Statement of James Cotter

General Manager, Offshore Wind Americas, Shell New Energies

Technical Conference on Offshore Wind Integration in RTOs/ISOs

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Thank you for having me. I am James Cotter, the Shell New Energies LLC ("Shell") General Manager for US Offshore Wind, based in Boston. Shell's purpose is to provide more and cleaner energy solutions. Shell has investments in two offshore wind development companies - Mayflower and Atlantic Shores - that have lease rights off the US East Coast –. What gets me up in the morning, and why I'm here today, is the answer to the question: "but how will you do that?" The "how" includes renewable electricity generated from wind power.

Our belief is that the current approach to transmission may limit offshore wind installation to 4-5GW and will likely be a barrier to significant offshore wind installations on the US West Coast. We believe a planned transmission backbone approach can be delivered faster and more efficiently than multiple, radial line interconnections, and presents a more realistic pathway to realize the states' significant ambitions. It is logical that planned routing to load centers could require less investment, less disruption, and deliver more benefits and studies already conducted are demonstrating this.

1**. In an ideal world, what would a model for transmission development that could accommodate anticipated growth in offshore wind generation look like? Could this be achieved under existing RTO/ISO approaches? If not, what are the impediments?**

Stakeholders and offshore wind developers like Shell need confidence that required transmission upgrades are achievable in the same timescale as wind project delivery to make the necessary investments. Therefore, early planning and coordination amongst the states, system operators, and federal government are essential and need to accelerate. A coordinated approach would consider areas where clusters of generating resources are likely to be located and provide a platform for these resources to interconnect with offshore transmission lines that then deliver high volumes of energy from multiple sources to the onshore grid.

Shell is agnostic whether the transmission solution is built independently or is bundled into projects – but it needs to be planned, and quickly. Parties interested in supporting offshore wind development have vehicles in place that can facilitate integrating efforts with their neighbors, either informally or via existing coordination bodies like NESCOE for the New England states or IPSAC, for example. RTO are required to do this under FERC Order 1000, in any case.

From Shell's perspective, there is not sufficient interregional coordination occurring on this issue at this point in time. The states should be involved with the process and coordinate activity amongst themselves, as well. Collaboration can in principle be an effective way to share learnings quickly and

identify difficult issues that need resolution. The political will to address these challenges will also be necessary.

2. **Are there examples of existing interconnection, merchant transmission, and/or transmission planning processes for accessing remote onshore generation resources that could be adapted to the offshore wind context? If so, how?**

Cost and public acceptance will clearly play roles in getting offshore wind integrated into the grid. Policy approaches that leverage the market and competitive forces can in principle deliver consumers the best deal. For example, Texas used a competitive process to select the transmission companies that built 3,500 miles of transmission lines for the Competitive Renewable Energy Zone project to bring the wind power generated atop remote western mesas to cities in the Central and East Texas.

Siting new transmission facilities triggers the usual challenges related to permitting and local stakeholder concerns. These are not impossible to overcome but they present a very real risk to project delivery. That's why it is important that planning agencies clearly understand whether required transmission upgrades are achievable in the same timescale as the wind project delivery.

3. **What reforms would you recommend that the Commission consider pursuing to facilitate the efficient or cost-effective integration of anticipated offshore wind generation in RTOs/ISOs, including potential modifications of the existing interconnection, merchant transmission, and/or transmission planning processes, or other potential changes?**

System operators screen projects based on economic, reliability and public policy considerations. The injection capacities of second wave lease areas are not yet within queue requests, but are essential to meet the various state ambitions.

RTO/ISOs may be best positioned to develop consensus on many of the tricky issues such as transmission infrastructure, grid connection responsibilities in each market and how to pay for the required upgrades, but they must make this a focus and move with speed.

A fair question to ask is whether RTO/ISO rules related to interconnections adequately support the ability of the states to achieve their offshore wind (OSW) ambitions. System operators need to be encouraged to develop innovative, durable tariff amendments that provide efficient transmission-interconnection solutions. We are agnostic whether these are best delivered by an independent transmission developer or by bundled projects. The radial line approach simply is not sustainable.

If the states genuinely intend to achieve their OSW goals and an issue is identified with respect to the sufficiency of RTO/ISO tariffs to support these efforts, then from Shell's perspective the system operators should be asking for support from FERC in the integration process. Not only are the states' goals for offshore wind hinging on such an effort, the economic benefits of the wind park development and supply chain investments will not develop in the face of transmission and interconnection barriers.

The RTO/ISO should be asked to provide information, if they have not already done so, as to how their rules can accommodate a coordinated approach, especially on an interregional basis, and efforts they

have or intend to make to facilitate such approaches. This directive could be based on a finding by FERC that the system operators need to do more, or even give priority to, projects that coordinate the integration of OSW. Such a finding would be based on the public interest given the ambitions of states in this area. In addition, the Commission should seek the input of states about how they plan to support these efforts given their OSW goals.

We recognize that the technical and market issues that need to be considered go beyond the grant of a project interconnection request and a tariff. In particular, FERC has the ability to help improve transparency on the RTO/ISOs decision criteria and help to drive a coherent approach to evaluate benefits and monitor and track projects and stakeholder engagement.

FERC should work with the RTO/ISOs and states to develop an understanding of the opportunities for interregional cooperation and the unique barriers that current RTO/ISO tariffs present for OSW integration and the options available to work with RTO and states to achieve this.

For example, FERC could request post conference comments from interested parties on the elements that should be included in RTO/ISO tariffs and then FERC can issue a policy statement that outlines what elements RTO/ISO tariffs should include for the efficient integration for OSW resources and have them explain how their tariffs meet these elements. If the tariff fails to meet these standards, they could require updates to tariffs that address backbone transmission for OSW and modifications to the interconnection queue process that recognize the consumer benefits and efficiency of a coordinated approach. FERC's issuance of Order No. 2222 is an example of the process FERC could follow.

4. **Are there existing or anticipated state legislative efforts related to transmission development for offshore wind generation? Are these efforts consistent with existing RTO/ISO tariffs and the Commission's existing regulatory frameworks?**

Massachusetts' example illustrates the benefits when state legislature plan for transmission development. The Commonwealth's 2018 Act to Advance Clean Energy included a requirement for the Department of Energy Resources to study offshore wind transmission. Along with the required study, DOER conducted a technical conference to invite stakeholder comments. This conference led to the perhaps unsurprising conclusion that planning and procurement at state level might not give the best system outcome. DOER will consequently assess whether to increase the size of their 2021 procurement so that developers can propose different types of cabling technology (e.g. high voltage direct current cables), and better align capacity with the ISO-NE requirements regarding the maximum capacity for onshore interconnection.

In New York State, NYSERDA and its state partners are studying alternatives for an offshore transmission network as well as the onshore transmission upgrades that will be needed to accommodate 9 GW of offshore wind. Shell's believes, based on a study it is close to completing that, from an economic, environmental and engineering perspective, the only solution for New York and the other states is that a coordinated effort will be required. This effort is being made in connection with the New York State's recently enacted Accelerate Renewable Energy Growth and Community Benefit Act that requires certain state agencies to identify upgrades and investments to the electric system that are necessary or

appropriate for the state to timely achieve its overall renewable resource targets which include 9 GW of OSW.

5. **Which aspects of the interconnection, merchant transmission, and/or transmission planning and cost allocation processes related to offshore wind generation used in European markets could be adapted to or inform the U.S. framework?**

Lessons learned from Europe's build-out of OSW systems reveal the importance of transitioning to an ocean-grid, backbone transmission system to ensure the successful implementation of states' OSW mandates. Europe has installed 22 GW of offshore wind capacity over the past 20 years with capacity anticipated to reach 70 GW by 2028.

Specifically, with significant installed and planned OSW capacity, European nations have turned to different forms of centralized transmission that was planned to allow scalability of OSW. While initially relying on radial transmission, these programs were scaled up over time to meet more aggressive goals leading to the development of a centralized backbone structure to allow OSW expansion and to minimize costs.[1] In the instances of leading European nations with significant OSW investments and electricity generation targets, such development has been accompanied by planning, development, and compensation structures.

[1] The one exception to date has been Great Britain where its geography is more conducive to the radial option. However, even in that case, the OSW Study notes Great Britain has begun to see strains on the available interconnection points for its OSW projects, and thus, continuing to use this approach may pose a challenge in determining how to optimize interconnection points to accommodate future projects in the near term. (*See* 2019 OSW Study at 17.)