

August 10, 2018

RFI OSW-2018 Comments - Large Scale Renewables Team
New York State Energy Research and Development Authority
17 Columbia Circle
Albany, NY 12203-6399

Dear Large Scale Renewables Team,

This is Power Advisory LLC's response to the *Offshore Wind Renewable Energy Credits Request for Information OSW-2018* to provide NYSERDA feedback in developing a Request for Proposals (RFP) for Offshore Wind Renewable Energy Credits (ORECs) pursuant to the New York State Public Service Commission (PSC) *Order Establishing Offshore Wind Standard and Framework for Phase 1 Procurement* issued in Case No. 18-E-0071.

Power Advisory is a North American management consulting firm that specializes in electricity sector matters and solutions. Our team members have had major roles in over 35 requests for proposals for power supplies, including the development of RFPs, the evaluation of proposals submitted in response to these RFPs, as well as serving as an independent evaluator to monitor the proposal development, bid evaluation, and selection processes. Furthermore, we have supported a range of clients in the evaluation of offshore wind (OSW) opportunities and were engaged by the Rhode Island Office of Energy Resources to assist with the evaluation of OSW proposals received by the Massachusetts electric distribution companies.

With regards to this RFI submission, our response draws on our considerable experience in power procurement and the offshore wind industry.

Sincerely,



Travis Lusney

Manager, Procurement and Power Systems
55 University Avenue
Suite 605 – PO BOX 32
Toronto, ON M5J 2H7
tlusney@poweradvisoryllc.com
(647) 680-1154

Procurement Schedule

2. NYSERDA proposes requiring bids to remain firm and binding for 6 months in regard to the OREC pricing provisions and other commercial provisions. Is this duration reasonable, or is a longer or shorter time period warranted? What key factors affect how long a proposal can remain firm? How does this timeframe affect the preparation of the proposal?

NYSERDA can expect that the Fixed REC price will increase and in direct proportion to the length of time developers are required to hold their bid price firm. In other markets, a shorter firm bid price period has been used. The Alberta Electric System Operator (AESO) Renewable Electricity Program, RFP for renewable energy resources, required proponents to hold their pricing firm for about 3 ½ months and the Ontario Electricity System Operator (IESO) Large Renewable Procurement I required proponents to keep their pricing firm for 4 months.

Procurement Quantity

5. The Order notes that NYSERDA could award more than 800 MW in the first year alone to secure economic development benefits or to accept low bid prices that take advantage of the expiring federal tax credits. What should the RFP include to promote these benefits?

While recognizing the principle that parties should be responsible for managing the risks that they are best able to manage, the RFP should maximize the economic certainty for successful bidders in order to attract lowest OREC prices and maximum project capacities. Economic certainty can be maximized, while promoting efficient risk allocation by choosing the Index OREC option, contracting for a 25-year term and keeping the bid evaluation period relatively short.

OREC Pricing Options under the Index OREC Structure

11. Should bids be restricted to a single nominal strike price for the entire contract period? If yes, why?

a. In the alternative, should proposers be permitted to submit a schedule of nominal strike prices that vary each year? If yes, should a schedule of nominal prices that vary by year be limited to a fixed annual percentage escalator, or should annual changes be allowed to vary from year to year?

b. If the strike price changes annually, should the schedule of nominal prices be specified by contract year (beginning at actual commercial operation date) or by calendar year?

Either a flat or an escalating strike price can work for developers. If NYSERDA elects to employ an escalating strike price it must ensure that bids are comparable. Different bidder escalation assumptions would be addressed as part of a net present value

calculation in the evaluation process; or NYSERDA should establish a common escalation assumption in the RFP, such as the strike price for all projects will escalate at 2.5% per year starting at COD.

12. How should negative LBMPs be accounted for under this contracting structure?

New York customers should be protected from negative LBMPs where there is a Fixed or Index OREC by limiting the payment to the supplier so that New York customers' financial obligations are not increased by these negative LBMPs and to reflect that the project is likely to curtail output when the LBMP is negative. During negative LBMP periods, the supplier will likely elect to curtail its output, but should be compensated for this curtailed output, with the compensation reflecting the Fixed Index value or a Reference Price equal to \$0/MWh.

The approach taken in the Massachusetts Request for Proposals for Long-term Contracts for Offshore Wind Energy Projects (June 29, 2017) draft power purchase agreement (PPA) is indicative of the concepts described above. For reference a copy of Exhibit D to the Eversource and UNITIL version of that PPA is attached as Appendix A to this RFI response.

13. Is the current NYISO first year UCAP factor (the ratio of UCAP eligible for payment to the operable capacity of a resource in a given settlement period) of 38% reasonable to apply as a fixed value throughout the OREC contract period? If not, why not?

Bid Evaluation

Under the Index OREC at the time of the bid, proponents are bidding their levelized cost of energy (LCOE) on a \$/MWh basis. The bidders are not making an assumption on UCAP Factor. However, when evaluating proposals NYSERDA will likely have to calculate the Index OREC payment based on the difference between the strike price and the sum of actual energy and capacity revenue garnered by the projects. At the time of the bid submissions - for bid comparison purposes - NYSERDA will have to make assumptions regarding each bidder's energy revenue and capacity revenue to isolate the estimated annual payments being made under the Index OREC over the term of the contract. We would expect NYSERDA to Net Present Value these indexed payments at a pre-determined discount rate. In doing so, NYSERDA will have to assume an energy production and energy price to calculate the energy revenue and a UCAP Factor and capacity price to calculate the capacity revenue of the facility. The use of the 38% assumption for the UCAP Factor is appropriate as long as it is applied consistently across all bids for comparison purposes with the same discount rate.

Settlement

For settlement purposes we understand that NYSERDA desires feedback on whether the Index OREC should be settled against capacity revenue predicated on a fixed UCAP factor of 38%. The intended purpose of the Index OREC structure (relative to the Fixed OREC structure) is to create more revenue certainty for bidders. Settling against a fixed UCAP factor, for the term of the contract, creates revenue variability to the bidders and migrates away from the spirit of the Index OREC philosophy. To promote greater revenue certainty the Index OREC should be settled against the actual capacity revenue during the life of the contract.

OREC Pricing Options under the Fixed OREC Structure

14. Should bids be restricted to a single nominal OREC price for the entire contract period? If yes, why?

- a. In the alternative, should proposers be permitted to submit a schedule of nominal OREC prices that vary each year? If yes, should a schedule of nominal prices that vary by year be limited to a fixed annual percentage escalator, or should annual changes be allowed to vary from year to year?
- b. If the OREC price changes annually, should the schedule of nominal prices be specified by contract year (beginning at actual commercial operation date) or by calendar year?

Either a flat price or an escalating strike price can work for developers. In order to ensure that bids are comparable, it is recommended that NYSERDA address different bidder escalation assumptions through the use of an NPV calculation in the evaluation process or establish a common escalation assumption in the RFP, such as the strike price for all projects will escalate at 2.5% per year starting at COD.

15. How should negative LBMPs be accounted for under this contracting structure?

Under a Fixed OREC structure, developers will be exposed in the event of negative LBMPs and will be motivated to curtail production if the negative price is greater than the value of the OREC. Developers should not be penalized for self-curtailment in response to negative LBMPs.

Per Power Advisory's response to Question 12, the concepts embodied in the draft PPA used for Massachusetts' 2017 OSW RFP are an example that NYSERDA could draw from. The relevant section of the draft PPA is included as Appendix A to this response.

Bid Price Evaluation

17. Per the Order, the Fixed OREC and Index OREC bids will be weighted for consideration in the price component of the evaluation (Order, pp. 39-40, Appendix B). What weighting should be chosen for each option and why?

The goal of weighting Fixed and Index OREC bids should be to establish a transparent evaluation framework to compare different developers' bids. The key principle of such comparison must be consistency between bidders and transparency in the evaluation process. NYSERDA's process relies on a selection phase that depends on this weighting. After this evaluation and proposal selection NYSERDA is proposing to choose either the successful proponent's Fixed OREC bid or their Index OREC bid and to base the proponent's contract payments on this bid.

NYSERDA should equally weight Fixed and Index OREC bids – each at 50%.

An unequal weighting could bias the final results when combined with NYSERDA's subsequent choice of a preferred contract type. For example, if the Index OREC was more heavily weighted than the Fixed OREC in NYSERDA's methodology, then NYSERDA would potentially select a proponent with the lowest Index OREC price. If they subsequently chose the winning proponents' Fixed OREC bid on which to base the contract, then the process would not necessarily have produced the best result for consumers or offshore wind developers.

The idea of having two quite different OREC structures bid together and used to select winning bidders followed by NYSERDA being able to choose between the two OREC bid structures to determine with whom to negotiate a contract is not perfect. The choice to weigh the OREC structures differently to determine successful bidders introduces a further unnecessary imperfection to the process, could bias the selection and result in the selection of a proposal that doesn't represent the best value for New York customers.

18. What bid price evaluation process "lessons" have been learned from offshore wind procurements in other jurisdictions that NYSERDA should take note of for purposes of the 2018 RFP?

The bid price evaluation process employed by the Massachusetts Electric Distribution Companies yielded a compelling price for customers for offshore wind: \$65/MWh (2017\$ escalating at 2.5% per annum). This was accomplished by procuring what was essentially a bundled energy and REC product, which allowed OSW developers to mitigate market price risks. However, by allowing developers to retain capacity market revenues a strong

incentive was provided to maximize project availability during peak periods when needed for system reliability.

Improving revenue certainty will reduce risk for developers, facilitate financing and result in the lowest overall cost for ratepayers. This principal was evident in the 2017 on-shore wind procurement process that was run by the Alberta Electric System Operator (AESO) in Alberta, Canada. The AESO issued a total of 600 MW in new on-shore wind contracts for four wind projects. The contract structure used is a contract for differences where the projects settle against a strike price, providing a rebate when the received energy price exceeds the strike and receiving a top-up payment when there is a deficit. The average price awarded was CAD \$34/MWh, which is equivalent to approximately US \$26/MWh. Additionally, these projects are not subject to any tax credits, such as the ITC or PTC.

20. How should the Index OREC strike price be adjusted to account for the included energy and capacity components in order to be structurally comparable to the Fixed OREC price, for purposes of both (i) comparison to the maximum acceptable bid price; and (ii) calculation of a weighted average bid price?

NYSERDA should assess the relative value of the Index OREC to a forecast of Energy and Capacity prices that are produced and included in the RFP documentation for bidders use. This approach will ensure transparency and fairness in the bid evaluation process.

21. Are there other provisions that are consistent with the structure of the order that would, if included in the RFP, allow for more competitive pricing?

Provisions that increase the economic certainty for offshore wind investors will result in the lowest cost of capital, lowest bid price and most competitive pricing in the RFP. Inefficiencies that are embedded in NYSERDA's process (e.g., OREC reversion right) that result in higher OREC prices will be apparent and risk undermining public confidence in the process. In the interest of NYSERDA receiving pricing that is most attractive for New York customers contract provisions that result in efficient risk allocation while avoiding risks that unnecessarily undermine the economic certainty of OSW projects should be employed.

Economic Benefits

27. NYSERDA may establish penalties or other contractual repercussions, such as those used in its Renewable Energy Standard Tier 1 solicitations, which reduce the contract price in proportion to any shortfall below 85% of the economic benefits claimed, based on the independent audit of benefits realized during the first three years of commercial operations. Here, NYSERDA is

considering: (i) reducing the contract price in proportion to the shortfall; (ii) requiring seller to make additional investment to make up a shortfall; or (iii) requiring seller to submit a payment in proportion to a shortfall to fund related activities. Please comment on these alternative approaches.

Various penalty structures can be tolerated and accommodated in the preparation of proposals provided that a transparent and strict definition of triggers and the penalty methodology is defined upfront and implemented with integrity during the contract term.

Eligibility/Contract Provisions

35. To encourage the greatest participation by offshore wind developers, what specific considerations should be made in defining eligibility and threshold requirements, bid flexibility, and other procurement mechanics?

The greatest participation by offshore wind developers and the lowest overall cost for ratepayers can best be achieved by ensuring revenue certainty for developers. As merchant exposure increases, the cost to obtain financing increases, which will result in the need for a higher OREC price. With the Index OREC, the market index against which the OREC settles should closely match the actual market to which the project is exposed. Offshore wind projects can interconnect into various northeastern states and therefore NYSERDA's process will be in competition with the processes developed and implemented in neighboring jurisdictions for the finite economic offshore wind resource.

37. NYSERDA will have discretion in fixing specific contract terms between 20 and 25 years (Order, p. 41). Should NYSERDA require proposers to submit offers for one or more specified terms, or allow respondents to propose a term length?

The bids need to be evaluated on an apples to apples basis. Introducing varying structures and terms will render comparisons difficult to assess. The bids will need to be evaluated in real dollars (not escalated) in a transparent methodology (i.e. real dollars, in base year). We recommend NYSERDA choose the 25-year contract term to get the lowest cost for consumers.

38. What factors should be considered in setting a latest allowable commercial operation date (COD) (Order, p. 46)?

a. How should the contract address delays in achieving the COD?

b. Should liquidated damages (LDs) be employed to foster timely commercial operation? Related to LDs, what factors should be considered in determining the reasonableness of a delayed COD?

c. If a selected project is not completed by the contractual COD, what size financial penalty should be levied for failure to perform?

Developers should be exposed to LDs if the target COD is not achieved within a reasonable time period; however, the target COD should be adjusted on a day for day basis for delays due to issues outside of the developer's control, such as weather delays, permitting delays, labor interruptions and other items typically considered to be force majeure events. LDs can also be scaled if the facility is partially commissioned.

40. The Order states that "[i]f NYSERDA awards a contract using the Index OREC method, the contract will specify conditions that may trigger a reversion to the Fixed OREC method and price that was bid" (Order, p. 40).

a. How should this provision be included in the contract?

b. What conditions could trigger the reversion?

c. Should there be a limited timeframe within which such a reversion must be exercised?

The ability of NYSERDA to revert the contract from the Index OREC to the Fixed OREC exposes the developer to additional investment risk due to revenue uncertainty.

When submitting the initial bid for a Fixed OREC price, the developer would have done so based on a merchant price forecast at that time and a plan to hedge the merchant price exposure. Reverting to the Fixed OREC structure at some point during the term of the OREC contract may result in the developer receiving merchant revenue that is different from the original assumption used in establishing the Fixed OREC price without the benefit of a hedge in place.

The Index OREC provides a considerably more comprehensive market price hedge than the Fixed OREC and reduces the market risks borne by the supplier. This reduces financing costs and yields a lower overall OREC price. However, if NYSERDA is able to revert to a Fixed OREC then the risks borne by the supplier would increase. This suggests that with NYSERDA holding such a reversion right, lenders who are concerned with plausible worst-case scenarios will require a premium to protect against reversion. Furthermore, a reversion to a Fixed OREC structure may trigger clauses in the financing agreement that put additional risk onto the project developer that cannot be mitigated. Therefore, developers, and ultimately customers, would be unable to fully realize the benefit offered by the market risk mitigation provided by the Index OREC.

Appendix A – Eversource and UNITIL Version of Massachusetts Draft OSW PPA for Reference on Negative LMP Treatment

EXHIBIT D

PRODUCTS AND PRICING

1. Price for Buyer’s Percentage Entitlement of Products up to the Contract Maximum Amount. The Price for the Buyer’s Percentage Entitlement of Delivered Products up to the Contract Maximum Amount in nominal dollars shall be as follow:

(a) Product Price - Commencing on the Commercial Operation Date, the Price per MWh for the Products shall be [equal to [\$__] per MWh][as follows]. [The Price per MWh for each billing period shall be allocated between Energy and RECs as follows]:

[Formulation for NU and Unitil]

[If single Energy price and single REC price are provided for the contract term.]

(i) Energy = [amount bid by Seller]

(ii) RECs = [amount bid by Seller]

- Fixed Contract Price [applicable to all technologies]

Year	Energy Price (on-peak) (\$/MWh)	Energy Price (off-peak) (\$/MWh)	REC Price (\$/REC)
1			
2			
3			
4			
5			
6			
7			
8			
9			
10			

If the market price at the Delivery Point in the Real-Time or Day-Ahead markets, as applicable, for Energy Delivered by Seller is negative in any hour, the payment to Seller for deliveries of

Energy shall be reduced by the difference between the absolute value of the hourly LMP at the Delivery Point and \$0.00 per MWh for that Energy for each such hour. Each monthly invoice shall reflect a reduction for all hours in the applicable month in which the LMP for the Energy at the Delivery Point is less than \$0.00 per MWh.

Examples. If delivered Energy equals 1 MWh and Price equals \$50.00/MWh:

LMP at the Delivery Point equals (or is greater than) \$0.00/MWh
Buyer payment of Price to Seller \$50.00
Seller credit/reimbursement for negative LMP to Buyer \$0.00
Net Result: Buyer pays Seller \$50 for that hour

LMP at the Delivery Point equals -\$150.00/MWh
Buyer payment of Price to Seller \$50.00
Seller credit/reimbursement for negative LMP to Buyer \$150.00
Net Result: Seller credits or reimburses Buyer \$100 for that hour

(b) Price for Buyer's Percentage Entitlement of Products Delivered in Excess of Contract Maximum Amount. The Products Delivered in excess of the Contract Maximum Amount shall be purchased by Buyer at a Price equal to the product of (x) the MWhs of Energy in excess of the Contract Maximum Amount Delivered to the Delivery Point and (y) the lesser of (i) ninety percent (90%) of the Real Time LMP at such Delivery Point, or (ii) the Price determined in accordance with Section 1(a) of this Exhibit D for each hour of the month during which such Energy in excess of the Contract Maximum Amount is Delivered to Buyer.

(c) Negative LMP - For those hours when the Real Time LMP at the Delivery Point (as determined by ISO-NE) is negative, the payment from Buyer to Seller shall be reduced for Products Delivered in excess of the Contract Maximum Amount by an amount equal to the product of (x) the MWhs of Energy in excess of the Contract Maximum Amount Delivered to the Delivery Point and (y) one hundred percent (100%) of the absolute value of the Real Time LMP at such Delivery Point for each hour of the month during which such Energy in excess of the Contract Maximum Amount is Delivered to Buyer. All rights and title to RECs associated with Energy Delivered in excess of the Contract Maximum Amount shall remain with Buyer whether the Real Time LMP is positive or negative. In the event that Seller received RECs associated with Energy Delivered in excess of the Contract Maximum Amount, Seller shall not hold or claim to hold equitable title to such RECs and shall promptly transfer such RECs to Buyer's GIS account.

**The full draft Power Purchase Agreement can be accessed at the following address:
<https://macleanenergy.files.wordpress.com/2017/02/eversource-unitil-ppa-51917.docx>**