

**United States House of Representatives  
Select Committee on the Climate Crisis**

**Hearing on May 20, 2021  
“Powering Up Clean Energy:  
Investments to Modernize and Expand the Electric Grid”**

**Questions for the Record**

**Emily Sanford Fisher  
General Counsel, Corporate Secretary and  
Senior Vice President, Clean Energy  
Edison Electric Institute**

**The Honorable Kathy Castor**

- 1. The Select Committee’s 2020 majority staff report “Solving the Climate Crisis: The Congressional Action Plan for a Clean Energy Economy and a Healthy, Resilient, and Just America” calls for adoption of clean energy standard (CES) to achieve net-zero emissions in the electricity sector. Portfolio standards are a proven tool for cutting carbon pollution: in the United States, thirty states, Washington, D.C., and three territories have adopted a renewable portfolio standard or CES. What are the critical issues that Congress must consider in developing a national CES? What is EEI’s position on a national CES?**

The Edison Electric Institute (EEI) supports a well-designed CES as an important tool for - reinforcing and accelerating electric companies’ ongoing clean energy transition. As of year-end 2020, the electric power sector had reduced its carbon emissions 40 percent below 2005 levels, while keeping electricity affordable and reliable for customers. Today, carbon emissions from the electric power sector are at their lowest level in more than 40 years—and they continue to fall.

A diverse array of clean energy resources has made these reductions possible: 40 percent of all U.S. power generation now comes from clean, carbon-free sources, including nuclear energy, hydropower, wind, and solar energy. Accordingly, one of the most critical issues in developing a national CES is the continued focus on using all clean, carbon-free resources. A CES must recognize or credit all clean resources, including nuclear energy and hydropower, and must be flexible enough to value new and emerging technologies, like carbon capture and storage (CCS) and hydrogen, among others.

In addition, as many recent studies assessing the paths to a carbon-free U.S. economy indicate, combined cycle and combustion turbines will continue to be the most cost-effective technologies

to integrate more renewable energy reliably.<sup>1</sup> These 24/7 technologies, which use natural gas today, can be transitioned to cleaner fuels or retrofitted with CCS as those options become available at scale and at costs that protect customers. A CES, therefore, should recognize the value of these technologies both today and in the future.

Other important design elements for any CES include compliance flexibilities, such as banking and credit trading, and other tools that recognize that continued increases in the amount of clean energy deployment are not likely to occur at an even annual pace, but instead in “chunks” as new generation is built and other generation is retired. Similarly, using a company-specific, multi-year average as a baseline can be an important design element to recognize that there is variability in annual reductions and that different companies and regions are starting at different places in the clean energy transition.

Cost-containment mechanisms should be included to protect customers. These can include alternative compliance payments and price caps. Timing flexibilities also are necessary to preserve affordability and reliability. These tools allow companies to match compliance deadlines with the availability of technology, particularly new, 24/7 clean resources, and can help address factors beyond companies’ control, like the timeline for the development of new transmission necessary to interconnect new clean resources.

The timeline for achieving 100 percent clean energy targets will depend on the development of new, affordable carbon-free technologies, which include long-duration storage; CCS; advanced renewable generation; advanced nuclear generation; and new fuels, such as hydrogen. As a CES alone may not incent sufficient research, development, demonstration, and deployment investments in these technologies in this decade, complementary policies should be part of any larger legislative package that includes a CES.

Similarly, while a CES can be an important tool to support and accelerate the clean energy transition for the electric power sector, other policies will be needed to ensure economy-wide reductions. Clean electricity can help reduce emissions in other sectors, particularly the transportation and building sectors. To the extent necessary, a CES should recognize and support the electric power sector’s role in helping achieve economy-wide carbon reduction goals.

- 2. Ms. Fisher, investments in transmission would benefit ratepayers across the country, increase reliability, create American jobs, and enable reductions in carbon pollution from the electricity sector. These widespread benefits suggest that modernizing and expanding the electric grid should be a goal that Americans of all political stripes can support. Do you think it would be a missed opportunity if we did not invest in transmission as part of infrastructure legislation?**

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<sup>1</sup> See, e.g., E. Larson, C. Greig, J. Jenkins, E. Mayfield, A. Pascale, C. Zhang, J. Drossman, R. Williams, S. Pacala, R. Socolow, EJ Baik, R. Birdsey, R. Duke, R. Jones, B. Haley, E. Leslie, K. Paustian, and A. Swan, *Net-Zero America: Potential Pathways, Infrastructure, and Impacts*, interim report (Princeton University, Princeton, NJ, Dec. 15, 2020) at Clean Firm Resources and Thermal Plant Retirements, pp. 177-199, [Princeton\\_NZA\\_Interim\\_Report\\_15\\_Dec\\_2020\\_FINAL.pdf](#).

EEI's member companies invest more than \$120 billion each year, on average, to make the energy grid smarter, stronger, cleaner, more dynamic, and more secure. These investments help diversify the nation's energy mix and integrate new technologies that benefit customers. They also create jobs, as EEI's member companies and their workers partner to modernize the energy grid to better serve customers.

Electric transmission infrastructure is the backbone of the nation's energy grid and is critical to facilitating the continued transition to clean energy. The transmission system already has enabled electric companies to integrate more clean energy resources and technologies into the grid affordably and reliably. To support the clean energy transition, critical electric transmission and other energy grid infrastructure must be built more quickly.

In addition to investing in transmission—including supporting increased private investment in transmission—other complementary policies are needed. The way the nation plans, permits, and pays for transmission can present more significant obstacles to building the transmission we need in reasonable timeframes than a lack of investment. Coupling federal investment support with other policy changes is essential.

In two critical areas, federal government support for continued and expanded investment in the energy grid could be transformative. First, investments to improve the resiliency of the energy grid (ensuring electric companies are at the center of such modernization) may be necessary to help some communities adapt to the changing climate and increased risks of natural disasters, including storms, hurricanes, and wildfires. Public-private partnerships, grants, and funding for state energy offices to address resiliency can be effective tools to support these investments and to leverage investments being made by EEI members.

Specifically, EEI supports H.R. 2885/S. 1432, the Power On Act; S. 704, the Disaster Safe Power Grid Act; reauthorization of the Smart Grid Investment Program to recognize deployment of resiliency technologies; and, within the CLEAN Future Act, Section 230, the 21<sup>st</sup> Century Power Grid Act, and Section 371, Facilities Energy Resiliency, which boosts funding for the Department of Energy's State Energy Program.

Second, federal support for investments in electric vehicle (EV) charging infrastructure can spur transportation electrification. Today, the largest challenge facing the EV market is the charging infrastructure needed to support market growth, not the energy grid that powers that infrastructure. A report from EEI and the Institute for Electric Innovation predicts that, by 2030, U.S. EV sales will exceed 3.5 million per year and that 18.7 million passenger EVs will be on U.S. roads, requiring about 9.6 million charging stations.

EEI's member companies are investing nearly \$3 billion in customer programs and projects to deploy charging infrastructure and to accelerate electric transportation. Increasing investment from all stakeholders—including electric companies, automakers, charging network providers, and others—will help drive transportation electrification.

## **The Honorable Anthony Gonzalez**

- 1. As we look to modernize the grid and secure it from cyber intrusions, what is the role of private communications networks?**
- 2. What opportunity is there to leverage utility communications networks and related infrastructure to help bridge the “digital divide” and deliver high-speed internet access to locations that have electricity but lack reliable access to broadband service?**

Electric companies long have incorporated telecommunications equipment and fiber technology into their operations—particularly in rural areas—to support their communications infrastructure and to provide real-time monitoring and controls for generation and transmission operations.

Substantial investments in telecommunications technology are needed to make the energy grid smarter, stronger, cleaner, more reliable, and more secure. Building out electric companies’ telecommunications network supports secure communications for mission-critical applications, facilitates additional smart grid tools and distributed energy resources, and makes the grid more resilient and more efficient. As regulated service providers, electric companies are well-positioned to help close the digital divide, as they have a physical connection to nearly every home and business within their service territory.

The importance of increasing access to broadband and making it universally available can be compared to the electrification of the United States, and policymakers are looking to electric companies to help bridge the gap. To provide multiple benefits to customers, electric companies are working with the communities they serve and with broadband providers to forge ahead with creative new partnerships designed to benefit everyone.

With the formation of partnerships, needed changes to state initiatives and laws, and the support of local communities, many electric companies are helping to bring affordable and reliable broadband to underserved and unserved communities, particularly as they upgrade the energy grid and install more fiber to support their critical communications network. Electric companies can install new fiber within their existing networks with enough capacity to support their needs and can lease additional capacity to others. This ability to install and to lease additional fiber has helped to lower broadband deployment costs in historically high-cost underserved and unserved communities.

Under this arrangement, the electric company provides the “middle mile” infrastructure—the segment that connects a local access point to the major carriers and the broader internet—which the internet service provider (ISP) will use to build out “last mile” broadband services to homes and businesses. Installing middle mile infrastructure typically is cost-prohibitive for ISPs in these areas, but partnering with electric companies allows both entities to build needed infrastructure cost-effectively and to reduce costs both for electricity customers and new internet customers.

## The Honorable Mike Levin

- 1. As we are all aware, the condition and operation of the grid in California has led to repeated catastrophic wildfires in our state. I wanted to touch on the role that technology can play as we seek to address wildfire risk. A utility in my district is working to deploy a solution that uses wireless broadband, smart grid technology to depower broken lines before they contact the ground. This is intended to eliminate the ability for downed lines to serve as an ignition source for wildfires. Ms. Fisher, do you believe widescale deployment of this type of solution could help protect against the sort of utility-caused wildfires we've experienced in California? And if so, what policy changes or funding recommendations would accelerate deployment of this and related technologies?**

Wildfires are a persistent and dangerous threat throughout much of the country, and they are particularly prevalent in the West. Nearly 85 percent of wildfires are “human-caused,” a broad category that includes fires started by unattended campfires, burning debris, equipment use and malfunctions, improperly discarded cigarettes, and arson. Electrical equipment and downed power lines also can pose a potential fire risk, particularly when the weather is hot, dry, and windy.

Wildfire behavior is unpredictable due to many variables, including weather conditions, terrain, and tree and vegetation species. This confluence of factors, coupled with changing climate conditions and population growth in more remote areas known as the wildland urban interface, is leading to more frequent, more destructive, and more costly wildfires.

Given the growing threat of wildfires within their service territories, electric companies continue to invest in mitigation, detection, and response efforts to reduce wildfire risk. They also are focused on prevention, protection, and public-private partnerships.

Electric companies are making significant investments to harden their systems and to make the energy grid more resilient. Actions include incorporating artificial intelligence, aerial inspections, and various low- and high-tech methods to mitigate potential fire risk caused by electrical equipment and to defend against passing wildfires.

While it is not possible to predict definitively where and when a wildfire may start, it is possible to use data analytics, combined with increasingly accurate weather forecasts and vegetation conditions, to identify high-risk areas. In addition to their enhanced mitigation efforts, some electric companies preemptively shut off power in these risk-prone areas when dangerous weather conditions or high wind events are predicted that could impact electric equipment and power lines. In recent years, electric companies have made significant investments in the energy grid—including system segmentation, islanding, and microgrid deployment—that have reduced the scale and scope of these events.

As noted, EEI supports the following bills, which would support efforts to minimize the wildfire risks that electric equipment may pose: H.R. 2885/S. 1432, the Power On Act; S. 704, the Disaster Safe Power Grid Act; reauthorization of the Smart Grid Investment Program to

recognize deployment of resiliency technologies; and, within the CLEAN Future Act, Section 230, the 21<sup>st</sup> Century Power Grid Act, and Section 371, Facilities Energy Resiliency, which boosts funding for the Department of Energy’s State Energy Program.

Hardening their systems against increasingly destructive weather conditions is a top investment priority for electric companies. Among their investments, electric companies are installing stronger and more fire-resistant poles and are placing sensors, high-definition cameras, and weather stations and other protective technologies in the field to provide real-time or near real-time information to electric company command centers and first responders.

Collectively, the electric power industry has improved real-time situational awareness capabilities significantly. In fact, electric companies in the West have some of the most advanced weather tracking systems in the country. They also are coordinating with various federal agencies through the Department of Energy to establish shared information platforms that will allow access to mapping tools, satellite data, fire spread modeling, and other analytics that will help drive real-time decisions and actions.

In addition to reducing the risk of fires caused by electric equipment, these measures help to protect equipment from being damaged or destroyed by wildfires and help to minimize service disruptions within and adjacent to fire perimeters.

While wildfires typically are seasonal, electric companies work closely year-round with federal, state, local, and tribal agencies to help identify high-risk areas. This constant collaboration, coordination, and communication focuses unified attention on proactive mitigation measures ranging from high-tech data analysis and aerial inspections via drones to fuel reduction and vegetation management. The electric power industry also enjoys great cooperation with federal government partners—specifically the U.S. Forest Service; the Departments of Agriculture, Energy, and Interior; and the Federal Aviation Administration—as well as with state regulators and local officials.

EEI’s CEO Wildfire Task Force and the Electricity Subsector Coordinating Council’s Wildfire Working Group, which includes investor-owned electric companies, electric cooperatives, and public power utilities, are focused on mitigation efforts, detection, and response as part of a comprehensive wildfire strategy. These efforts are core industrywide objectives for ensuring public safety.

Electric companies—individually and through partnerships with federal, state, and local stakeholders—are taking extraordinary measures to reduce wildfire risks on their systems and are working closely with wildfire managers before, during, and after fires to help save lives and protect property. Public policies must be reformed to support the continued efforts by electric companies and their wildfire partners to mitigate wildfire risk. It is vital that policymakers:

- Pursue land management strategies that allow electric companies to protect power line rights-of-way (ROW) by allowing access and authority to conduct vegetation management and operation and maintenance activities within and adjacent to ROW.

- Identify and enhance partnership opportunities to assist in fuel reduction efforts on federal lands.
- Expand the use of drones beyond the visual line of sight to conduct more efficient, cost-effective, and timely inspections for wildfire mitigation.
- Increase investments in grant programs at the Department of Energy and with the national laboratories to identify available and emerging technologies that could prevent, detect, and mitigate wildfire impacts. Regulatory structures should allow the deployment of this technology.
- Increase investments in grant programs at the Department of Energy to address costs associated with wildfire risk mitigation efforts.
- Increase investment in infrastructure resilience and recovery by providing federal funding for grants and tax incentives for investments in wildfire mitigation technologies.