

ATTACHMENT—ADDITIONAL QUESTIONS FOR THE RECORD

Subcommittee on Energy
Hearing on
“A Smarter Investment: Pathways to a Clean Energy Future”
Thursday, February 18, 2021

Mr. Craig Gordon
Senior Vice President, Government Affairs
Invenergy

The Honorable Bobby L. Rush (D-IL)

1. On February 16, 2021, The New York Times released an article entitled “Texas Blackouts Hit Minority Neighborhoods Especially Hard”. The article reported that experts and community groups believe that marginalized communities were the first to be impacted by power outages during the recent Texas winter weather crisis. Further, it reports that these communities are historically the last to have their power reconnected after these events.
 - a. How can power generation operation and development companies, like Invenergy and others, better serve historically marginalized communities during a similar extreme weather event? How can these companies better support marginalized communities generally?

RESPONSE: Reliability and resilience are key criteria for all Invenergy projects. Our systems must be reliable, meaning they should be available as much as possible to meet the demand for affordable power on the grid. They must also be resilient, which means they must be able to recover quickly from system disturbances. Said differently, Invenergy is responsible for making sure, to the extent possible, that power flows to the grid so that our utility or corporate customers have access to power. Ultimately, load-serving entities receive power that Invenergy has produced and make restoration prioritization decisions about their residential customers. To those ends, development and operations companies like Invenergy must continue to strive for the highest level of reliability, resilience, and safety so that the load-serving entities can meet their demand. In the wake of the Texas events, Invenergy wind technicians were on-site around the clock for several days focused on restoring wind turbines to service. At no period during the Texas weather crisis were all Invenergy turbines offline, due in large part to the hard work of our project site employees focused on recovery.

Invenergy is committed to making workforce and direct investments in disadvantaged communities through our project development and philanthropic work, in addition to bringing low-cost, clean energy to American families and businesses. First, Invenergy has a number of development and operating projects in predominantly low-income rural areas. These projects bring hundreds of jobs and millions of dollars to these communities, as well as other direct investments such as local education and sports contributions and other community benefits. In addition to the myriad benefits our projects bring to communities where they are located, Invenergy is finding new and innovative ways to support historically marginalized communities

all over the country. For example, Invenergy is committed to investing in training and STEM programs, especially in poor, rural, or otherwise disadvantaged communities. In Deuel County, South Dakota, Invenergy created a \$30,000 per year scholarship to benefit students at the local high school. We also have partnerships or relationships with organizations such as the Chicago Urban League, which supports and advocates for equality for African Americans, and Chicago's Project SYNCERE, which inspires and paves the way for underrepresented students to pursue careers in STEM careers. And, in 2019, Invenergy became the first sustainable energy company to make a three-year commitment to support the National FFA organization.

The Honorable Kathy Castor (D-FL)

1. Mr. Gordon, there is a growing consensus that upgrading and expanding the electric grid is a critical next step on the pathway to a clean energy economy. You mentioned that the rapid development and expansion of transmission infrastructure will create millions of jobs. Can you expand more on the potential of these jobs in a clean energy economy? What can Congress do to facilitate the creation of high-quality jobs as part of the transition to a clean energy economy?

RESPONSE: In the last decade, utilities and developers have deployed massive amounts of additional renewable resources, but the transmission infrastructure has lagged behind. We must build new long-distance, high-voltage transmission lines to enable the United States to deploy enough renewable generation capacity to decarbonize the power sector in a cost-effective way. For example, new transmission is a critical part of delivering the best renewable resources, often wind located in rural areas, to load centers where the power is needed. It is the only way to connect regions of the country with complimentary generation profiles to improve reliability and resilience. And, new transmission or transmission upgrades are necessary to continue to bring new variable generation onto the system to alleviate congestion.

Development and construction of long-distance high-voltage transmission lines will support thousands of jobs across a project footprint, including substantial direct, primarily union jobs, as well as additional indirect and induced employment. As an example, Invenergy is developing the Grain Belt Express transmission line, which will carry 4,000 megawatts (MW) of power from southwest Kansas to western Indiana. This line will take electricity from the Great Plains and deliver it to the PJM Interconnection, the grid operator for the mid-Atlantic region. The Great Plains is home to one of America's most abundant and low-cost wind energy resources, and this transmission line will provide direct access to this domestic energy resource for consumers across the Midwest and East Coast, where there is significant demand for low-cost, clean power.

Kansas, Missouri, and Illinois are the three states that will primarily benefit from construction of the Grain Belt Express transmission line, while also experiencing wind energy industry supply chain benefits from the 4,000 MW of new wind energy generation to be built in Kansas that will be enabled by the line. This combined buildout represents \$10 billion in new clean energy infrastructure investment for the Midwest. This will support approximately 12,000 jobs and \$1 billion in annual worker earnings each year over the three-year construction period, as well as approximately 1,500 full-time, permanent jobs and \$88 million in worker earnings during operations. Additionally, the project will deliver billions of dollars in electricity cost savings for

consumers in the Midwest and eastern half of the U.S. while at the same time advancing energy de-carbonization.

Transmission development is incredibly expensive and time consuming, and often unpredictable because of siting and permitting challenges that can arise at any point. Developers are hesitant to embark on such expensive gambles because current federal law provides no assurances that a developer can complete (much less earn a reasonable rate of return on) merchant or interregional transmission projects. As a result, these projects rarely make it across the finish line. There are several policies that Congress could consider, and actions the federal government can take, to promote new transmission deployment. For example, Congress can pass federal incentives for transmission, such as an investment tax credit for new or upgraded long-distance, high voltage transmission. Federal incentives can reduce the costs for new transmission and provide financing opportunities for these projects that may not have existed otherwise. Congress could also reform transmission siting policies so that developers have more certainty that they will be able to complete projects that are important for reliability, resilience, and renewables integration. Furthermore, to advance needed transmission buildout Congress should request federal agencies establish processes to ensure early-stage alignment between and across federal agencies and departments, such as the U.S. Fish and Wildlife Service and the Army Corp of Engineers, that allows for a predictable and consistent process for environmental review and permitting; this is particularly critical for projects that cross multiple jurisdictions, where reviews must be coordinated between multiple offices, districts and regions. Related, federal agencies should establish binding milestones for development of environmental review documents and issue resolution.

2. Mr. Gordon, we want to ensure that all Americans see the benefits of the transition to a clean energy economy. Given the recent winter storm in Texas and the Southern Plains, how would upgrading and expanding the electric grid increase resilience and benefit everyday Americans? How can Congress support hardening and weatherizing grid infrastructure?

RESPONSE: Recent weather events in Texas, Oklahoma, and Kansas illustrate how harmful and costly it is for the United States to maintain an outdated electric transmission system that does not efficiently connect generation to load. These events reveal vulnerabilities with our outdated and insufficient system, exposing both reliability concerns (unplanned and unexpected outages) and resiliency deficiencies (severe problems with the grid's ability to quickly and effectively recover after a major outage). Because weather is provincial, meaning that what happens in one region of the country may not be occurring in another, transmission expansion can support regions experiencing outages due to inclement weather. Connecting regions, utilities, regional transmission entities, and electric interconnections with one another can diversify supply and reduce overall risk of power outages.

In addition to the significant reliability and resilience benefits a more connected transmission system can provide, new high-voltage electric transmission lines are more efficient. These new lines can reduce line loss, allowing for the delivery of more power that makes its way from point

A to point B across longer distances. These lines also allow utilities and developers to install more resources onto the grid because they decrease the power losses and, subsequently, the required reserve margins of a given region. For example, existing renewable projects already experience “curtailments,” as a result of grid congestion, wasting valuable new clean energy that the system cannot handle and depressing wholesale power prices. Improving and expanding transmission can help avoid these curtailments by absorbing additional power brought onto the system. Relatedly, it can also help clear the logjammed interconnection queues across the country so projects can come online to supplement the system. Again, these improvements ultimately benefit customers, because it reduces electric costs to customers while still delivering clean power and ensuring reliability and resilience.

Congress can do several things to support expansion and hardening of the grid to realize the benefits this important infrastructure can bring about. First, Congress can pass federal incentives, such as an investment tax credit (ITC), for new or upgraded electric transmission that supports the reliability and resilience of the system by bringing on new clean energy generation or connecting regions or interconnections. Second, Congress can pass legislation to improve the siting process for electric transmission, which is currently a multi-phase process requiring approvals at the landowner, local, and state levels all along the route. Finally, Congress can pass laws that improve interregional planning processes, incentivize improvements and new technology to make transmission more efficient, and improve environmental permitting processes. Each of these policies will allow and encourage developers and utilities to improve the grid, which will harden the grid and facilitate resource-sharing to protect areas experiencing serious weather events.

3. Mr. Gordon, hundreds of gigawatts of wind, solar, and energy storage projects are stuck in interconnection queues waiting to connect to the electric grid. What can Congress do to help alleviate this situation?

RESPONSE: Regional transmission organizations (RTOs) and independent system operators (ISO) are functions of the Federal Power Act that allow regions of the country to share transmission resources, pool power to reduce costs and ensure reliability. In addition, RTOs and ISOs ensure non-discriminatory access to the transmission system in accordance with the Federal Energy Regulatory Commission’s (FERC) Order 888 by administering the generation interconnection process. Each of these RTOs and ISOs have their own rules for permitting the interconnection of new generation as well as separate processes and procedures for studying the impact of generators interconnecting to neighboring systems. The industry is at an inflection point – one need look no further than each region’s interconnection queue to see the massive amount of renewable generation that is waiting to replace retiring fossil fuel generation but these interconnections are occurring in new locations further away from load centers where the retiring generating facilities are located today. Renewable generation must be sited and interconnected where the natural wind or solar resource is most plentiful, but these areas tend to be sparsely populated and do not have robust transmission infrastructure. Because generators must interconnect where the natural resource is strongest (or build long generator tie lines to tap these regions) many developers are simultaneously interconnecting to the same weak spots on the system. This has resulted not only in long study delays due to the volume of interconnection requests but also unacceptably expensive upgrades costs that are added to individual projects and

an inefficient and piecemeal upgrading of the transmission system. This is occurring not through thoughtful long range transmission planning that would tap into the best resource regions and result in the largest benefit for the cost, but through individual projects paying hundreds of millions of dollars to upgrade the existing system which was not designed to accommodate the generation mix of the future. In other words, transmission planning and interconnection planning are bifurcated and considered in isolation rather than through an integrated process that would produce efficiencies. Decision-makers should ensure that new, high voltage transmission or network upgrades are forward thinking in nature in order to avoid long interconnection queue delays as well as the piecemeal, expensive, and inefficient upgrading of the transmission system that is occurring today.

Congress can do at least two things to reduce these issues: first, Congress must exercise its oversight of FERC to be sure that interconnection queue processes are just and reasonable. The current process in some of the regions is clearly not working, so FERC must monitor these regions and act to address the issue. Second, Congress can take actions to encourage the development of new long-distance, high voltage transmission and upgrades to existing lines to expand capacity. As mentioned above, Congress can create federal incentives for transmission, such as an investment tax credit for new or upgraded long-distance, high voltage transmission. Congress could also reform transmission siting policies so that developers have more certainty that they will be able to complete projects that are important for reliability, resilience, and renewables integration. Finally, Congress could designate a single agency or office as a “clearinghouse” for electric transmission permitting and siting to avoid duplication of efforts or conflicting or impossible deadlines that could otherwise end a project.