

I would like to thank Chairman Lowenthal and Ranking Member Stauber for the opportunity to offer testimony at this hearing. Prior to my current position, I spent nearly 10 years working for Chairman Pallone, so it is a particular privilege to be before you today.

I am Janice Fuller, the Mid-Atlantic President for Anbaric Development. We are a US based developer of large-scale electricity transmission projects, with a focus on transmission infrastructure for offshore wind. Anbaric spearheaded the development of \$1.5 billion undersea cables in the New York region, are currently developing multiple projects that will help deliver offshore wind power from wind farms to the terrestrial grid, and have been long-term advocates for the need to plan the transmission infrastructure necessary for the offshore wind industry to succeed.

We are at the precipice of a new industry in the United States, an industry that is central to the clean energy revolution. President Biden has set an ambitious, but achievable, goal of deploying 30GW of offshore wind power by 2030, bringing the nation to utility scale wind generation. For comparison, Europe which has a more than 2-decade head start on the development of offshore wind, currently has 35 GW deployed. States up and down the east coast have set their own goals for offshore wind procurement totaling 40GW, and have contracted for several thousands of megawatts to date including projects in New York, New Jersey, Massachusetts, and Virginia. These resources will help diversify electric systems that have grown too dependent on a single fuel source, creating greater reliability and cost savings for consumers, as well as increased energy independence.

And while there has been much celebration of the rapid growth of offshore wind - and the billions of dollars of economic investment and tens of thousands of jobs that it will bring - getting the power to shore presents a significant and immediate challenge that must be addressed.

To date in the United States, transmission has been approached on a project-by-project basis, using what is referred to as a generator lead, or radial, line. That is, essentially extension cords out to each wind farm. Perhaps if there were to be only a few projects, this approach could work. But to achieve the goals previously discussed, a thorough and planned process is necessary. In a planned system, fewer wires that can carry the capacity of several wind farms are used. Studies show this approach reduces the number of cables by well over one-half, reducing the environmental impacts and improving system reliability. We must go about planning the needed transmission infrastructure like we would a highway system - not one access road at a time, but rather as an efficient and well-planned road network.

Extending the benefits of a grid into the offshore wind areas and upgrading the onshore energy grid are both critical to integrating the higher levels of offshore wind now embraced by the Biden Administration. Strategically planned and competitively procured transmission will enable the nation to integrate offshore wind at the lowest total cost by minimizing transmission bottlenecks, reduce grid connection risks - including reducing the risk of permitting delays vs. radial connections - minimize environmental and fisheries impacts, and increase competition between wind farm developers which could utilize an open access grid in the same manner that new on-shore resources interconnect to the grid, instead of building single-purpose interconnections. Further, if planned network designs are used, ratepayers will see the significant benefits of power system reliability and resilience that planned transmission can provide avoiding months long power loss in the event of a radial cable failure, allowing states to more confidently utilize these resources to replace current fossil generation fleets. As compared to radial lines, networked transmission can reduce the amount of onshore

upgrades needed by creating power transfer paths offshore, materially decrease curtailments of offshore wind energy, and allow for power to be delivered where it is needed by system operators.

And, while much of the critique of the renewable energy transition focuses on the cost, we should recognize that independent offshore transmission will increase competition between offshore wind developers, leveling the field between leaseholders nearer and farther from shore and drive down prices. In Europe, strategic investments in transmission have enabled countries such as the Netherlands to deploy offshore wind without subsidies or utility-backed contracts. In addition, creating competitive processes for transmission will even further the competition by bringing additional companies into the procurements.

Analysis by the Brattle Group in New England found that a planned approach to developing transmission for the next round of offshore wind procurements could avoid over \$1.1 billion in onshore grid upgrades and significantly reduce the risk associated with major onshore transmission projects. These risks of major onshore upgrades are already confronting projects that states have selected and will likely increase as accessible POIs with available interconnection capacity are used. Brattles analysis of the New York region showed the same benefits of planned transmission, stating that a planned approach would save ratepayers \$500 million.

Planned transmission can additionally serve as a platform for third-party purchases of renewable energy through power purchase agreements (PPAs), enabling financing and deployment of offshore wind without relying entirely on state-led procurements. In Texas, strategic investments in transmission through the Competitive Renewable Energy Zone (CREZ) program have enabled over 2,000MW of onshore wind energy PPAs from 22 corporate buyers. In the Netherlands planned transmission has enabled corporate PPAs for offshore wind.

It should be noted that the concern by some that separate or planned transmission creates project-on-project risk and that this is a significant issue to be addressed does not correctly identify causes of early offshore wind delays, and further does not reflect the current choices made by countries deploying significant offshore wind. Rather, history shows that early planned transmission issues did not result from project separation, but from a series of technical and other factors that indicate the ambitious first attempts at planned transmission were simply difficult to execute. This was the early attempt by the German TSO, TenneT, to build a shared system. However, as was reported in the press at the time, this was not a separate transmission issues but a result of issues like undercapitalization for the project, the technical complexity of the project with solutions that were not mature, and an underdeveloped supply chain.

While this narrative of project-on-project risk has been spun to advance a position that radial bundles are a “less risky” approach, the evidence to the contrary comes from countries like Germany, which did not abandon planned transmission but rather more fully embraced it as the superior approach. The approach has worked well for other countries like the Netherlands. In fact, even a nation like the United Kingdom –which has the best-case coastline for extensive radial development – is moving to a planned, network system finding the same sort of significant consumer benefits (an over 6 billion pound savings compared to radials) and environmental and environmental justice benefits (50% less equipment vs. radials). While some have argued that if we are to move to a planned system, it should be done after radials are further utilized for additional projects, the UK found that even delaying five years –starting in 2030 vs. 2025 - cut the economic benefit to consumers by half.

Planning and competitive procurement have enabled multiple jurisdictions to efficiently connect generation utilizing shared transmission facilities and have led to subsidy-free wind procurements. This is, in itself, a very significant consumer benefit of planned transmission that could save consumers billions of dollars compared to alternatives and simply is not enabled by single farm radials or even by power corridors.

Europe also demonstrates that the technology is mature. Arguments that technology standards are needed before planned transmission can proceed are not supported by current projects around the world. The technology is mature, and just like onshore, where there is planning ahead for expansion on platforms, different technologies from different vendors can be connected. The argument that planned transmission is choosing a technology now for the entire system is not factually correct.

To those who are concerned about the costs of all this transmission, there is good news. An October 2020 study by ISO New England, the regional transmission organization for that region, found that transmission to incorporate 8 GWs of offshore wind would reduce the production cost of electricity by 50%. In the past few weeks, the Rocky Mountain Institute released a study similarly finding that transmission results in dramatic consumer savings. In power systems where a single cold snap event can add multiple billions in power costs from just the price spikes of natural gas, large amounts of new enabling, planned transmission can literally pay for themselves over the course a one or two significant weather events.

What is critical to the future is a strong and predictable role of the federal government in transmission planning. Multiple federal departments and agencies have, or should have, a role in this space. The Bureau of Ocean Energy Management (BOEM) has the authority to award rights of way for transmission lines that will transverse federal waters. BOEM should be given the guidance to expeditiously approve corridors that favor the least environmentally impactful planned transmission systems. The Federal Energy Regulatory Commission (FERC) has jurisdiction over the rules regarding transmission development and cost recovery, both on land and in the water. Congress should ensure that FERC has the guidance to ensure that its interconnection rules allow for large, transmission-first projects that can serve multiple generators, and has policies that favor open access, competitively procured transmission that maximizes a range of rate payer benefits. And Congress, through power of the purse strings can set up funding streams to procure the investments needed in transmission, again similar to national highway funding, and assist states and RTO's with the expense associated with planning, and can further expand tax incentive programs to target smart, planned transmission development conducted through competitive solicitations and discourage short-term, single project lines of today.