

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

January 17, 2018

RE: Request for feedback on the upcoming Non-Emitting Resources Request for Information ('NER RFI')

Dear Ms. Ellard,

It is our pleasure to submit this letter in response to the Independent Electricity System Operator ('IESO') request for feedback on the upcoming Non-Emitting Resources Request for Information ('NER RFI').

EDF EN Canada Inc. ('EENC') commends and supports the IESO's continued leadership to secure current, tangible information on Ontario's non-emitting resources by way of this RFI. We believe the RFI process is essential to maintain a firm grasp of evolving and relevant market factors, such as pricing, technology improvements, and resource availability to inform your broader market renewal objectives, as well as inform your future supply needs.

Recent procurements in Canada and the United States are continuing to demonstrate the low cost and flexibility of renewable energy. As you are no doubt aware, on December 13th of last year, Alberta's AESO announced the winning bids in the recent Round 1 of the Renewable Electricity Program ('REP'). That procurement process, utilizing a variable renewable energy credit structure over a 20-year term procured nearly 600 MW of wind generation at a weighted average bid price of \$37/MWh, with a range of \$30.90 to \$42.90/MWh. Furthermore, in the recent solicitation from Xcel Energy, combined solar/storage and wind/storage bids, with in-service dates of 2023, set new record low prices. Solar-plus-storage attracted a median price of \$36 MWh (USD), whereas bids for wind plus storage held a median price of \$21 MWh (USD).

While we must be cautious in referring jurisdictional comparisons to a unique energy market like Ontario's, these results demonstrate that the rapid price and technological advances long predicted by industry are now here. The undeniable conclusion is that non-emitting renewable resources ('NERs') are not only cost competitive, but are also able to provide the type of firm and flexible energy EENC's believes the IESO requires to meet Ontario pending supply gap. Therefore, we are extremely supportive of the IESO's initiative to seek information on the available technologies, resources, locations and price of projects available in Ontario.

EENC is a member of the IPP Consortium organized by Power Advisory, and we have provide input into comments in that submission that you will also find replicated in part here. However,

EENC has a tradition in Ontario and we felt it necessary to submit our own feedback to you to offer our own voice and continue to make our company unique expertise and perspective available to the IESO throughout the RFI process.

Overall, EENC submits the following comments to support the RFI, so that it is a key engagement and input for the IESO to firmly establish that Ontario can and will be able to meet its future supply and resource adequacy needs with new non-emitting resources, while meeting Ontario's climate change policy objectives, at an affordable cost to ratepayers.

Scope of NERs RFI

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

- i. 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*
- ii. 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.*

EENC supports the development and the objectives of the NERs RFI.

However, it is not explicit in the scope what supply attributes the IESO will require (firm energy, capacity flexibility, etc.); and when and how much supply will be needed. We recognize that the IESO may not want to specify at this time in order not to limit its options or stifle shared learning and collaboration; however, from a corporate perspective, EENC strongly urges the IESO to provide additional system information regarding Ontario's future needs and be as prescriptive as possible with the information being sought from RFI respondents. This will avoid situations where proponents expend considerable time, money, and resources to design and price an asset that has limited value to the IESO. More detail around what type of project attributes will also help focus the RFI to ensure it is more meaningful and consumes less time and energy from the IESO reviewing submissions that are less desirable.

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

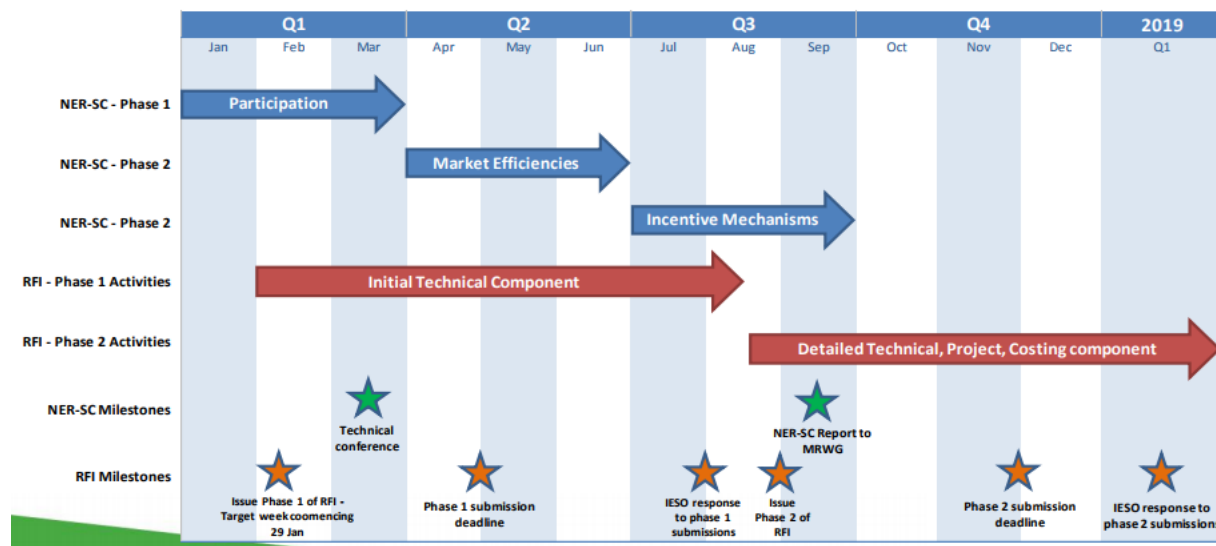
- More accurate identification of Ontario's future supply needs in accordance with the IESO's Ontario Planning Outlook (OPO) 2016 and the Ontario Government's Long-Term Energy Plan (LTEP) 2017 – based on the LTEP 2017, it appears that Ontario will require approximately 2,000 MW of additional capacity 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; and

- Further refinement of Ontario’s projected capacity needs should be placed in context of the enhanced system flexibility needs 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
- 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.

Therefore, 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 much needed context to RFI respondents and our corporate technical bid teams with additional guidance towards preparation of our submissions.

Phasing of the RFI and Coordination between RFI – NERSC – MRWG

As indicated, the RFI is proposed to take place in two (2) phases in 2018. The first phase is intended to support the Market Renewal Program with information on project availability, technologies, operating characteristics, and market barriers to conclude end of April 2018. The second phase intends to solicit more detailed project and pricing information with bid submission end of November 2018.



From EENC’s perspective, we recommend the following changes to the chart above:

- i) Combine the two RFI phases into one single RFI phase where proponents submit only one (1) RFI submission due September 2018 that includes all the Project information listed below in this feedback letter;
- ii) NERSC to draft an 'Interim RFI Report' to MRWG and IESO in **May 2018** to update all IESO work streams on RFI work to date. The Report would outline components previously suggested for 'Phase 1' – general information on technologies presented at the conference, operating characteristics of those technologies, and 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;
- iii) Greater coordination or alignment between the NER RFI, the NERSC and MRWG. EENC proposes the IESO shorten the RFI bid submission deadline from end of November to end of **September 2018**; and, at the same time, delay by one (1) month to October 2018 the final report from NERSC to MRWG to, again, inform key decision makers in all other areas of market renewal.
- iv) The most important component of the NERSC, as it relates to the RFI, is the Incentive Mechanism Work Stream. Therefore, consideration on completing that work stream should be accelerated for completion in August.
- v) Lastly, the IESO could move up its formal response to the RFI to December 2018.

RFI Related Activity	Timeframe
IESO NER RFI Starts	February 2018
IESO Technical Conference	March 2018
NERSC 'Interim Report' to MRWG	May 2018
Incentive Mechanisms Work Stream Ends	August 2018
IESO NER RFI Bid Submission	September 2018
NERSC FINAL Report to MRWG	October 2018
IESO Formal Response to RFI	December 2018

Overall, the rationale to reshuffle these timelines is to acknowledge that RFIs typically solicit information not as granular in nature that firm procurements do, therefore proponents do not need 10 months to prepare the information expected to be requested by the IESO. What does lead to best results, and will require coordination and shared learning of all pertinent and available information between IESO and Proponent, is an RFI that has very clear requirements to lead to best indicative price submissions.

Most important to EENC is the vertical alignment between RFI-NERSC-MRWG. All information obtained in this RFI should be used to inform decisions in NERSC; as well as Market Renewal, the Incremental Capacity Auction design and all the other market renewal initiatives, which, all together will ensure the right resources are available to meet system needs.

Information Requested

EENC recommends that the RFI should be structured in a way that encourages flexibility and allows multiple projects per site (with alternate operating profiles/sizes/price combinations).

Most important, since this is an information-seeking exercise, and the key to flexible markets is to respond to evolving market needs, we recommend not making participation in the RFI a prerequisite for participation in any future program (i.e. RFQ/RFP).

Lastly, as the goal of the RFI is to collect information on what non-emitting resources are available in Ontario, their timelines, operating profile, and indicative pricing to inform broader market decisions, EENC suggests that the following criteria be requested:

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)

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.)

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

Commercial Information

- Indicative term of supply commitment(s)
- Indicative price/costs (\$/MWh) (\$Cdn)
- Financial information and capabilities of respondent

- Relevant experience (e.g., development, operations, delivering across interconnections, etc.) of respondent

Approvals and Engagement Plans

- Status of any applicable environmental plans, approvals, permits, etc.
- Status of any community and stakeholder engagement plans (including plans with Aboriginal peoples), including any declarations or agreements with communities and/or stakeholders (including declarations or engagements with Indigenous Communities)

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 any barriers
- Recommended changes to the design of Ontario’s wholesale electricity market for inclusion within the MRP
- Recommendations on next steps post NERs RFI conclusion (e.g., Request for Proposals (RFP), etc.)

Comment on Post RFI Timeline

As generally presented in the 2017 Long Term Energy Plan (‘LTEP’), a supply gap arises in 2023. EENC has been developing projects in Ontario since 2007, and in our opinion, the process for securing new supply in Ontario is a lengthy process, often requiring up to 6 years. Based on this assumption, should the IESO continue with its currently proposed schedule, new non-emitting resources will not be available to meet the system needs in 2023.

IESO assessment of Market Renewal, market mechanisms, consultation with stakeholders, high level ‘program’ design	January-April 2019
Program implementation and award	April 2019 – December 2019
Permitting and Construction	2020 – 2023

While 2023 may seem far off, it is well within the normal planning horizon of many ISO jurisdictions. For example, the Xcel Energy procurement mentioned above was also soliciting bids from projects with a 2023 timeframe and the procurement has already been planned and executed.

EENC is not asking for detailed next steps right now, nor as an industry or even a developer do we even have all information from Ontario’s new market design to make an assessment on what the market will look like in 2019. However, we did want to stress that should IESO want resources online in 2023, the time to secure new supply may need to take place as soon as 2019.

I would like to thank you again for the IESO's proactive engagement on this initiative. We strongly feel it signals Ontario's ongoing interest in non-emitting resources and seeks to capitalize on the innovative transformation that is happening worldwide in the Non-Emitting Resources market.

Sincerely,

David Thornton
Manager, Stakeholder Relations
EDF EN Canada Inc.