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Correspondence

Barbara Ellard,
Director, Resource and System Adequacy
Independent Electricity System Operator
120 Adelaide Street West
Suite 1600
Toronto, ON
M5H 1T1

Sent via email to engagement@ieso.ca

Dear Barbara Ellard,

Re: IESO Resource Adequacy and Long-Term 2 Request for Proposals

The Ontario Federation of Agriculture (OFA) proudly represents more than 38,000 farm businesses across the province, supporting our members and the agriculture industry on issues, legislation and regulations governed by all levels of government. We are the leading agricultural advocate for Ontario farmers, their businesses, and their communities.

As Ontario progresses through the Expedited and Long-term Procurements for up to 2,500 MW of stand-alone and hybrid Battery Energy Storage System (BESS) facilities, there is significant interest throughout Ontario rural communities. On behalf of the OFA, I would like to provide you with an agricultural perspective on the second Long-term Procurement for up to 2,000 megawatts of new and existing non-emitting electricity capacity and storage assets, to be in service by 2030.

In addition to constraints within the electricity grid, policy drivers influence the siting of procurements. The OFA is pleased that the IESO has taken direction from the Minister of Energy to assess several processes related to these procurements, including prime farm land protection, ensuring community support, and environmental and permitting approvals.

Considering the number of proposals, presentations to local governments, and public engagements, by up to 55 eligible companies vying for multiple transmission connection point contracts, OFA developed what we view to be fair and practical considerations aimed to support affected rural and farming communities. Our hope is that agencies that procure and license these facilities adopt prudent recommendations that allow Ontario's energy regulators to accommodate Ontario's buildout of clean, reliable grid systems, while ensuring due attention is afforded to the communities that host BESS and additional generation facilities needed to reach 2050 electrification demand.

There are several types of battery storage that can deliver the scale of energy for the duration required by the IESO. To date, all proposals submitted for consideration have chosen Lithium-ion Phosphate battery systems. Although lithium-ion batteries are considered safe technology and the risk of a fire in a utility-scale BESS is low, the degree of impact of such events is high.

OFA Recommendations: Proactive Fire and Safety Risk Management

Proponents must be obligated to ensure effective fire and safety risk management is in place, to ensure fire services are trained on managing chemical fires, and to install automated fire prevention and fire suppression mechanisms. We recommend:

1. that Ontario's energy regulators contractually obligate proponents and all subsequent BESS owners to take steps to ensure that fire and other safety risks are managed effectively. This includes supporting the training of firefighters on managing chemical fires, ensuring fire services are financially prepared to control BESS events, as well as installing automated fire prevention and fire suppression mechanisms in their BESS.
2. that Ontario's energy regulators require that proponents and all subsequent BESS owners be insured to bear the costs related to a BESS event, to reduce the burden otherwise born by local governments, such as extended fire fighting capacity or public evacuations. Event preparedness should include a fire risk assessment, a community risk assessment, maintaining fire protection documentation and an emergency response plan.

U.S. and Canadian Codes and Standards (Fire, Building, Product and System Design)

BESS installations in the United States must comply with Underwriters Laboratory (UL) and National Fire Prevention Association (NFPA) standards and codes, to reduce the likelihood of failure. These standards and codes ensure individual cells, batteries, battery banks, battery containers, fire prevention, and fire suppression mechanisms effectively manage failures and reduce the likelihood of thermal runaway events.

BESS products and structures are designed and manufactured outside of Canada, and NFPA and UL Canada codes are completely separate from those in the U.S. Once referenced in fire and building code regulations and legislation, codes and standards become legally enforceable.

Storage is not specifically identified in Ontario Energy Board (OEB) codes. To reduce the risk of inconsistent application of the OEB regulatory framework to storage-related proposals, the Independent Electricity System Operator (IESO) recommended the OEB review its codes to consider energy storage participation and its regulatory framework, including processes and requirements for connections. OFA recommends additional considerations; that the OEB codes cite and adopt NFPA codes related to the safety, installation, operation, materials, and emergency systems (event prevention and fire suppression) of Li-ion battery storage systems connected to Ontario's grid systems.

While some NFPA and UL codes are adopted in Canada, there are several NFPA and UL codes and standards that should also be adopted including UL 9540 Energy Storage Systems and

Equipment, UL 9540A Test Method for Evaluating Thermal Runaway Fire Propagation in BESS, and NFPA 855 Standard for the Installation of Stationary Energy Storage Systems

OFA Recommendations: Adoption of Appropriate Codes and Standards

3. that the Ontario Government recognize and adopt UL and NFPA codes and standards in applicable energy regulations;
4. that Ontario's energy regulators cite these codes and standards, and contractually require utility-scale BESS proponents and owners to comply with appropriate UL and NFPA codes and standards;
5. that, as technology advances, and codes and standards are amended, BESS proponents and owners be required to comply with current versions.

The Ontario Fire Code (OFC) regulates BESS installation, maintenance, and operation. It requires that BESS be installed in compliance with the manufacturer's instructions and certain codes and standards, such as the National Building Code of Canada (NBCC) and the Canadian Electrical Code (CEC). Because modular outdoor BESS may not require local building permits, once standards and codes are recognized in related legislation, regulators are able to obligate qualified person accountabilities.

OFA Recommendation: Qualified Professionals, Compliant With Building and Electrical Codes

6. that project proponents and owners be required to work with qualified and experienced professionals to ensure that BESS installations meet all relevant safety codes and standards, and to regularly inspect and maintain the system to ensure ongoing safety.

Electricity Project Environmental Approvals

Ontario's Guide to Environmental Approval Requirements (GEAR) for Electricity Projects lists Environmental Approval requirements based on Resource Types. Storage is not generation so BESS are non-designated Class A resource types under GEAR, and regardless of size, do not require an Environmental Assessment for approval. Although the likelihood of catastrophic failure is low, the degree of environmental impacts of such events are large. We support ensuring there is some type of environmental oversight for BESS facilities.

OFA Recommendation: Approval Mechanism for Environmental Containment and Oversight

7. that considering their complexity and uniqueness, utility-scale BESS require Environmental Approval, Environmental Compliance Approval, or similar approval tools. This is meant to ensure environmental containment and oversight, including ground and surface water, air quality, soil and related considerations, and ancillary structures.

Proponents and owners must be contractually obligated to restore land, in the event of a BESS failure, and at decommissioning, obligated to restore the land to its original purpose and productive capacity.

Land Use

While utility-scale BESS could reach 2,500 MW by 2027, the IESO's Pathways Report envisions limited additional BESS in the transmission and distribution systems, Pathways does envision up to 69,000 MW of new and replacement grid system infrastructure required to meet 2050 electrification targets. These assets will mostly be decentralized in rural regions.

OFA Recommendations: Protect Farm Lands

8. that regulators and the Ministry of Energy prioritize the siting of all energy infrastructure on commercial and industrial land and not allow siting on Canada Land Class 1 through 4 or Specialty Crop Lands.

Only after alternative locations have been evaluated, and there are no reasonable alternative locations which avoid prime agricultural areas, or prime agricultural areas with lower priority agricultural lands, should rural lands be considered. This is meant to ensure the avoidance of siting infrastructure on Ontario's finite and declining farm lands.

Minimum Set Back Distances For BESS Facilities

Hydro One transmission assets are critical infrastructure and prolonged interruption or failure could impact millions of Ontarians. Noting that the existing NFPA 855 standard of a 30.6 metres setback may risk the integrity of their transmission assets, Hydro One developed new setback requirements¹, which increase the minimum setback distance for BESS to transmission rights-of-way by five-to-sixteen times, depending on asset voltage. It would be prudent to consider increasing all setback requirements for utility-scale BESS in Ontario.

While project proponents will need to invest more capital to extend the distance from their storage facility to transmission connection points, the additional costs are minor in comparison to the decades of income project investors stand to earn. Hydro One's prudent avoidance should extend to people, livestock, and buildings, by obligating proponents to increase the minimum setback distance to reduce the severity of damage, in the case of a BESS event.

OFA Recommendation: More Stringent Setback Requirements

9. that the IESO and the OEB adopt more stringent set back requirements for all utility-scale BESS, and that proponents be required to increase the setback requirement to agricultural and residential buildings, and populations, and at least double the 30.6 metre distance from the battery containers adopted in NFPA 855, based on prudent avoidance.

The footprint that up to 2,500 MW of battery storage will require is small, compared to the scale of electricity infrastructure Ontario prepares to build in the next twenty-five years. OFA supports

¹ *BESS Fire Protection Risk & Response Assessment Standard*, by Fire & Risk Alliance, LLC
https://www.hydroone.com/businessservices/generators/Documents/Fire_Protection_Risk_and_Response_Assessment_Standard.pdf Section.7.3 BESS Setback Requirement

the initiative that the Ministry of Energy has undertaken to prepare now for that buildout. We also support a procurement process that reduces the impacts to, and concerns of, people and businesses in rural Ontario.

While it is critical that we begin the work now to prepare for higher demand, we recommend energy regulators proceed carefully to ensure our critical food systems are not compromised to reach electrification goals. Considering the scale of this clean electricity capacity buildout, in both the transmission and distribution systems, and with much of this infrastructure decentralized in rural areas, OFA hopes you will adopt these recommendations and ensure the safe, fair and reasonable buildout of energy assets in Ontario.

Finally, OFA would like to recognize the engagement that the IESO has provided us, and we look forward to continuing this discussion with Ontario's energy regulators and the Ministry of Energy.

Sincerely,



Drew Spoelstra
President

C.C. Hon. Lisa Thompson, Minister, Agriculture, Food and Rural Affairs,
Minister.omafra@ontario.ca
William Sheffield, Chair, IESO Board of Directors
Glenn O'Farrell, Acting Chair, Ontario Energy Board
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