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October 28, 2022

VIA E-MAIL
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Re: Regional Transmission Initiative
Notice of Request for Information and Scoping Meeting

Regional Electric Transmission System Changes To Integrate Renewable Energy Resources - Comments of Transource Energy, LLC

Ladies and Gentlemen:

Transource Energy, LLC ("Transource")[1] hereby submits the following comments on the above-referenced Request for Information ("RFI") issued by the States of Connecticut, Maine, Massachusetts, New Hampshire, and Rhode Island (the "Participating States"). In its Comments, Transource focuses on RFI Questions 8 and 9 and establishes the environmental, economic and system benefits of using advanced transmission technologies, such as Breakthrough Overhead Line Design ("BOLD"), as a component of the transmission solutions necessary to integrate renewable energy resources reliably and cost effectively on the electric systems of the Participating States.

As the Participating States and ISO New England Inc. ("ISO-NE") consider the transition from fossil-based generation to regional clean energy resources, including offshore wind ("OSW"), solar, land-based wind ("LBW"), and energy storage, the safe, reliable, effective, and efficient build out of transmission to interconnect these resources to load centers must be paramount. By including advanced transmission technology that has been successfully deployed and is performing exceptionally in other States into transmission and distribution ("T&D") planning, the Participating States will ensure that ratepayer dollars are wisely invested in a state-of-the-art transmission system that will maximize benefits.

[1] Transource, a partnership between American Electric Power ("AEP") (86.5%) and Evergy, Inc. (parent company of Kansas City Power & Light Company and Westar Energy, Inc.) (13.5%), by way of its parent company, AEP, has successfully deployed BOLD in seven projects of over 90-miles of new lines, and is currently designing BOLD in two projects totaling 380 miles of double-circuit 345-kV lines in Texas. On October 26, 2022, Transource was awarded a large development project in Pennsylvania for the New Jersey Board of Public Utilities, OSW State Agreement Approach solicitation, supporting OSW development in New Jersey.

Specifically, fostering advanced transmission technologies as part of a comprehensive T&D plan provides an opportunity to pair a proven tower and line design that is deployable today, cost-competitive, and more efficient with renewable technology to deliver clean power to load centers. Utilizing an advanced compact line design, these transmission technologies uniquely can deliver more power over existing rights of way with fewer environmental impacts at lower cost. These technologies include BOLD, which has been chosen in competitive procurements conducted in Indiana, Ohio and, most recently, through a low impedance design requirement directed by the Electric Reliability Council of Texas ("ERCOT"). Indeed, as reflected in the recent ERCOT process, BOLD is particularly well-suited in circumstances requiring low impedance lines, that could require less rights-of-way at similar or lower cost compared to typical 345-kV or 500-kV circuits and still provide effective transfer capability without series compensation to avoid sub synchronous resonance issues on rotating generators such as OSW and LBW. BOLD has been successfully deployed on time and in budget and, because it operates at a higher capacity factor, it is more efficient than traditional line and tower designs. Equally important, it also has fewer environmental and aesthetic impacts as compared to traditional power lines. In the Participating States, where power lines must run through rural, exurban, and suburban areas that may include environmental justice communities to distribute the generation produced by OSW and other renewable resources to consumers, minimizing the aesthetic and environmental impacts of T&D projects is fundamental to engender community support.

The Participating States have set important policy goals to reach net-zero emissions.[2] T&D planning to support these individual State Policies will be a fundamental element of transitioning the electric system while maintaining grid reliability. Pairing renewable resources with transmission in the most efficient manner will be a significant element of the sea change in electric service occurring across New England. Utilizing advanced transmission technologies that have proven successful in interconnecting renewable generation will thus be a critical component of that strategy and Transource urges the Participating States to require their respective investor-

[2] In Massachusetts, on August 11, 2022, Governor Charlie Baker signed into law "An Act Driving Clean Energy and Offshore Wind" ("MA Climate Law"). Alongside the Massachusetts 2050 Decarbonization Roadmap, the MA Climate Law provides tax credit funding for OSW, and authorizes Massachusetts to join other Participating States in bidding for OSW, land-based wind, and solar resources. Massachusetts has established a policy to have net-zero resources in the power generation sector by 2050. In May 2022, Connecticut Governor Ned Lamont signed laws codifying a goal of a zero-carbon electric grid by 2040 and expanding Connecticut's support for distributed renewable generation. *See* CT Pub. Act 22-5 and CT Pub. Act 22-14. In July 2022, Rhode Island Governor Dan McKee signed legislation requiring market-competitive OSW procurement of up to 1,000 MWs of OSW by 2026 and its 2021 Act on Climate law set a policy goal of 100% renewable energy by 2023. *See* https://governor.ri.gov/press-releases/governor-mckee-signs-legislation-requiring-offshore-wind-procurement-600-1000. Maine's Climate Action Plan "Maine Won't Wait" has a goal of reducing greenhouse gas emissions 45% by 2030, and 80% by 2050, and set targets for cost-effective deployment of OSW, distributed generation, and energy storage. *See Maine Won't Wait: A Four-Year Plan for Climate Action*, Maine Climate Council (Dec. 2020) at 12-13 and 26-32. New Hampshire remains the only New England state without a statutory mandate for greenhouse gas reductions. *See https://www.nhpr.org/nh-news/2022-06-09/as-lawmakers-wrap-up-for-the-year-nh-is-still-an-outlier-in-climate-policy*. However, New Hampshire is a signatory to the New England Governors and Eastern Canadian Premiers Regional Climate Change Action Plan, which supports targets for cost-effective low carbon electric generation. *See https://www.coneg.org/wp-content/uploads/transferred/Data/Sites/1/media/documents/reports/2017-rccap-final.pdf* at 8. While not a Participating State due to its lack of coastline, Vermont's statutory mandates require greenhouse gas emissions reductions of 40% below 1990 levels by 2030, and 80% below by 2050, and its energy policies expressly recognize the importance of climate change initiatives.

owned utilities to demonstrate they have considered whether advanced technologies can be used when they propose their projects.

Background

As stated in the RFI, to meet current emissions reductions goals and technology-specific statutory and policy mandates set by the Participating States, tens of thousands of MWs of OSW alone will need to be interconnected to maintain system reliability.[3] In addition to OSW, the Participating States' energy policies have also embraced renewable generation, such as solar and LBW. As a result, those resources are developing at a rapid pace and will also require transmission upgrades.[4] Many of these resources are located in rural and exurban areas and are especially concentrated in Cape Cod, central and western Massachusetts, central Connecticut, southern New Hampshire, southern Maine, and throughout Rhode Island.[5] All told, installed capacity of solar alone accounts for 4,767 MW, with over 40% of that coming from utility-scale solar projects. ISO-NE has projected that number to grow to 11,520 MW by 2031. Like OSW, these utility-scale resources will need adequate transmission upgrades to avoid constraints and bottlenecks while remaining deliverable to load centers in urban areas. These transmission upgrades also must traverse coastal, rural, exurban, suburban, and scenic areas of New England where rights-of-way are limited, and potential aesthetic and environmental impacts can present challenges for view sheds and siting.

BOLD Line and Tower Design Can More Efficiently and Cost Effectively Interconnect Renewables

The transition to a carbon-free grid will undoubtedly pose challenges, not the least of which will be upgrading the transmission system in each Participating State to reliably manage the operation of renewable generation resources. To meet Participating States' policy goals of a carbon-free grid and reduced greenhouse gas emissions in the electric sector, the advantages that advanced transmission technologies bring to bear in interconnecting renewable resources should be considered.

Where, as here, the Participating States' policies are driving an increase in solar and wind generation, BOLD's reduced inductance and impedance, together with its increased transfer capability, make it an ideal complement to these generation technologies. AEP – a parent of Transource – has actively and cost effectively deployed BOLD across the United States. BOLD is currently meeting and exceeding design criteria with over 90 miles of infrastructure energized and in service in Ohio and Indiana at this time, and an additional 30 miles in construction or design. These 90 miles of projects, ranging from 345-kV double circuit lattice and monopole to 138-kV double circuit monopoles, are energized and are exceeding design criteria. BOLD also is currently being developed for an approximately 350-mile, double-circuit 345-kV project in Texas as discussed in more detail below. In these applications, BOLD has been or will be deployed and has

[3] *See* RFI at 2.

[4] *See e.g., Final 2022 PV Forecast*, NE ISO (April 28, 2022).

[5] *Id.* at 17-18.

exceeded expectations, minimized aesthetic and environmental impacts, and, equally importantly, it has achieved these results with cost savings of up to 5% over traditional line and tower designs.

New England, with its scenic beauty, pristine coastlines, and fall foliage that attracts tourists from across the nation, is home to 14.8 million residents occupying a wide range of communities and topographies. Traditional overhead lines, especially larger latticed towers, tend to take more space and rights-of-way, and sit above the tree canopy, making them more visible and creating a greater impact on community character. The cost of underground lines over the long distances that will be needed to interconnect OSW and other renewable resources to the grid is simply not economically viable. In needing to traverse New England's range of topography, from shoreline to deciduous forests to farmland, a more advanced line and tower design like BOLD with its patented line and pole designs minimizes the use of rights-of-way, sits at or below the tree canopy, and has lower electromagnetic fields. Notably, fewer environmental impacts and better aesthetic characteristics can also minimize impacts on environmental justice communities that have too often been left out of technological advances. By minimizing aesthetic and environmental impacts, BOLD can facilitate siting and community engagement while better maintaining the look and feel of a host community.

BOLD's Texas deployment is particularly probative. Texas, with its significant existing wind power resources,[6] announced its 350-mile Lower Rio Grande Valley System Enhancement Project (the "LRGV Project") in 2021. ERCOT fast-tracked the LRGV Project, a project that was required to address emergent system reliability needs and improve system resilience in the eastern Rio Grande Valley while also being able to integrate future load and generation. ERCOT designated low-impedance 345-kV circuit technology, less rights-of-way at a lower cost compared to traditional 345-kV circuits, and effective transfer capabilities without series compensation as project requirements. Given these necessary parameters to deliver Texas wind power to urban load centers, BOLD was the only rational and cost-effective transmission choice. With its selection, land acquisition is now underway, along with line design and, as a result, Texas consumers will benefit from being served by over 350 miles of 345-kV, double-circuit, low impedance lines.

Operationally, BOLD has demonstrated it can be maintained as easily as traditional lines. The BOLD design includes maintenance vangs and working holes on the structure, working holes on the yoke plates, and select hardware connections. A climbing hot box is also provided. These features for live line maintenance, when and where warranted, allow maintenance of the lines to be addressed effectively. Additionally, line maintenance contractors have also developed live-line maintenance techniques to maintain BOLD lines. In extreme weather events, traditional structures can be temporarily utilized on up to 5% of the total line length without altering system performance to accommodate emergency storm repairs.

[6] Texas has the most wind power of any State but also faces transmission constraints, such that wind energy generated in rural areas cannot be delivered to urban load centers in Dallas, Fort Worth, Houston, or Austin. *See* https://www.texastribune.org/2022/08/02/texas-high-plains-wind-energy/. As discussed above, BOLD helps solve these constraints by providing a lower impedance line design with higher transfer capability using shorter structures and less space in rights of way.

CONCLUSION

As the Participating States implement their climate change policies, their electric systems will be radically reshaped. OSW, LBW, solar, and energy storage will be major components of a carbon-free grid. The construction of renewable generation has increased exponentially in the past several years and will continue over the next decade. But along with that development comes challenges, including delivering this energy from the rural areas where it can be sited to high-demand load centers. Interconnecting these resources in a manner that efficiently delivers renewable power to meet consumer needs will require significant transmission upgrades. Advanced transmission technology, including line and tower designs tailored to renewable generation, must be considered in T&D planning and project development if these challenges are to be met efficiently and cost effectively.

As ISO-NE found in its *Economic Study: Future Grid Reliability Study Phase I*, the transmission system will need to be significantly upgraded to ensure renewable energy is delivered throughout New England to meet consumers' needs. As demonstrated in Ohio, Indiana, and Texas, the time is now to invest in existing, proven, deployable, advanced line and tower designs to support the Participating States' policy goal to implement a carbon-free grid and efficiently and cost effectively deliver renewable power across New England. Transource thus respectfully urges the Participating States to require utilities to demonstrate they have considered the implementation of proven advanced transmission technologies to be the cornerstone of T&D planning and project development.

Very truly yours,

David E. Rupert
Vice President