**LEVITAN & ASSOCIATES, INC.**

**To**: Leslie Romine

Chief Staff Counsel, Maryland Public Service Commission
**From**: Seth Parker

**Cc:** Noah Shaw, Peter Ross

**Re**: Maryland Offshore Wind Program Regulations – Net Rate Impacts

**Date**: October 15, 2020

# **Executive Summary**

 This memorandum discusses the net rate impact limits that the Clean Energy Jobs Act of 2019 (CEJA) places on Round 2 offshore wind (OSW) projects, the potential negative effect these limits will have on Round 2 bids, and the regulatory steps the Commission can take to improve this process. Because there is significant uncertainty as to how the Commission will calculate the consequential impact component of the net rate impact, there is a risk that developers will either submit bids that are disqualified because they unintentionally exceed the Commission-determined net rate impact or submit bids for smaller projects with higher OREC prices in order to avoid disqualification. To mitigate this risk, the Commission could exercise its authority under the Public Utilities Article (PUA) to issue a clear market signal prior to the Offshore Wind Renewable Energy Credit (OREC) bid submission deadline as to how it plans to calculate the consequential impacts or even to provide a schedule of consequential impacts in advance. Improved clarity could allow developers to better account for the risk of disqualification due to exceeding net rate impact limits, and as a result, calibrate their bids to propose more competitive OREC pricing.

# **Background**

 The Offshore Wind Energy Act of 2013 (OWEA) amended the PUA for the Maryland Public Service Commission’s (Commission) Round 1 offshore wind procurement. Among other things, the OWEA established maximum net rate impacts for residential and non-residential customers as follows:

A. the projected net rate impact for an average residential customer, based on annual consumption of 12,000 kilowatt–hours, combined with the projected net rate impact of other qualified offshore wind projects, does not exceed $1.50 per month in 2012 dollars, over the duration of the proposed OREC pricing schedule;

B. the projected net rate impact for all nonresidential customers considered as a blended average, combined with the projected net rate impact of other qualified offshore wind projects, does not exceed 1.5% of nonresidential customers’ total annual electric bills, over the duration of the proposed OREC pricing schedule[.][[1]](#footnote-1)

 The OWEA also established an OREC price cap expressed in dollars per megawatt-hour (MWh). The Commission may not approve an applicant’s proposed Round 1 offshore wind project if “the price set in the proposed OREC price schedule does not exceed $190 per megawatt–hour in 2012 dollars.”[[2]](#footnote-2)

 The CEJA sets more stringent net rate impact limits for residential and non-residential customers, but does not impose an OREC price cap. The CEJA amended the PUA to set the following net rate impact limits for Round 2:

A. the projected incremental net rate impact for an average residential customer, based on annual consumption of 12 megawatt–hours, combined with the projected incremental net rate impact of other Round 2 offshore wind projects, does not exceed 88 cents per month in 2018 dollars, over the duration of the proposed OREC pricing schedule; and

B. the projected incremental net rate impact for all nonresidential customers considered as a blended average, combined with the projected net rate impact of other Round 2 offshore wind projects, does not exceed 0.9% of nonresidential customers’ total annual electric bills during any year of the proposed OREC pricing schedule[.][[3]](#footnote-3)

# **Analysis**

 We are not aware of any other state that sets net rate impact limits for their OSW procurements. Though Maryland’s Round 2 OSW net rate impact limits under CEJA are materially more stringent than for Round 1, it is the lack of clarity as to how the these limits will be calculated rather than their level that poses the greatest risk to competitive bids.

## The Net Rate Impact Incorporates Consequential Impacts that Cannot Be Accurately Calculated in Advance due to Variances in Input Assumptions and Methodology

 The net rate impact is a product of three key factors: (i) the OREC price in $/MWh, (ii) the OSW project size in MWs that determines the annual OREC quantity, and (iii) the “consequential impacts,” *i.e.* lower PJM wholesale energy, capacity, and ancillary service prices. Consequential impacts offset the direct cost of the ORECs to Maryland ratepayers, but their calculation requires the Commission or the developer to make a significant number of judgment calls and assumptions about market pricing and other variables. For example, estimating the impact of an OSW project on PJM wholesale energy prices over the OREC purchase term of twenty years generally requires advanced analytical techniques, e.g., a chronological dispatch simulation model that takes the dynamic nature of the PJM power market into account.

 Even if a developer hired a power market consultant to forecast reductions in wholesale power prices, the Commission’s consultant will be preparing its own independent forecast that almost certainly will differ from the developer’s forecast. Firstly, there will be differences in key input assumptions, e.g., load growth, generation additions / retirements, transmission topology, distributed energy resource development, electrification programs, renewable resource policies, and market rules that will lead to different results. Even with identical input assumptions, different price forecasting models will produce different results.

 In sum, because of this uncertainty, reasonable experts acting in good faith can come up with very different estimates for consequential wholesale power market impacts.

## Due to the Uncertainty of Consequential Impacts and the Risk of Disqualification, Developers Likely Will Reduce their Project Sizes

 We cannot provide precise quantitative estimates as to how the net rate impact limits will affect Maryland’s Round 2 procurement, but we believe the difficulty of estimating consequential wholesale power market impacts will have two principal effects: OSW developers may miscalculate the net rate impact of their projects resulting in disqualification or submit bids for smaller projects in order to avoid disqualification. At worst, developers may refuse to submit bids altogether.

 The most direct, first order effect is that developers may have different assumptions or employ a different methodology in estimating the consequential wholesale power market impact of their project. As knowledgeable developers with experienced advisors, they will understand how a miscalculation could lead to project disqualification. If the net rate impact ultimately calculated by the Commission is higher than that allowed by statute, the project will be ineligible.[[4]](#footnote-4)

 The net rate impact increases for higher OREC prices and larger OREC quantities and decreases as consequential impacts grow. It is thus possible for a project to have a higher OREC price, but nonetheless have a lower net rate impact due to its small size. The converse is also true: a project’s OREC price may be lower, but due to its larger size, it may have a higher impact on ratepayer utility bills.

Faced with the difficulty of predicting how the Commission will calculate the consequential impacts of their proposed OSW project, developers will likely hedge their prospects by submitting bids for smaller projects with lower OREC quantities that provide an extra margin for the uncertainty of consequential impacts. Due to economies of scale, however, small projects generally would have higher $/MWh OREC prices, increasing the risk of disqualification and causing developers to further downsize their projects. The ultimate result would be ratepayers paying unnecessarily high OREC costs.

## Clear Net Rate Impact Limits at the Level Set by the PUA Should Not Significantly Impede Competitive Bids

 The net rate impact limits in and of themselves may not pose a significant obstacle to obtaining competitive OREC pricing as the OSW industry has matured since the Round 1 solicitation. Although key high-value equipment such wind turbines continue to be sourced from Europe, the domestic supply chain has improved, turbines are more efficient, and OSW bids have declined. Developers, moreover, are currently more comfortable with the U.S. regulatory and policy environment than they were when Maryland ran its Round 1 solicitation in 2016-2017.

 This growth and maturation are reflected in the increasing size of domestic OSW projects. The first domestic OSW projects selected in competitive solicitations were small, e.g., the 30 MW Block Island Wind Farm (completed), the 25 MW Fisherman’s Energy (cancelled), the 200 MW Bluewater (cancelled), and the 90 MW South Fork (later expanded to 130 MW; COD set for the end of 2022). Maryland’s Round 1 OSW projects were not much larger: the 120 MW Skipjack and 248 MW US Wind projects.

 However, the latest domestic OSW projects to be selected in competitive solicitations are significantly larger, ranging from 704 MW to 1,100 MW.[[5]](#footnote-5) This greater size range provides enhanced economies of scale for amortizing permitting and development costs, minimizing equipment and material purchase costs, and avoiding unnecessary mobilization and installation costs. As result, these larger projects have been able to provide more competitive bids.

# **Recommendation**

 To mitigate the uncertainty surrounding the calculation of consequential impacts, we recommend that the Commission make as clear as possible to the OSW market how it plans to calculate this figure. With respect to the guidance the Commission might issue, at one end of the spectrum the Commission could state the general parameters and assumptions that will guide its calculation of consequential wholesale power market impacts and net rate impacts. At the other end, the Commission could calculate the consequential wholesale power price impacts in advance and provide the market with a schedule of such consequential impacts on a $ per MWh basis that can be applied to proposed OSW project sizes. Generally speaking, the more specific the guidance that the Commission can provide, the better that developers can incorporate such guidance into their bids and the more efficient and cost-effective the bids are likely to be.

## Option #1: Amending the COMAR and Providing Separate Detailed Guidance

 Our preferred option to provide a market signal in this regard would be to amend the COMAR to state that prior to the bid submission deadline, the Commission may provide guidance as to the methodology, factors, and assumptions it will use in determining the net rate impact, particularly the consequential wholesale power market impact component. The Commission could go further and provide a year-by-year schedule of those consequential impacts to the OSW market after the COMAR is amended and as far in advance the bid due date as feasible.

 The amended COMAR language would leave the Commission discretion with respect to how it will calculate net rate impact and how it will convey this information to the public. However, the amended language in the COMAR will signal to the market that further certainty in this regard will be provided, to ensure the ability to make the most efficient bids.

 As the regulations currently stand, the Commission’s estimate will not be calculated until the OREC bid evaluations are underway. COMAR 20.61.06.03 covers evaluation criteria and states that the Commission will conduct the quantitative net rate impact as part of the evaluation process, i.e., after the bids have been submitted. However, the PUA does not state that the Commission must calculate the consequential wholesale power market impact after the bids have been received.[[6]](#footnote-6) Nor does it prohibit the Commission from providing guidance to the market as part of the solicitation process as to the net rate impact calculation methodology.[[7]](#footnote-7) Accordingly, the COMAR could be revised as discussed herein within the Commission’s existing authority to administer the OSW program.

 The guidance provided to the OSW market, then, after promulgation of the amended COMAR and before receipt of bids would be the result of the work of a Commission consultant retained to forecast consequential impacts in the form of a year-by-year schedule on a $ per MWh basis.[[8]](#footnote-8) This would allow developers to “sharpen their pencils” and have the confidence to propose the largest and lowest-cost project possible that satisfies the CEJA residential and non-residential net rate impact limits.

There is precedent for such advance guidance in the Commission’s Round 1 OSW solicitation. The Commission permitted 2-part bids in which the second part of a developer’s bid price would be adjusted pro-rata based on the actual PJM system upgrade cost (determined through the PJM interconnection process) compared to the Commission’s estimated cost. The Commission retained a transmission consultant to estimate the PJM system upgrade cost for a generic OSW project that was provided to OSW developers in advance of their OREC price submittals.[[9]](#footnote-9)

## Option #2: Memorialize the Net Rate Impact Guidance in the COMAR

Alternatively, the Commission could decide how it plans to calculate the consequential and net rate impacts on an earlier timeframe and memorialize this guidance as part of the proposed COMAR amendments. That is, instead of providing the market guidance sometime between when the COMAR amendments are finalized and the OSW bid deadline, the Commission could embed this analysis in the regulations themselves. The advantage of such an approach is that potential bidders are informed on an earlier date of how the Commission will calculate net rate impacts. The disadvantage is that it requires the Commission to calculate the consequential impacts on an earlier schedule without the flexibility of updating its assumptions or changing its methodology after the regulations are set.

1. PUA § 7-704.1(e)(1)(iii)(1)(A) &(B) (as codified in the PUA post-CEJA). CEJA changes the citations for these Round 1 provisions in the PUA but left the substance of these provisions largely intact. [↑](#footnote-ref-1)
2. PUA § 7-704.1(e)(1)(iii)(1)(C) (as codified in the PUA post-CEJA). [↑](#footnote-ref-2)
3. PUA § 7-704.1(e)(1)(iii)(2). [↑](#footnote-ref-3)
4. See PUA § 7-704.1(e)(1)(iii)(2) (stating not-to-exceed net rate impact for Round 2 OSW projects). [↑](#footnote-ref-4)
5. The most recent domestic OSW projects include Copenhagen Infrastructure Partners / Avangrid - Vineyard Wind I 800 MW (Massachusetts), Copenhagen Infrastructure Partners / Avangrid - Park City Wind 804 MW (Connecticut), Shell / EDP – Mayflower Wind 804 MW (Massachusetts), Ørsted / PSEG - Ocean Wind Phase 1 1,100 MW (New Jersey), Ørsted / Eversource - Revolution Wind 704 MW (Rhode Island and Connecticut), Ørsted / Eversource - Sunrise Wind 880 MW (New York), and Equinor - Empire Wind 816 MW (New York). [↑](#footnote-ref-5)
6. *See* PUA § 7-704.1. [↑](#footnote-ref-6)
7. *Id.* [↑](#footnote-ref-7)
8. We note that forecasting these consequential impacts is not within the scope of our current engagement. As such, this memorandum does not provide such an analysis, but rather proposes ways of amending the COMAR to accommodate such an action by the Commission. [↑](#footnote-ref-8)
9. Axum Energy Ventures prepared a System Impact Study Report for the Commission dated January 30, 2015. [↑](#footnote-ref-9)