Committee on Energy and Commerce

Opening Statement as Prepared for Delivery
of
Subcommittee on Energy
Ranking Member Kathy Castor

Hearing on "Securing America's Energy Infrastructure: Addressing Cyber and Physical Threats to the Grid"

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The United States needs energy infrastructure and an electric grid that meets the needs of the 21st century. That means a modern, reliable and resilient grid, and tools for power providers to guard against malign attacks. Unfortunately, the Trump Administration is taking us backwards, keeping us wedded to the technologies of the past that are insufficient to meet modern threats, or power next-generation innovations like artificial intelligence.

For example, the current Department of Energy terminated billions of dollars for projects meant to reduce the frequency and duration of blackouts and help utilities restore power faster. One energy expert who previously consulted with the DOE recently criticized the Administration for arbitrarily ending projects that sought to make the grid more reliable and able to withstand storms, hackers, accidents and other problems. Some of the canceled projects under the Grid Resilience and Innovation Partnerships Program, would have upgraded grid management – including improved sensing of real-time voltage and frequency changes in the electricity sent to homes and businesses.

The Trump Administration also slashed efforts to automate grid operations, allowing faster response to outages or changes in output from power plants, and developing microgrids – localized systems that can operate independently during outages – which really hit home last year when many businesses and neighbors went without power for days after hurricanes Helene and Milton.

Canceled projects are estimated to total $724.6 million in 24 states. For example, a $19.5 million project in the Upper Midwest would have installed smart sensors and software to detect overloaded power lines or equipment failures, helping people respond faster to outages and prevent blackouts. A $50 million project in California would have boosted the capacity of existing sub-transmission lines, improving power stability and grid flexibility by installing a smart substation, without needing new transmission corridors. Microgrid projects in New York, New Mexico and Hawaii would have kept essential services running during disasters, cyberattacks and planned power outages.

This Committee could play a constructive role to get back on track, especially as it has focused a lot of attention on the power needs of AI. Electricity, the technologies that produce it cheaply and efficiently, and a grid that can deliver it where needed, will determine the future of AI.

In 2008, China and the United States were roughly on par in the deployment of emerging energy technologies. Today, China dominates this sector – they are electrifying, while America recently has taken an offramp. Electrification in the U.S. is stuck at just over 20%. China is electrifying at 10

percentage points a decade. They're now at 30% and heading for 35%. And as a result, they're reaping the geopolitical benefits of being able to sell these technologies abroad. In August, China exported $20 billion in clean technology exports. For comparison, the US exported about $1.3 billion in liquified natural gas that month.

We cannot win the AI race of the 21st century while limiting ourselves to a 20th century energy policy playbook. As this committee has heard from witnesses repeatedly, we need to rapidly deploy grid-enhancing technologies, scale energy efficiency, and support virtual power plants. While doing so, we can make our grid more flexible and resilient, both to physical dangers and malicious cyber threats. Traditionally, our grid was established with a few, large-scale fossil-based electricity generators pushing out energy to customers. But that is changing to a much more flexible and interconnected model of distributed generation, where electricity is moving in both directions across wires all the time.

The clean energy transition and broader energy expansion to meet AI electricity demand is an opportunity to counter cybersecurity threats. If done properly, we can replace our outdated energy systems with software-enabled clean energy technologies. Modern tools allow the grid to recover more readily when harmed by a hurricane or a hacker that takes down a portion of the grid. We can use smart inverters, grid-forming technologies, and batteries to restabilize, or if necessary, quarantine a portion of the grid.

During Hurricane Milton last year, more than 600 well pumps failed in Hillsborough County due to the loss of power, leaving neighborhoods underwater. While parts of our grid took weeks to restore, solar and storage-equipped households never lost power. Good investments don't just make our grid stronger – they also make it smarter. We need more than stronger poles and wires. We need a more intelligent system that uses smart switches, sensors, and digital twins.

To support our utilities and co-ops that are deploying these technologies, we need modern regulatory structures and standards. We need better visibility into local grid architecture to optimize grid planning. And we need to prioritize the parts of our energy supply chain that pose the biggest security risks – like software management systems and inverters.

Securing our electric grid is a bipartisan national security imperative. Congress created several cybersecurity programs at DOE through the Bipartisan Infrastructure Law. It's imperative that we continue to support these efforts with sufficient funds and robust staffing. Plus, let's get back in the electrification race for the sake of our technological advancement and to put downward pressure on electric bills for consumers.

I look forward to hearing from our witnesses today about how we can get the United States back on track – so we can deliver the safer, cheaper, and cleaner energy.

I yield back.