle advanced energy products in communities where coal mines or coal power plants have closed. ZETA strongly supports initiatives to ensure that the United States reclaims global leadership by returning mineral processing and battery manufacturing to domestic companies. We hope to see this bipartisan provision included in the final package.

2. Mr. Britton, the pandemic has been a powerful and tragic reminder of the importance of equitable access to clean air for all Americans. Studies have shown that exposure to air pollutants increases the risk of severe impacts, including death, from COVID-19. What are the health and environmental benefits of transportation electrification? Who is most impacted by transportation-related pollution, and how can Congress ensure that these communities are among the first—not the last—to benefit from electrification?

RESPONSE:

ZETA RESPONSE:

The Union of Concerned Scientists has noted that in the Mid-Atlantic, communities of color breathe in 66% more pollution from the transportation sector.[5] And the impacts of this pollution was laid bare by the pandemic, where studies have found that "that someone who lives for decades in a county with high levels of fine particulate pollution is 8% more likely to die from COVID-19."[6] Reducing mobile-source emissions in the transportation sector through electrification is a unique opportunity to reduce these public health impacts, especially in disproportionately impacted communities. Congress can help accelerate these emissions reductions through EV consumer incentives, funding for infrastructure and strong performance and emissions standards.

Electrification will benefit those at high-risk for health complications, but it is acutely important for those living in and around ports and transportation corridors that are especially vulnerable to mobile-source emissions. The diesel-powered trucks in the medium-and heavy-duty sector disproportionately emit not only greenhouse gases, but the most deadly pollutants like particulate matter, nitrous oxide, and sulfur dioxide which have been shown to disproportionately cause premature death and chronic health conditions in communities of color.[7] These vehicles comprise only 10% of vehicles on the road, but amount to almost a third of carbon emissions and over half of the harmful pollutants that worsen public health impacts.[8] Congress should prioritize the electrification of this class of vehicles because electrification will provide outsized and accelerated improvement in air quality for these communities.

3. Mr. Britton, I am working on legislation to help upgrade and expand our electric grid to bring affordable clean energy to more homes across America and to support electrification in transportation, buildings, and other sectors. What kinds of grid

[5] https://www.ucsusa.org/resources/inequitable-exposure-air-pollution-vehicles

[6] https://www.hsph.harvard.edu/news/hsph-in-the-news/air-pollution-linked-with-higher-covid-19-death-rates/

[7] https://advances.sciencemag.org/content/7/18/eabf4491

[8] https://www.ucsusa.org/sites/default/files/2019-12/ReadyforWorkFullReport.pdf

upgrades will be needed to support EV infrastructure build-out and the goal of 100% electric vehicle sales by 2035?

RESPONSE:

ZETA RESPONSE:

As we move forward towards a clean energy economy, we must continue to modernize the electrical grid to meet the growing demand for electrification. EV charging presents a key opportunity to soak up excess energy, like solar, that may otherwise be curtailed. For instance, there are often excess solar resources available in the morning hours – when demand is lower – and an increase in electricity demand in the afternoon and evening hours when the sun is down. Smart charging and incentives to EV owners to recharge during peak solar hours help drive down costs for consumers and allow the grid to utilize more renewable energy and shift demand in a way that benefits all grid users. And studies have shown that with new clean energy capacity added to the grid, it will grow more dependable and see increasingly lower wholesale costs than today.[9]

Overall capacity on the system (e.g., distribution circuits) may need to be upgraded as EV adoption increases, but PG&E and Southern California Edison, who have the largest footprint of EV adoption, have found that EV charging "increased utility revenues more than they have increased utility costs, leading to downward pressure on electric rates for EV-owners and non-EV owners alike." The reason is that EVs can help shave the peaks and the valleys of power demand, where additional energy utilization in non-peak hours drives revenue without additional generation costs. In other words, EVs can help increase the efficient use of the power grid.[10]

[9] https://www.2035report.com/transportation/evs-the-power-grid/

[10] https://www.synapse-energy.com/sites/default/files/EVs-Driving-Rates-Down-8-122.pdf