UNITED STATES OF AMERICA

FEDERAL ENERGY REGULATORY COMMISSION

Offshore Wind Integration in RTOs/ISOs	**)**	**Docket No. AD20-18-000**

POST-TECHNICAL CONFERENCE COMMENTS OF THE AMERICAN CLEAN POWER ASSOCIATION, AMERICANS FOR A CLEAN ENERGY GRID, AND RENEW-NORTHEAST

On October 27, 2020, the Federal Energy Regulation Commission ("FERC" or "Commission") convened a technical conference to discuss whether and how existing transmission planning, interconnection, and merchant transmission facility frameworks in Regional Transmission Organizations/Independent System Operators (RTOs/ISOs) can accommodate anticipated growth in offshore wind generation in an efficient and cost-effective manner that safeguards open access transmission principles, and to consider possible changes or improvements to the current frameworks should they be needed to accommodate such growth. On March 11, 2021, the Commission issued a Notice Inviting Post-Technical Conference Comments on the issues raised in the technical conference.

The American Clean Power Association ("ACP"),[1] Americans for a Clean Energy Grid ("ACEG"),[2] and RENEW-Northeast[3] ("RENEW", collectively, "Clean Energy

[1] ACP is a national trade association representing a broad range of entities with a common interest in encouraging the expansion and facilitation of wind, solar, energy storage, and electric transmission in the United States. On January 1, 2021, the American Wind Energy Association ("AWEA") merged into ACP. Where these comments represent ACP's past filings or comments, including the October 27, 2020 technical conference in this proceeding, they refer to the positions taken by AWEA prior to that date.

[2] Americans for a Clean Energy Grid ("ACEG") is a diverse 501(c)(3) not-for-profit coalition of stakeholders focused on the need to expand, integrate and modernize the high-voltage grid in the United States. The ACEG coalition includes multi-state utilities that develop, own, and operate transmission, trade groups that include transmission owners and transmission equipment manufacturers among their members, renewable energy trade groups and advocates, large buyers of clean energy, organized labor groups, environmental advocacy organizations, and energy policy experts. ACEG seeks to educate the public, opinion leaders, and public officials to the needs and potential of the transmission grid.

[3] RENEW Northeast, Inc. ("RENEW") is a Massachusetts corporation that is tax-exempt under Internal Revenue Code section 501(c)(6). RENEW serves to unite environmental advocates and the renewable

Associations") appreciate the opportunity to comment on the Commission's timely questions.[4] The Commission's notice and the October technical conference record clearly reflect the need to ensure that interconnection and transmission planning regulations can keep pace with the rapid growth in clean energy. The Commission also rightly notes that in many circumstances, potential reforms would be applicable to onshore resources as well.

The Clean Energy Associations urge the Commission to use the imperative for reform and fresh perspective that offshore wind provides to consider holistic transmission planning and interconnection reforms that would ensure that all resources can successfully integrate without excessive planning delays, unreasonable upgrade costs, or uncertainty. While near-term improvements can be made within the current interconnection-focused paradigm – for example, by moving towards a cluster approach, better incorporating state-driven procurements, and increasing flexibility for HVDC projects – durable long-run solutions *require* fundamental improvements to transmission planning.

energy industry for the purpose of coordinating the ideas and resources of its members with the goal of increasing environmentally sustainable energy generation in the Northeast from the region's abundant, indigenous renewable resources. RENEW has focused on highlighting the value of grid-scale resources-specifically offshore and onshore wind, solar, energy storage and hydropower- and the benefits of transmission investment to deliver renewable energy to load centers in the Northeast. RENEW members own and/or are developing large-scale wind, solar, hydropower, energy storage and high-voltage transmission facilities across the Northeast.

[4] The views and opinions expressed in this filing do not necessarily reflect the official position of each of ACP's individual members.

1. Opportunities to Improve the Interconnection Procedures for Offshore Wind Generation

a. Should the relevant RTOs/ISOs consider revising their Large Generator Interconnection Procedures/Large Generator Interconnection Agreements (LGIP/LGIA) to facilitate more economically efficient transmission expansion and network upgrades to integrate offshore wind generation? If so, why and what specific revisions would be beneficial for which RTO/ISO LGIP and/or LGIA?

Response:

The offshore wind projects currently under development, which have been selected in state solicitations, have identified viable interconnection opportunities under the currently-effective LGIP/LGIA framework. However, given the size and location of call and lease areas for future projects (and ever-increasing state policy goals for offshore wind), the finite number of similar economic opportunities are likely to limit further offshore development. One essential change is for a shift away from generation-specific pathways, to either a more generic framework capable of considering both generators and transmission platforms, or differentiated pathways within an overall "Interconnection Procedures" and "Interconnection Agreement."

Additionally, as reflected elsewhere in these comments, the size and cost of onshore network upgrades needed to accommodate tens of gigawatts of offshore wind in coming years make clear that these network upgrades would be best managed through long-term, pro-active transmission planning. Placing the costs of these onshore upgrades solely on individual generators based upon "but-for" causation is both inequitable (as upgraded facilities will benefit all customers through lower wholesale energy prices) and illogical (because the projects, and the associated onshore network upgrades, are driven by state policies).

The Clean Energy Associations note several aspects of current LGIP/LGIA frameworks that may require changes in the near future.

PJM: First, the Clean Energy Associations note that the PJM State Agreement Approach is currently progressing for New Jersey as the state plans for 7,500 MW of

offshore wind.[5] Although the State Agreement Approach allocates all costs to the state sponsor(s) (and fails to recognize benefits or allocate costs beyond the sponsoring state(s)), its use in this case still represents a step forward in terms of being able to consider a wide range of on- and offshore transmission solutions to integrate future renewable energy deployment. While New Jersey indicated its intent was not to affect the interconnection method for the state's first two rounds of offshore wind projects,[6] PJM has not yet provided certainty that the existing queue positions and studies for these initial projects will not be affected.[7] As the SAA process moves forward, the Clean Energy Associations recommend that 1) PJM clarify that the initial rounds of offshore wind can connect to the grid as planned, with reasonable certainty on costs and timing, as New Jersey has proposed, and 2) FERC ensure that states, utilities, and RTOs/ISOs are simultaneously conducting long-term planning to ensure the cost-effective integration of orders of magnitude more offshore wind generation in the future.

ISO-NE: Second, ISO-New England's requirement that interconnection customers pay the "full annual cost" of interconnection-related network upgrades "including federal and state income taxes, [operations and maintenance, "O&M"] and [administrative & general] expenses, annual property taxes and other related costs"[8], imposed under Schedule 11 of its Open Access Transmission Tariff, can pose challenges to offshore wind integration. Under these annual charges, an interconnection customer –

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[5] *See NJBPU Announces Major Step Forward in Offshore Wind Goals with Launch of First-of-its-Kind Competitive Solicitation* (Apr. 15, 2021) https://www.nj.gov/bpu/newsroom/2021/approved/20210415.html

[6] *See*
Order, In the Matter of Offshore Wind Transmission, New Jersey Board of Public Utilities, Docket No. QO20100630 at 7 (Nov. 18, 2020) https://www.nj.gov/bpu/pdf/boardorders/2020/20201118/8D%20-%20ORDER%20Offshore%20Wind%20Transmission.pdf ("Staff notes that the exploration of coordinated transmission alternatives through the SAA does not impact the way the first OSW project, awarded to Orsted's Ocean Wind 1,100 MW project, interconnects to the transmission system. That project will interconnect as delineated in the applicable orders. The same is true for bidders in the Board's second offshore wind solicitation, who will interconnect to the transmission system per the solicitation documents.").

[7] *See e.g. 2021 State Agreement Approach (SAA) Proposal Window to Support New Jersey Offshore Wind*, PJM Transmission Expansion Advisory Committee at 19 (May 5, 2021) https://pjm.com/-/media/committees-groups/committees/teac/2021/20210505-special/20210505-item-01-new-jersey-offshore-wind-proposal-window.ashx (Citing "Synergies with ongoing solicitations" as a benefit of the SAA, but failing to provide detail on what those synergies would be and how they would be realized).

[8] ISO-NE Open Access Transmission Tariff, Schedule 11, Section (1)(5).

separately from network upgrade costs – becomes responsible for the long-term O&M costs that would be incurred for transmission facilities, which the Clean Energy Associations understand can include certain existing facilities. This is despite a lack of "but-for" causation defined by Order No. 2003.[9] Given the scope of network upgrades that may fit within a traditional "but-for" causation framework, the addition of *further* charges for facilities the interconnection customer did not construct, or facilities which would benefit other customers on the network, may harm the ability of projects to move forward. As this is not practice in other regions, O&M Costs related to network upgrades funded by interconnection customers under the ISO-NE Tariff should be recovered in transmission rates and not directly assigned to interconnection customers.

Additionally, ISO-NE restricts new interconnections to a 1,200-megawatt single contingency limit to protect neighboring control areas from the impact of losing too much supply at once.[10] Given the scale at which offshore wind development will be taking place, the region should explore all options to enabling developers to build fewer, larger projects more cost effectively while reducing environmental impacts. Respecting the 1,200-megawatt limit would, for example, require at least seven separate undersea circuits to interconnect 8,000 megawatts of offshore wind to southeast New England. If the 1,200-megawatt limit on new interconnections were raised to 1,600 megawatts, which is the size of the upcoming Massachusetts procurement, offshore wind projects could capture further economies of scale. In her presentation to the New England States, Dr. Biljana Stojkovska from National Grid showed that optimized transmission planning in the United Kingdom would in some cases utilize 1,500 to 1,800 megawatt HVDC circuits

[9] *See* Order No. 2003, Standardization of Generator Interconnection Agreements & Procs., 104 FERC ¶ 61103 at PP693-703 (2003).

[10] For example, when ISO performed a cluster study for interconnecting Northern Maine wind generation, the cluster size was limited to 1,200 megawatts despite approximately 2,000 megawatts of wind being in the interconnection queue. When ISO evaluated the transmission needs for interconnecting offshore wind as part of the NESCOE 2019 offshore wind economic study, each undersea circuit bringing power to shore was limited to a maximum of 1,200 megawatts.

to interconnect offshore wind.[11] Utilizing these larger circuits in certain situations resulted in lower costs and reduced environmental impact by reducing the sheer number of circuits needed.

Despite the restrictions on new interconnections, three existing resources are regularly allowed to supply more than 1,200 megawatts of energy to New England (in some cases well over 1,200 megawatts) as ISO-NE can coordinate its operating plan with its neighboring regions to maximize their use. Given the increasing frequency with which ISO-NE allows these resources to operate above 1,200 megawatts, the region should revisit the need to restrict new interconnections to 1,200 megawatts for other resources. ISO-NE and its neighboring regions should determine what upgrades would be required to raise the 1,200-megawatt limit. If more cost-effective development of new offshore wind, imports, and onshore wind and solar resources can be achieved by raising this limit, investments that would allow raising the limit may lower overall costs for the region.

Additionally, as noted below, the interconnection process should provide developers with flexibility in meeting system upgrade requirements. For example, an offshore wind generator should be able to pair with a battery as an alternative to making system upgrades. In ISO-NE, limitations on interconnecting additional generation without major transmission system upgrades are beginning to impose serious limitation on offshore wind interconnections.[12] As offshore wind generation often does not operate at its maximum output level[13], and as battery costs continue to decline, it may be more

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[11] Biljana Stojkovska, *UK's analysis in planning for offshore network to meet clean energy goals*, New England States Transmission Technical Forum (Feb. 2, 2021), https://newenglandenergyvision.files.wordpress.com/2021/02/bstojkovska-02-02-2021-draft.pptx

[12] *See* Cape Cod Resource Integration Study - Preliminary Results presentation made by ISO-NE at the March 17, 2021 Planning Advisory Committee meeting, https://smd.iso-ne.com/operations-services/ceii/pac/2021/03/a7_cape_cod_resource_integration_study_ceii.pdf (showing that the Cape Cod cluster study would be limited to 1,200 MW of offshore wind, despite queue positions for 2,887 MW of offshore wind proposing to interconnect to this area).

[13] *See* ISO-NE 2020 data, https://www.iso-ne.com/static-assets/documents/2020/09/2020_iso_ne_variable_energy_resource_ver_data_series_2000_2019_rev3.zip (showing that the over the 20-year period from 2000 – 2019, the planned offshore wind fleet off the coast of southeast New England would have been expected to operate at full output (>99% of its maximum capability) in just under 16% of hours).

cost effective to use a battery to time-shift this output when it occurs rather than to make very large transmission system upgrades. The ISO-NE interconnection process does not currently allow for alternative options like this.

CAISO: Third, the Clean Energy Associations note that CAISO's commercial viability criteria for retention of deliverability beyond seven years[14] should be relaxed for offshore wind resources. Scale and the time horizon for offshore wind development are different compared to other resources in the interconnection queue; the interconnection process did not envision more than seven years of resource development cycle.

Finally, and more broadly, the Clean Energy Associations note that the use of serial interconnection studies can exacerbate the free-rider problem in regions beyond what exists with a cluster study approach (such as PJM). In a cluster approach, if one customer pays for upgrades, other generators in the same cluster must provide reimbursement if they use these upgrades.[15] A free rider problem can still exist with cluster study approaches in other regions given future clusters and needs (which may not pay for upgrades developed in a previous cluster). However, under a serial approach, the free rider problem is especially pronounced as some customers overpay when their project triggers an upgrade from which others will benefit. Although this process is not unique to offshore wind, the problem is particularly salient there because of the limited number of coast-adjacent interconnection points; additionally, the large scale of a cost-efficient offshore wind project is often large enough to trigger the need for sizable network upgrades to the on-shore transmission system.

b. What are the pros and cons of allowing a state to submit a single interconnection request as a placeholder for the winner of a specific offshore wind generating solicitation as compared to every developer participating in a state solicitation entering the queue individually? If

[14] *See* CAISO Tariff Appendix DD, Section 6.7.4.

[15] One example of how this can be addressed is in ISO-NE's OATT Schedule 11. ISO-NE's "late comer provisions" provide for reimbursement of Cluster-Enabling Transmission Upgrade ("CETU") costs to Interconnection Customers in the cluster by certain Interconnection Customers with resources that utilize the CETU to interconnect within ten years after the original CETU funding.

such an approach is feasible, what type of information would the state need to include in its solicitation process to ensure it satisfies the requirements of the RTO/ISO generator interconnection procedures? If this approach is not feasible, should changes be made to the existing generator interconnection procedures to enable this or a similar approach? If so, please explain what changes should be made and why. How would such an approach, if implemented, impact other generators in the interconnection queue? What are the opportunities to minimize such impacts on other generators in the interconnection queue? Similarly, how would such an approach impact existing interconnection queue procedures and agreements?

Response:

The Clean Energy Associations believe that the concept of allowing states to "reserve" interconnection rights based upon upcoming offshore wind solicitations deserves further inquiry. This approach could have merit in certain circumstances - particularly where a state is paying for the network upgrades under using a SAA or Order 1000 public policy process approach – and may be applicable beyond offshore wind. However, the Commission should carefully consider precisely which circumstances would warrant such a reservation, and should seek to prevent unintended consequences.

The circumstances where such an approach might be considered could include a state's overriding public policy or reliability need requiring use of a specific point of interconnection or preservation of deliverability rights. This may be particularly valuable in situations where fossil or nuclear generation is retiring, and a state policy or reliability need would benefit from the specific use of transmission or interconnection facilities near that generator; the most prominent example the Clean Energy Associations are aware of is Diablo Canyon, which will retire in 2025[16] and would provide a valuable point of interconnection with significant transfer capability on the California coast. The Commission should consider several factors, including:

- The clarity and specificity of a public policy need. For example, a state procurement goal of a particular quantity offshore wind by a date certain, codified

[16] *See Decision Approving Retirement of Diablo Canyon Nuclear Power Plant*, Calif. Pub. Utils. Comm'n (Jan. 11, 2018) http://docs.cpuc.ca.gov/PublishedDocs/Published/G000/M205/K090/205090240.PDF.

in statute, regulation, or directives from a state agency related to transmission planning needs, would provide reasonable certainty as to when and why reservation of rights might be appropriate. Such reservations should be linked to a specific procurement and should not be purely speculative.[17]

- Clear timing requirements for conducting an RFP or other process to procure resources. In situations where a "state reservation" policy might be appropriate, scarce interconnection and deliverability rights should not be held indefinitely. Instead, states should be able to propose a date certain, and if an RFP is not conducted by that date the rights would become generally available.
- Requirement to coordinate with interconnection customers, and update inputs as appropriate. Should the Commission adopt or allow this approach, it should ensure that the State continue to work with interconnection customers throughout the procurement process, or leave a flexible option for developers to identify their own outcome regarding interconnection. A state reservation should not create path dependency forcing projects to suboptimal interconnection locations; for example, if an existing resource opts to retire and frees up transmission capability, any state "reservation" should be sufficiently flexible to account for this change and encourage optimal interconnection solutions.
- Implications for projects with pre-existing interconnection queue positions. Depending upon the amount of lead time before a state's RFP will be completed, other projects with pre-existing queue positions relative to that of the state – or participating in the same cluster - could be impacted. As noted above, the Clean Energy Associations support interconnection and transmission reforms that hold interconnection customers with pre-existing queue positions harmless as much as possible.
- Linkage to public policy transmission, and transmission planning more broadly. Should a state reserve interconnection capability to further its public policy, the

[17] See October 27 Technical Conference Tr. At 207-08, Silverman (referencing potential 15-year reservation of rights based on New Jersey statutory procurement requirements for offshore wind).

RTO/ISO should evaluate any network upgrades associated with that reservation of transmission facilities and conduct a full analysis of benefits and beneficiaries. While, as noted above allotting costs between multiple interconnection customers is preferable to placing the sole burden on individual projects, a true transmission planning approach – which identifies all beneficiaries, not just interconnection customers – is the key long-term solution. The Clean Energy Associations thus submit that the lead time for use of a reservation option should be substantial, in part so that any interconnection upgrades can be evaluated through the transmission planning process.

c. *Is a clustering or shared network upgrade approach necessary or desirable for offshore wind generation projects, given the uniquely location-constrained nature of offshore wind generation and associated interconnection facilities and network upgrades?*

Response:

Within the currently prevailing participant funding paradigm, in which generators are almost entirely responsible for network upgrade costs, a cluster approach has proven preferable to a sequential process based upon members' experience. While viable points of interconnection for offshore wind are often scarcer than for onshore renewables, this is only a difference of degree rather than kind. Accordingly, the Commission should require a cluster interconnection process at a minimum – but should also put in place a pro-active long term planning process as a best practice for both offshore wind and onshore renewables.

More specifically, a serial interconnection process increases the risk of a free-rider problem for projects that successfully move through the queue, as they may not be compensated for funding upgrades that subsequent projects use. Additionally, attrition in the queue results in significant restudies when serially queued projects exit, which can affect every later-queued project in the same area. Moreover, serial studies often result in sub-optimal transmission solutions as they miss opportunities to realize economies of scale from larger upgrades that can accommodate multiple projects.

Finally, while in the experience of the Clean Energy Associations' members a clustered interconnection process is preferable to a serial project-by-project approach, the long-term solution must be a transition from participant funding to the transmission planning process as the primary mechanism for planning and paying for new transmission. Clustering may still produce upgrades that are too expensive for generators to fund, and fails to recognize that an enhanced transmission grid benefits all participants. This process should also support location-constrained resource interconnection network facilities that provide a financially viable path for the interconnection of one or more projects in resource-rich areas, *e.g.* an undersea trunk cable to access locationally constrained offshore resources. In California, this approach was used successfully in the development of the Tehachapi Renewable Transmission Project, which allowed for the cost-effective interconnection of close to 5,000 MW of renewable energy projects.[18] Ultimately, interconnection must be linked to the transmission planning process (including accounting for state public policies, as well as economic and reliability benefits).

d. Are there barriers, either due to system design/configuration or as a result of modeling deficiencies, that prevent transmission planners from accurately determining that offshore wind resources can provide essential reliability services, such as frequency response as required by FERC Order No. 842?

Response:

RTOs/ISOs (and non-RTO/ISO transmission providers) vary greatly in their ability to account for the highly flexible attributes of inverter-based resources. In some cases, this can be due to system design and configuration, or modeling differences; in

[18] *See California Indep. Sys. Operator Corp*., 119 FERC ¶ 61061 at P62 (2007)(approving transmission-first approach, and noting "The difficulties faced by generation developers seeking to interconnect location-constrained resources are real, are distinguishable from those faced by other generation developers, and such impediments can thwart the efficient development of infrastructure. In this regard, we find that the CAISO's proposal is an appropriate mechanism to accommodate the unique characteristics of location-constrained resources and that doing so does not constitute undue discrimination against other generators.").

others, it is simply a matter of policy. For example, the Mid-Continent Independent System Operator ("MISO") simply has a blanket prohibition on Dispatchable Intermittent Resources (such as wind) providing certain essential reliability services – which the Commission has rejected elsewhere.[19] Several analyses have shown that variable inverter-based renewables are perfectly capable of providing these services.[20]

Consistent with the logic of Order No. 841,[21] the Clean Energy Associations believe that all resources should be allowed to provide, and compensated for, all services they are physically capable of providing. A logical corollary is that transmission planners should be required to account for the actual capabilities of variable energy resources and inverter-based resources, including offshore wind, when identifying needs for essential reliability services. For example, recent studies show that offshore wind – in the appropriate back-to-back converter configuration – can successfully provide black start services.[22] Offshore wind plants are also capable of providing voltage and reactive power control, frequency response, and other services, though they may not always be the lowest-cost sources of these services. The Clean Energy Associations urge the

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[19] *See,* MISO BPM-002-r19, at 145 ("DIRs are not eligible to provide Operating Reserves to the Day-Ahead or Real-Time Energy and Operating Reserves Markets. For this reason, DIRs do not submit Dispatch Statuses for Regulating, Spinning, On-Line Supplemental, or Off-line Supplemental Reserves"); *see also id*. at 94 ("[DIRs] . . . do not provide Dispatch Statuses for Operating Reserve products"); *id*. at 76 (Exhibit 1-7). *Compare with Iso New England Inc., New England Power Pool Participants Comm.,* 152 FERC ¶ 61065 at P25 (2015)("RENEW and SunEdison argue that ISO-NE should not add Tariff language that explicitly excludes intermittent resources from the regulation and reserves markets. We find that ISO-NE has not sufficiently justified the addition to its Tariff of a blanket exclusion of DNE Dispatchable Generators from the regulation and reserves markets. We agree with RENEW and SunEdison that eligibility for providing these services should be based on capability and performance characteristics rather than categorical exclusions. Accordingly, we reject this proposed tariff provision.").

[20] *See* California ISO, National Renewable Energy Laboratory, and Avangrid Renewables, "Demonstration of Capability to Provide Essential Grid Services," (March 2020); California ISO, National Renewable Energy Laboratory, and First Solar, "Using Renewables to Operate a Low-Carbon Grid: Demonstration of Advanced Reliability Services from a Utility-scale Solar PV Plant," (November 2017).

[21] *See* Order No. 841, Elec. Storage Participation in Markets Operated by Reg'l Transmission Organizations & Indep. Sys. Operators, 162 FERC ¶ 61127 (2018)("[T]he tariff provisions for the participation model for electric storage resources must …ensure that a resource using the participation model for electric storage resources is eligible to provide all capacity, energy, and ancillary services that it is technically capable of providing in the RTO/ISO markets…").

[22] Craig Richard, *Offshore wind-powered interconnector 'black starts' grid*, Windpower Monthly, (Dec. 10, 2020), https://www.windpowermonthly.com/article/1702456/offshore-wind-powered-interconnector-black-starts-grid.

Commission to ensure that RTOs/ISOs account for the full capabilities of advanced energy resources in both markets and transmission planning.

e. How do changes to turbine technology, turbine size, or the offshore collector system impact network upgrades needed by interconnection customers, and how can these impacts be handled in a way that does not unreasonably delay interconnection of offshore wind resources?

Response:

The Clean Energy Associations believe that the key to successfully integrating tens (if not hundreds) of gigawatts of offshore wind will be sizing the infrastructure appropriately, and that this can best be accomplished through the transmission planning process. As noted at the October technical conference, offshore wind and transmission technologies are evolving rapidly.[23] Individual turbines can produce higher output at higher capacity factors.[24] However, upgrading subsea facilities can be extremely expensive and impractical where it is possible at all.[25] Coordinating transmission development over the long term can ensure timely interconnection. The Commission should ensure that as more and larger offshore wind projects move forward, all parties have appropriate incentives to future proof-interconnection facilities in a modular fashion to inject more power in anticipation of higher production driven by technology advancements. Put simply, transmission facilities for offshore wind – particularly the subsea and offshore substation facilities – should be built to enable rather than foreclose future options. By planning and building transmission appropriately ahead of time, future projects can move forward without undue expense or delay. As noted above, this should not affect the ability for projects in initial rounds to move forward based upon their identified cost-effective points of interconnection and required upgrades, but should be very much in mind for the longer run.

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[23] *See* Tr. At 60-61, Hitt.
[24] Tr. At 24-25, Tabak.
[25] Tr. At 208, Paradise ("one of the key problems is you can't just go and upgrade something at the bottom of the ocean. It's a much bigger challenge, so you really do want to make sure that whatever you're building on that first go is sized appropriately.").

Because offshore wind technology is evolving quickly, developers should be able to make changes to their proposed facility without triggering new generator interconnection studies, where those changes do not fundamentally change the electrical properties at the point of interconnection The Clean Energy Associations note that this is consistent with Order No. 845, which required interconnection procedures to allow for technological improvements without being considered a "material modification" requiring restudies.[26] To address any concerns about different technologies being used, offshore wind developers should be allowed to adjust generator and plant controls or install new equipment to allow the plant to perform as expected at the Point of Interconnection; this flexibility should apply to onshore interconnection customers as well.

Where a strong transmission system is planned ahead of time, it can more easily accommodate project changes (e.g., newer turbine technology), without becoming a material modification that causes significant delays through loss of queue position. If long term transmission planning were done in anticipation of offshore wind interconnections, this would likely result in conditions that make it easier for projects to make design changes that account for the latest technology and associated cost savings without being considered material.

2. Incorporating State Policies into RTO/ISO Transmission Planning and Interconnection Processes

a. Do existing RTO/ISO transmission planning processes, which are required to consider transmission needs driven by public policy requirements, accommodate states that seek to collaborate with the RTO/ISO to identify and advance planned transmission projects to efficiently and cost-effectively integrate offshore wind generation?

[26] *See Reform of Generator Interconnection Procs. & Agreements*, 163 FERC ¶ 61043 at P518 (2018)("We require transmission providers to include in their *pro forma* LGIP a technological change procedure. They must also assess, and if necessary, study whether proposed technological advancements can be incorporated into interconnection requests without triggering the material modification provisions of the *pro forma* LGIP. Furthermore, transmission providers must, consistent with the guidance provided in this Final Rule, develop a definition of permissible technological advancement. Such permissible technological advancements would, by definition, not constitute material modifications.").

Are the existing processes adequate, or should they be reformed to better accommodate state initiatives?

Response:

Existing state transmission planning processes are inadequate to plan the system for a renewable energy future. A new approach for planning future transmission to deliver gigawatts of renewable energy to load centers should start with a comprehensive, periodic analysis for grid planning decisions.[27] Planning will need to consider how to deliver this clean energy while minimizing bottlenecks that could cause congestion and potential curtailment. Any analysis should consider the long-term benefits and costs, and not merely short-term factors.

Despite Order No. 1000's requirement that RTO/ISO transmission planning processes "consider" state public policies,[28] the implementation of this requirement has been notably ineffective. Most notably, the Order No. 1000 framework treats consideration of state public policies as distinct from economic and reliability-driven projects;[29] in practice, this has resulted in public policy transmission projects failing to be proposed, much less constructed. This concern is heightened in multi-state RTO/ISOs, where New Jersey and PJM's effort to use the State Agreement Approach – an option that is outside of the public policy transmission process – is the only significant initiative in the past decade specifically effectuating state public policies. Even in single-state RTOs, public policy transmission planning has been insufficient. For example, in California, the transmission planning process ("TPP") in CAISO is informed by public policy. However, there is room for significant improvement in the integration between

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27 For example, the New England states are seeking a scenario-based planning tool to inform "the potential use of transmission to integrate all of the necessary energy resources in the region at the lowest cost possible" NESCOE Vision Statement (Oct. 2020), https://nescoe.com/resource-center/vision-stmt-oct2020/.

28 *See* Order No. 1000, *Transmission Plan. & Cost Allocation by Transmission Owning & Operating Pub. Utilities*, 136 FERC ¶ 61051 at P203 (2011)("The Commission requires public utility transmission providers to amend their OATTs to describe procedures that provide for the consideration of transmission needs driven by Public Policy Requirements in the local and regional transmission planning processes.").

29 *See Planning for the Future: FERC's Opportunity to Spur More Cost-Effective Transmission Infrastructure*, Americans for a Clean Energy Grid at 32-33 (2021), https://cleanenergygrid.org/wp-content/uploads/2021/01/ACEG_Planning-for-the-Future1.pdf.

the CAISO TPP and the Integrated Resource Planning process at the California Public Utilities Commission. So far, the process has not proven that it can cost-effectively evaluate and plan for offshore wind generation, and has struggled to address integration of other onshore resources which may require a significant transmission build-out.

The Clean Energy Associations recommend that the Commission require long-term, co-optimized consideration of all transmission needs and benefits, so that public policy and generator interconnection needs are considered simultaneously with economic and reliability needs. This will ensure that all regional transmission needs—not only for reliability and economics but also for public policy—are met as cost-effectively as possible and will support the effective development of transmission infrastructure enabling interconnection of offshore wind (as well as onshore renewables). Given the scale of upgrades needed to interconnect offshore wind, failure to consider economic and reliability benefits when designing those upgrades will result in sub-optimal transmission solutions that increase customer costs over the long term.

b. Are states acting to promote the development of adequate transmission to support the integration of offshore wind generation that they plan to procure? Do current state procurement processes favor the development of Interconnection Customer Interconnection Facilities and Network Upgrades developed in tandem with a new generator interconnection request and sized to accommodate a single generation facility? What, if any, changes to the state procurement processes for offshore wind generation are states considering related to the development of comprehensive interconnection and transmission solutions for offshore wind generation? Can the existing generator interconnection procedures accommodate different state procurement processes for offshore wind? If not, should they and how?

Response:

Yes, states are beginning to take action to promote development of transmission to enable offshore wind to successfully integrate. The procurement frameworks used to date have resulted in selection of upgrades sized for a single generation facility, but this is in part due to the size of the solicitations relative to the available points of

interconnection. A coordinated transmission approach may not be economical for a solicitation that considers only a portion of a state's overall offshore wind goal, but it becomes far more viable when the portfolio is considered as a whole. While a project-by-project interconnection approach will work effectively for initial rounds of offshore wind, states are taking a lead role in re-envisioning the transmission planning and interconnection framework to support thousands of megawatts of subsequent offshore wind generation.

New Jersey and New York are taking a lead role through very different routes. New Jersey, as noted above, is collaborating with PJM to develop transmission consistent with 7,500 MW of offshore wind.[30] New York has commenced a state-driven approach to identify transmission needs consistent with the Climate Leadership and Community Protection Act, [31] which includes eventual state goals of 9,000 MW of offshore wind.[32]

California's existing procurement and interconnection processes are not well-positioned to drive adequate transmission for offshore wind. The current procurement and generator interconnection processes do not favor parallel development of upgrades for a single "placeholder" resource that has not yet been procured. However, CAISO's generation interconnection process could conceivably accommodate a distinct offshore procurement with some changes to the CAISO tariff language.

As state offshore wind solicitations grow, some tensions with current interconnection and transmission planning regimes are becoming apparent. In most cases, the study assumptions for the interconnection and transmission planning processes

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[30] *See* n.5-6 and accompanying text, *supra.*

[31] *See e.g.* New York Public Service Comm'n, Notice of Technical Conference, Docket No. 20-E-0197 (Apr. 21, 2021), http://documents.dps.ny.gov/public/Common/ViewDoc.aspx?DocRefId={D5D8E776-02C7-4CCE-B534-B4ADB550E00D} (announcing technical conference to discuss "headroom, or the projected capability of the local transmission and distribution systems to support additional renewable energy generation, for the purpose of evaluating the Climate Leadership and Community Protection Act benefits of potential system upgrades.").

[32] *See e.g.* New York Public Service Comm'n, Notice of Technical Conference, Docket No. 20-E-0197 at 1-2 (May 14, 2020)(Initiating transmission planning proceeding, because "The CLCPA requires…the addition of 9 Gigawatts (GW) of offshore wind generation to the energy portfolio by 2035… [A]chieving the CLCPA climate protection targets requires restructuring and repurposing the State's electric transmission and distribution infrastructure.")

are not harmonized. Because of differences in the way that RTOs/ISOs administer the planning process and the way they administer the interconnection process, reliability issues that have not been identified in the regional planning process unexpectedly emerge in the course of the interconnection process. The result is that interconnection customers end up developing the system piecemeal, while regional and interregional planning processes are anemic. Harmonization of interconnection and transmission planning study assumptions thus represents a logical step forward.

Additionally, some regions can improve the inclusion of plausible scenarios for offshore wind development to warrant expansion of transmission lines, simply from an economic cost-benefit ratio basis. The Commission should ensure that RTOs/ISOs make consistent assumptions on topics such as forecasted capacity prices within load pockets and thermal generation retirements to ensure they are in line with state clean energy laws. This will bolster the case for much-needed transmission line investments, which in turn will reduce the burden on individual generators and enable timely interconnection. At a minimum, offshore wind development necessary to meet state mandates should be accounted for (and its expected transmission needs met) in RTO/ISO transmission planning processes. The development of these resources is nearly certain because they are required to meet state mandates, and in most instances the locations of planned resource additions are known because they are dictated by the Bureau of Ocean Management's determinations of lease areas.

c. *Several conference panelists stated that transmission planned to accommodate anticipated offshore wind generation does not fit neatly into the existing regional transmission planning categories (i.e., reliability, economic and public policy). What are the barriers, if any, to developing transmission solutions to more efficiently or cost-effectively integrate offshore wind generation? Do these barriers differ by region, and if so, how? Can RTO/ISO existing transmission planning processes incorporate state offshore wind generation laws or regulations as transmission needs driven by public policy requirements? If so, how? If not, why, should they, are the challenges unique to offshore wind, and what specific changes could be made to*

better accommodate transmission needs driven by state laws and regulations related to offshore wind generation?

Response:

Current transmission planning processes do not account for state policy goals requiring the addition of gigawatts of offshore wind. As noted above, the Order No. 1000 paradigm of segmenting transmission into economic, reliability, and public policy "buckets" has not proven successful in overcoming challenges of a planning system not designed for significant additions of renewable resources. The public policy aspects of transmission necessary to integrate offshore wind heighten this problem, but these issues are salient for onshore transmission planning as well. As previously discussed, the Commission should require simultaneous co-optimization of all transmission needs and benefits, rather than dividing these areas. The Clean Energy Associations note that transmission replacement planning should be incorporated into this discussion, as in many circumstances it may be economical to incorporate upgrades with a planned replacement of existing transmission facilities to realize efficiencies.

The Clean Energy Associations also note that states have been reluctant to use the public policy transmission planning process in multi-state RTOs/ISOs in part because once this process is triggered, states may lose some ability to steer the outcome. For example, in ISO-NE the New England states have been clear that they want more say. The Clean Energy Associations are aware that NESCOE has proposed enhancements that would better link New England's public policy transmission planning with reliability planning,[33] and urges the Commission to help ensure that states have sufficient input and oversight in both the process and outcome of transmission planning to fully utilize it. The Clean Energy Associations note that in a co-optimized planning framework, states should be able to meaningfully impact the process and outcome, but that this must be balanced with the need to ensure that transmission satisfies non-public policy needs as

[33] See https://www.iso-ne.com/static-assets/documents/2021/04/a5_nescoe_overlay_network_expansion_transmission_concept_for_discussion.pdf

well. While striking the appropriate balance will not be easy and will necessarily evolve over time, a process that states are loath to use – as is the case today – clearly is ineffective.

Finally, the Clean Energy Associations note that as federal public policy on electric generation and transmission develops, the Commission should incorporate federal public policy in transmission planning as appropriate. This should apply to areas like specific offshore wind goals (such as the Biden Administration's goal of 30 gigawatts of offshore wind by 2030),[34] as well as onshore renewable energy policies such as the Energy Act of 2020's goal of 25 gigawatts of renewables on public lands by 2025.[35] Coordinated transmission planning is key to attaining federal as well as state public policy goals.

d. Panelists noted that, due to limitations on the ability of states and other stakeholders to provide input, there are challenges within the public policy transmission planning processes in multi-state RTOs/ISOs with respect to developing the transmission needed to integrate offshore wind generation. What are these challenges? Are they unique to offshore wind, or do they exist more broadly? Should RTOs/ISOs consider reforms to evaluate various scenarios of potential planned transmission approaches to accommodate planned offshore wind generation?

Response:

As noted above, public policy transmission needs are given short shrift in Order No. 1000 transmission planning processes, particularly in multi-state RTOs/ISOs. Additionally, regionally planned transmission projects have declined significantly in all categories, with many more projects moving forward as local reliability projects or other, smaller-scale processes. Public policy requirements need to be considered alongside reliability and economic criteria as part of an overall revamped transmission planning process. Transmission projects that help to satisfy public policy goals should be

[34] *See Biden Administration Jumpstarts Offshore Wind Energy Projects to Create Jobs* (Mar. 29, 2021) https://www.whitehouse.gov/briefing-room/statements-releases/2021/03/29/fact-sheet-biden-administration-jumpstarts-offshore-wind-energy-projects-to-create-jobs/.

[35] *See* Consolidated Appropriations Act of 2021, Energy Act of 2020, Sec. 3104(b), P.L. No. 116-68 (2020)

appropriately credited – including "beneficiary pays" cost allocation - where they provide these benefits. This is a salient issue beyond just offshore wind. As one example, ISO-NE's Boston transmission evaluation process was unable to consider nearly all transmission solutions in its RFP – even those aimed at resolving state policy aims – in part because the scoring was limited to meeting reliability needs. [36]

Stakeholders across the Western United States - including regional reliability organizations, and balancing authorities, as well as planning regions across the Western Electricity Coordinating Council ("WECC"), should consider a larger regional market and its implications for offshore wind. Both transmission planning processes and market operations should account for the benefit of diverse renewable resources, including offshore wind, throughout the West. Currently, regional planning in the West evaluates offshore wind resources based on the benefits across only a smaller subset of the WECC footprint; this puts offshore wind resources at a disadvantage, by artificially inflating their apparent costs and failing to acknowledge their complementarity with other variable energy resources such as onshore wind and solar. The interregional planning framework orchestrated via Order No. 1000 does not lend itself well to offshore wind off the West Coast, because most of the potential points of interconnection only connect to one planning region.

e. *Panelists stated that there may be barriers to developing interregional transmission projects to integrate offshore wind generation. How could existing interregional transmission coordination mechanisms be improved to reduce barriers to identifying interregional transmission projects that would integrate offshore wind generation in a more efficient or cost-effective manner? Are these barriers unique to interregional transmission projects to integrate offshore wind generation, or do they exist more broadly? Beyond improving existing interregional transmission coordination mechanisms, are there other ways to more effectively facilitate interregional projects to integrate offshore wind resources?*

[36] *See* https://www.iso-ne.com/static-assets/documents/2020/07/final_boston_2028_rfp_review_of_phase_one_proposals.pdf.

Response:

Interregional transmission planning and cost allocation has been highly ineffective nationwide. The Commission should consider a comprehensive rethink including, but not exclusive to, offshore wind. Current interregional processes are often exercises in "box-checking" where neighboring regions may keep one another informed, but almost never actually move forward with significant interregional projects. The Clean Energy Associations note that many interregional cost allocation debates have been fraught because different RTO/ISOs use different modelling techniques and thresholds for cost-benefit ratios (e.g. between NYISO and PJM). The Commission should encourage RTOs/ISOs to develop both regional and interregional solutions that ensure costs are optimized for transmission that responds to all drivers and to standardize assumptions and benefit measures as much as possible.

In the case of offshore wind, a coordinated, co-optimized interregional transmission planning process would have several benefits. It could help to minimize the number of sea cable connections by requiring coordination among regions; for example, the proposed New York Bight Wind Energy Areas could serve customers in New York, New Jersey (part of PJM), or both[37] – and shared transmission facilities could be effective depending on project configurations. Interregional transmission could also reduce certain barriers in some cases, including cost allocation (due to the larger group of customers that will benefit from those transmission benefits), and potentially reducing cabling needs (which may benefit other ocean users and coastal communities). Revisions to tariffs could also seek to address market seams issues that might make interregional transmission planning undesirable. In ISO-NE, for example, when imports and local dispatchable generation use the same transmission facilities they do not compete on equal footing, creating inefficiencies.

Networked offshore transmission can also provide additional economic and reliability benefits, particularly in highly congested parts of the Northeast grid. While

[37] *See* Bureau of Ocean Energy Management, *New York Bight*, https://www.boem.gov/renewable-energy/state-activities/new-york-bight (last viewed May 10, 2021).

interregional transmission solutions may not ultimately be appropriate for every lease area, the Commission should ensure that all areas have robust, consistent, and timely consideration of interregional options.

f. Do challenges exist to allocating costs of transmission facilities needed to integrate offshore wind resources? If so, what are they? Are they unique to offshore wind, or do they exist more broadly? What are the opportunities to overcome these challenges?

g. How should the cost of network upgrades to interconnect offshore wind generation be assigned? Are existing policies to directly assign costs to the generator(s) appropriate? Why or why not? Alternatively, should the costs be assigned to a broader set of potential beneficiaries? If so, how should such beneficiaries be identified, should those beneficiaries include the offshore wind generator(s), and what would that cost allocation method look like? For network upgrades to interconnect offshore wind generation needed to meet a state law or regulation, should the network upgrade costs be allocated entirely to that state's consumers or would a different cost allocation methodology be more appropriate? Are these questions unique to offshore wind, or do they apply more broadly?

Response:

The Clean Energy Associations provide a combined response to 2.f and 2.g, as the cost allocation of transmission facilities needed to integrate offshore wind is, at present, heavily reliant on interconnection customers paying for these upgrades.[38] The post-Order No. 2003 paradigm of participant funding in most RTOs/ISOs was based upon the assumption that being responsible for upgrade costs would result in generators selecting the most cost-effective locations.[39] This concept at least arguably had some validity in the

[38] The New Jersey-PJM coordination on the State Agreement Approach is the only active process that would use planned transmission rather than interconnection customer-driven upgrades.

[39] See Order No. 2003 at P695 ("[P]roviding transmission service credits to an Interconnection Customer for the cost of Network Upgrades that would not be needed but for the interconnection of the new Generating Facility mutes somewhat the Interconnection Customer's incentive to make an efficient siting decision that takes new transmission costs into account… The Commission believes that, under the right circumstances, a well-designed and independently administered participant funding policy for Network

early 2000s, when most interconnection customers were gas generators without significant locational constraints on resource quality; however, the prevalence of renewables in queues today shows that this assumption is no longer valid.[40] Offshore wind provides a particularly emphatic demonstration of the problems with participant funding, as coastal points of interconnection are often limited, and forcing interconnection customers to bear the full cost does little to incent more economical upgrade solutions where none may be available. In an increasing number of cases, interconnection customers are being asked to pay for high-voltage upgrades that are fundamentally part of the integrated bulk electric system and provide many benefits beyond enabling interconnection of one resource (or even a cluster of resources).

As noted above, the appropriate long-term solution is for the Commission to require jurisdictional utilities to link the transmission planning and interconnection processes. A holistic transmission planning process that considers all benefits and beneficiaries (including to interconnection customers) would identify, plan for, and develop transmission in line with long-term needs, and ensure a degree of coordination that may not be possible on a project-by-project basis.

h. Do existing RTO/ISO processes allow for or facilitate states to jointly initiate planning for transmission to meet their respective policy goals with respect to offshore wind?

Response:

The answer to this question is "yes" in theory, but "no" in practice. Focusing upon multi-state RTOs with offshore wind generation in planning, PJM's State Agreement Approach allows for multiple states to jointly propose projects that satisfy their public policy goals, provided that those states assume the full cost of those projects

Upgrades offers the potential to provide more efficient price signals and a more equitable allocation of costs than the crediting approach.").

[40] *See* Lawrence Berkeley Lab, Generation, Storage, and Hybrid Capacity in Interconnection Queues (2020) https://emp.lbl.gov/generation-storage-and-hybrid-capacity (showing predominance of wind and solar resources in interconnection queues nationwide).

as well. In ISO-NE, the public policy transmission planning process (which has never been used) would apply a 70-30 cost-share, where the proposing states would assume 30% of the project costs while 70% would be regionally allocated on a load-ratio share.[41] However, as noted above, these processes remain little-used, and the Commission should end the practice of treating public policy-driven transmission projects as distinct from other categories of projects, and should instead seek to appropriately allocate costs based upon the full suite of benefits from transmission projects.

3. Quantifying the Potential Benefits of Planned Transmission Solutions for Offshore Wind Integration

a. Several panelists stated that existing transmission planning processes might not capture all the benefits of transmission planned for anticipated offshore wind generation. What benefits, if any, are not currently being captured but should be considered? What quantitative and/or qualitative metrics should be used to evaluate those benefits? Could the existing transmission planning process be improved to better consider the benefits of transmission planned for anticipated offshore wind generation? If so, how?

Response:

Electric transmission provides numerous benefits, most of which are not captured in current transmission planning and cost allocation processes. A 2013 report from the Brattle Group identified numerous transmission benefits not captured by traditional production cost savings, including mitigation of extreme events and weather, reduced need for capacity by capturing resource and load diversity, increased market competitiveness, access to more cost-effective resources, hedging against risk, and environmental benefits.[42] Current transmission planning processes neglect most of these benefits, and silo the benefits that are considered. The Clean Energy Associations support the use of broader, quantifiable benefits as part of the benefit-cost analysis for all

[41] https://www.iso-ne.com/system-planning/transmission-planning/competitive-transmission-projects/about-competitive-transmission-projects

[42] https://wiresgroup.com/wp-content/uploads/2020/12/The-Benefits-of-Electric-Transmission-July-2013.pdf at v.

transmission planning. In the Western US, delivering offshore wind resources directly on 500 kV nodes that are well-connected to rest of the WECC system would result in production cost benefits for the entire Western interconnect. The planning processes responsible for approving adequate transmission only consider the ratepayer impact within planning regions and overlook WECC-wide benefits. (This specific issue was not addressed in FERC Order 1000.) In addition to the planning impacts, this approach will also necessarily affect cost allocation (because costs would be assigned based upon a holistic benefits assessment and corresponding apportionment).

b. Panelists indicated that transmission planning time horizons may need to be expanded given the long lead times for offshore wind generation deployment and the time frames considered by existing state policies, some of which contemplate delivery many years into the future. Are transmission planning process time horizons able to consider the benefits of transmission expansion to accommodate anticipated offshore wind generation? If not, should they be revised? What are the pros and cons of expanding the time horizons for existing transmission planning processes for reliability, economic and public policy projects?

Response:

Given the expected duration of the offshore wind permitting process, the associated transmission planning needs to begin immediately and provide clear information on the shape of the future grid as far out as possible. The Commission should ensure that transmission investment and financing occur early enough that transmission upgrades are aligned with offshore wind development. The Clean Energy Associations note that some transmission investment plans and projects may need to be future-proofed (oversized relative to initial subscription) to ensure they are staged to align with expected commission dates of offshore wind projects; this aspect would be far better aligned with transmission developed through the transmission planning process rather than separate interconnection requests. Additionally, the transmission planning horizon (for both onshore and offshore transmission) should be a minimum of 15 years.

A ten-year planning horizon threatens all three existing categories of transmission planning – reliability, economics, and public policy. Under the existing transmission planning processes, a need for transmission that is more than ten years out is not captured. This leaves inadequate time for development, permitting, financing, and commissioning.

4. Dedicated Transmission Planning Processes for Offshore Wind Integration

a. As discussed in the questions above, panelists identified the challenges associated with capturing the benefits of transmission planned for anticipated offshore wind generation within existing transmission planning processes. Should the Commission consider the concept of a dedicated transmission planning process tailored to anticipated offshore wind generation, and if so, please describe how the Commission could do so? What are the pros and cons of a dedicated transmission planning process versus considering transmission expansion for anticipated offshore wind generation within existing transmission planning processes? If there is a dedicated transmission planning process for offshore wind integration, how should it interact with existing planning processes?

Response:

The Clean Energy Associations submit that a separate interregional process for offshore wind, with federal leadership and steering, may be appropriate. However, it would be important to evaluate the economic and reliability benefits of transmission in such a process, to avoid the concerns about siloed planning that were noted above. This process should not preclude regions from moving forward with implementing reforms, preparing for the currently planned offshore wind targets, and honoring existing interconnection requests. Particularly as lease areas like the New York Bight become available, the Commission needs to ensure that all states and regions capable of receiving electricity from offshore wind resources are in a position to plan for transmission that will drive customer benefits and improve interconnection certainty.

b. *Should a dedicated transmission planning process for anticipated offshore wind generation be conducted on a regional or interregional basis? Please describe the tradeoffs between separate dedicated transmission processes conducted within RTOs/ISOs (i.e., on a regional basis), versus a dedicated interregional transmission coordination process that considers transmission needs across two or more RTOs/ISOs.*

Response:

A dedicated transmission planning process that takes account of future renewables should be conducted both intra- and inter-regionally, but as noted above, the Commission's focus and oversight may be most beneficial for interregional planning. The most common theme for all successful large scale transmission solutions in the past two decades are that they planned ahead. The Tehachapi transmission development in CAISO, Competitive Renewable Energy Zones in ERCOT, and Multi-Value Projects in MISO all accounted for multiple benefits. Further, these projects sought to maximize delivery of projected location-constrained resources and development of strategic energy resource areas. The costs of network facilities (high-voltage trunkline) were not solely borne by generators but were shared across all beneficiaries (in many cases, directly by ratepayers). While the Commission can and should seek to replicate the success of the Tehachapi and MVP projects (focusing on those within its jurisdiction), the Clean Energy Associations note that there has been no comparable initiative on an interregional basis – which requires further consideration of how to make such a process function.

Additionally, as noted above, transmission planning must begin now to successfully integrate the 30GW of projects currently under study. The Commission can ensure implementation of reforms to regional planning more rapidly than interregional planning because the latter (as noted above) requires synchronization of timelines, assumptions, and benefits in multiple jurisdictions. Regional transmission planning should account for more benefits than it does today and should be conducted with awareness of future interconnection needs – and these reforms are comparatively rapid, and would still be highly valuable for years' worth of transmission upgrades.

In both regional and interregional transmission planning, The Clean Energy Associations reiterate that relying solely on the generation interconnection process, which is based on current "iterative project cluster" needs and cost-prohibitive allocation approaches, will make network upgrades either economically infeasible or will unnecessarily increase the cost of capital. The transmission planning process within RTO/ISO regions would be far more effective at evaluating the full suite of benefits from necessary network upgrades, and then allocating these costs to all of the ultimate beneficiaries.

The Western U.S. faces a unique challenge when it comes to an interregional planning process supporting offshore development. The Commission should investigate how the interregional process could be refined to account for benefits of offshore wind infrastructure to planning regions across WECC without having to interconnect to facilities across two or more planning regions.

c. *If a dedicated transmission planning process were to be implemented, how frequently should it be carried out? Should it be carried out on a fixed reoccurring basis, coordinated with state policies on offshore wind generation, or on some other basis?*

Because of the ever-increasing state targets for offshore wind, any dedicated transmission planning process should ideally be coordinated with states. In multi-state RTOs/ISOs such as PJM and ISO-NE, regional transmission planning should encompass all of the offshore wind called for by law or regulation by a fixed date. This would enable consideration of cost-effective, highly beneficial projects that could take advantage of adjacent lease areas, common cabling routes, and shared network upgrades to reduce regional costs.

The Clean Energy Associations appreciate the opportunity to provide comments on the Commission's timely inquiry, and looks forward to engaging with the Commission and stakeholders to ensure that offshore wind – and all other renewables – can successfully integrate into RTO/ISO markets.

Sincerely,

/s/ Gabe Tabak

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