

January 19, 2018

Barbara Ellard
Director, Markets and Procurement
Independent Electricity System Operator
1600-120 Adelaide Street West
Toronto, ON M5H 1T1

Dear Barbara,

The Canadian Wind Energy Association (CanWEA) is pleased to submit comments to the Independent Electricity System Operator (IESO) regarding the forthcoming non-emitting resources (NERs) Request for Information (RFI).

CanWEA is the voice of Canada's wind energy industry, actively promoting the responsible and sustainable growth of wind energy on behalf of its members. Our members are Canada's wind energy leaders. They are wind energy owners, operators, manufacturers, project developers, consultants and service providers. CanWEA leads the effort to ensure Canada fully realizes its abundant wind energy potential on behalf of its members - and for the benefit of all Canadians – to build a cleaner, stronger future.

During the December 21, 2017 IESO webinar discussing the forthcoming NERs RFI, the IESO requested feedback from stakeholders regarding initial thoughts on the NERs RFI scope, development, and timelines. CanWEA is also a member of the Consortium led by Power Advisory LLC (Power Advisory) and we have lent our support to the submission prepared on behalf of that group. Please consider the following complimentary and additional comments provided on behalf of the wind energy industry in Ontario.

CanWEA is pleased with the opportunity for the wind energy industry to provide valuable information to this process, as wind energy has not only become the lowest cost form of new electricity generation, but the technology also provides a range of services offering innovative, flexible solutions to system operators that can support reliable operations.

CanWEA acknowledges that cost alone is not the only consideration for governments and system operators when seeking new products to meet future system and supply needs. Climate driven policies that have enabled an increased uptake of NERs and the subsequent displacement of fossil fuels, are fundamentally changing the supply mix and consequently, how system operators manage the bulk electricity system. This is not unique to Ontario and we have an opportunity to learn from the experiences of other jurisdictions that have implemented a number of measures to provide firm energy and other reliability services – something wind energy is poised to deliver.

CanWEA believes that a process like the NERs RFI will enable wind energy to demonstrate that, despite now being the lowest cost option for new electricity generation, wind energy is also well suited – on its own, or combined with other technologies - to provide a range of services to the grid. It is paramount however, that the IESO define the parameters of this process so that suppliers of these products and services can confidently scope and articulate the value that the IESO will soon be seeking when the need for new supply arises.

Scope of NERs RFI

During the December 21, 2017 webinar, the IESO identified the NERs RFI as having the following two main objectives:

- Inform IESO and stakeholders, and support IESO's Market Renewal Program (MRP) scope of work to be delivered by the Market Renewal Working Group's (MRWG's) Non-Emitting Resource Sub-Committee (NERSC); and
- Provide information on maintenance/upgrades of existing NERs and development of new NERs, focusing on technical and commercial aspects regarding participation within Ontario's wholesale electricity market and ability to meet power system needs.

CanWEA supports the development and the objectives of the NERs RFI. The information the IESO will collect in response to the NERs RFI should be positioned towards providing key input on how Ontario will meet its future supply and system needs while also specifically helping to meet Ontario's climate change policy objectives.

The following sections provide constructive comments and recommendations regarding the development and timelines of the NERs RFI, consistent with that which was provided by the Consortium under the signature of Power Advisory. Overall, if the NERs RFI is to result in useful technical submissions in order to effectively guide and inform the IESO and stakeholders, the IESO should provide additional power system information regarding Ontario's future needs and be clearer in indicating what information is being sought from RFI respondents.

Defining Ontario's System Needs Towards Understanding the Capabilities of NERs Meeting These Needs

In order to set technical context for the NERs RFI, the IESO should enhance the two main RFI objectives by relating them to Ontario's future power system needs. By doing so, this will provide needed context to RFI respondents with additional guidance towards preparation of their submissions.

For example, the following information should be provided by the IESO in context of the NERs RFI:

- More accurate identification regarding Ontario's future supply needs in accordance with the IESO's Ontario Planning Outlook (OPO) 2016 and the Ontario Government's Long-Term Energy Plan (LTEP) 2017 – based on the LTEP 2017, it appears that Ontario will require approximately 2,000 MW of capacity by the mid-2020s but this projected capacity requirement has not been explicitly expressed (i.e., projected quantity) either by the IESO or by the Ontario Government within any document;
- Further refinement of Ontario's projected capacity needs should be placed in context with enhancing system flexibility needs that the IESO has been discussing with stakeholders (e.g., need to increase regulation services to +/- 150 to 200 MW, need to increase 30-minute operating reserve (OR) by over 700 MW) – to the extent that the IESO wants to better understand the

capabilities of NERs to provide flexible supply, then the IESO should define Ontario's system flexibility needs within the RFI itself; and

- Updated connection availability information organized by transmission zone/area, including available connection availability via circuits, and other useful technical information helping to inform facility upgrades and/or expansion and new project development.

If the IESO and stakeholders are to better understand the capabilities and attributes of NERs and how NERs can help meet Ontario's future supply needs, the IESO should provide additional technical information helping to focus the objectives of the NERs RFI while providing additional guidance to RFI respondents, and not simply 'cast the net out wide' for submissions without providing additional technical guidance and requirements based on Ontario's projected system needs.

Technical Conference

The planned NERs technical conference tentatively scheduled for March 2018 supports the above points and provides scope for discussion at the technical conference. CanWEA supports the planned technical conference and recommends that a summary report from the technical conference be provided to the MRWG immediately following the conference. This summary report should include commentary on the development of the NERs RFI by linking technical capabilities to NERs and how NERs can help to meet Ontario's power system needs.

Proposed Phased Approach and Timelines for NERs RFI

During the December 21, 2017 webinar, the IESO proposed that the NERs RFI will be administered within the following two phases in accordance with the timelines listed in the table below.

- Phase 1 – market-based information supporting MRP
 - Products and services that can be supplied by NERs
 - Barriers for participation within Ontario's wholesale electricity market
- Phase 2 – technical and indicative cost information
 - Development and construction information
 - Financial/commercial considerations
 - Indicative, non-binding capital and operating costs

| RFI – Phase 1 | RFI – Phase 2 |
|--|---|
| February 2018 - Issue RFI Phase 1 | August/September 2018 – Issue RFI Phase 2 |
| March 2018 - NER-SC technical conference | September 2018 - NER-SC report to MRWG |
| April/May 2018 - Phase 1 RFI submissions due | December 2018 - Phase 2 RFI submissions due |
| July/August 2018 – Conclusion of Phase 1 | Early 2019 – Conclusion of Phase 2 |

CanWEA recommends that the IESO consolidate the RFI into a single phase with final submissions due by mid-September 2018. With this recommended change in the deadline for submissions, the NERSC report on the findings from the NERs RFI and its submissions can be moved to October 2018.

The recommended timing to conclude the NERs RFI with submissions sent to the IESO by mid-September 2018 and the NERSC report sent to the MRWG by October 2018 will better line up with the NERSC work¹ and the finalization of MRP high-level design documents (i.e., high-level design documents for the energy and capacity workstreams)². This revised timeline will better ensure that all relevant findings from the conclusion of the NERs RFI can inform the work of the NERSC and the MRP high-level design process. The proposed IESO timelines will not capture important information from the Phase 2 submissions (e.g., development information, indicative cost information, etc.) within present NERSC and MRP timelines.

Additionally, if the IESO is to scope the RFI into one phase, it is paramount that clarity around the future supply needs and subsequent timing of those needs is defined prior to launching the RFI.

Scope and Requirement of NERs RFI

CanWEA supports the Consortium’s recommendation that the following six categories should comprise the information that respondents will need to provide in response to the NERs RFI.

1. General Supply Information

- Non-emitting fuel type(s)
- Geographic location/site of resource(s)
- Project/facility size (MW) and amount of supply (MW and/or MWh)
- Existing facility, facility upgrade or expansion, new project development(s)
- Any combination of non-emitting fuel types, technologies (e.g., energy storage), and/or projects/facilities (e.g., transmission)
- For upgrades, expansions, and new project development(s), timing, plans, and capability to begin construction (including connection lines and bulk transmission where applicable)

¹ relating to Incentive Mechanisms phase (scheduled for Q3/18) (i.e., Phase 3 of the NERSC scope of work)

² which appear to now be scheduled for completion by the end of 2018

2. Benefits and Supply of Electricity Products

- Products that could be supplied (e.g., energy, capacity, ancillary services (identify which ones, (e.g., OR, regulation, voltage support and reactive services, black start), etc.), environmental attributes (EAs) (e.g., renewable energy certificates (RECs), etc.)
- Capability to provide services not yet defined by IESO, but may be needed in the future (e.g., ramp, load following, etc.)
- Description of benefits to Ontario's power system that can be supplied by each identified product per identified resource(s) (e.g., resource adequacy and capacity, deliverability, operability, flexibility, etc.)
- Ability to provide additional benefits to Ontario's power system (e.g., flexibility, ability to help manage Ontario surplus baseload generation (SBG), resilience, security, etc.)

3. Connection and Deliverability

- Electrical location/site of resource(s) and connection/delivery point(s)
- Capability to deliver and supply electricity products
- Identification of existing or potential transmission congestion

4. Commercial Information

- Indicative term of supply commitment(s) (e.g., years)
- Indicative price/costs (\$/MWh) (\$Cdn)

5. Approvals and Engagement Plans

- Information around timing related to obtaining the required environmental permits, regulatory approvals, engagement plans etc.
- Information related to timing required to achieve appropriate community and stakeholder engagement plans (including plans with Indigenous communities), including any declarations or agreements with communities and/or stakeholders (including declarations or engagements with Indigenous peoples)

6. Additional Information

- Comments on, and description of, any barriers to participating within Ontario's electricity market, including specific identification of existing barriers (e.g., IESO Market Rules, etc.) and recommended solutions to address barriers
- Recommended changes to the design of Ontario's wholesale electricity market for inclusion within MRP
- Recommendations on next steps post NERs RFI conclusion (e.g., Request for Proposals (RFP), etc.)

Within the stakeholder consultation process to develop the NERs RFI, results, conclusions, and potential post-RFI steps need to be discussed. Within the consultation, information relating to respondents' submissions needs to be discussed regarding what information can be made public and what information remains confidential. For example, information regarding indicative cost, development, and detailed connection and deliverability information will need to be reviewed for proprietor confidentiality.

Coordinating Scope of NERSC and NERs RFI

During the December 21, 2017 webinar, the IESO stated that the NERs RFI will support the work of the NERSC. However, it is unclear what exactly the role of the NERSC will be relative to the development of the NERs RFI (e.g., Which stakeholder engagement initiative will the development of the NERs RFI be consulted?). For example, the NERs RFI is not included as an agenda item for the January 22, 2018 NERSC meeting.

CanWEA recommends that the NERSC be the IESO stakeholder engagement initiative to consult on the development of the NERs RFI supplemented by a few IESO webinars (or similar) that will include any stakeholders. This recommendation is supported by the NERSC being a sub-committee of the MRWG, where the MRWG is in best position to opine on matters relating to the NERSC and the NERs RFI relative to MRP. Therefore, the NERs RFI should be a standing agenda item for all NERSC and MRWG meetings.

Further, it is imperative that any recommendations contained in reports developed by the NERSC factor in results of the NERs RFI and its submissions. This point supports the recommendations to collapse the proposed two-phase approach with submissions in response to the RFI sent to the IESO by mid-September 2018 and the NERSC report concluding the RFI to be sent to the MRWG in October 2018.

Conclusions and Proposed Next Steps

CanWEA supports the NERs RFI and applauds the IESO for undertaking this initiative. The information gathered through this initiative will enable the IESO to make informed decisions towards helping to meet Ontario's future supply and system needs. The IESO should be commended for developing a NERs RFI, especially considering recent results from NERs procurement initiatives in Alberta and Colorado:

Pricing highlights from recent competitive procurements:

The Alberta Electricity System Operator's (AESO's) Renewable Electricity Procurement (REP) Round 1 resulted in contract awards in December 2017 for four wind generation projects totaling nearly 600 MW with an average price of 3.7 cents/kWh (\$Cdn). Even more recently, Xcel Energy announced median pricing (\$U.S.) received for the following proposed NER projects in Colorado: wind generation (1.81 cents/kWh); wind generation + solar generation (1.99 cents/kWh); wind generation + battery storage (2.1 cents/kWh); and wind generation + solar generation + battery storage (3.06 cents/kWh).

To enhance the scope of the NERs RFI towards better ensuring thoughtful and technically insightful submissions, CanWEA recommends that the IESO make the following key changes:

- Additional clarity and guidance is required regarding the purpose and objectives of NERs RFI, including sufficient technical information relating to Ontario's future power system needs (e.g., capacity, system flexibility, etc.) and connection availability and the timing of such needs;
- A summary report from the planned March 2018 technical conference should be provided to the MRWG immediately following the conference, including commentary on development of the NERs RFI by linking the technical capabilities of NERs and how they can help meet Ontario's power system needs;
- Collapse the two-phase approach into a single phase with final submissions sent to the IESO by September 2018 and the NERSC report sent to the MRWG by October 2018 regarding findings from the NERs RFI and its submissions;
- Additional clarity is needed regarding how results from NERs RFI could inform MRP high-level design, including how decisions will be made towards determining how information from the NERs RFI submissions and any recommendations from the NERSC could inform MRP high-level design; and
- In addition to informing MRP high-level design, the results of the NERs RFI should also have potential to trigger a formal procurement initiative for electricity supply from NERs (e.g., RFP, etc.).

CanWEA will be happy to discuss the contents of this submission with the IESO and the NERSC, as part of the Consortium or individually as the representatives of the wind energy industry in Canada.

Sincerely,



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Regional Director, Ontario
Canadian Wind Energy Association

cc:

Leonard Kula (IESO)
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