Attachment-1 Supporting Project Information for Alectra Convergent LP's Battery Energy Storage System (BESS) Project Proposal

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Example Picture of a Battery Energy Storage System .. Error! Bookmark not defined.

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Purpose of Independent Electricity System Operator (IESO) Request for Qualifications:

After more than a decade of strong supply, Ontario is entering a period of emerging electricity system needs, driven by increased demand, the retirement of the Pickering nuclear plant, the refurbishment of other nuclear generating units, as well as expiring contracts with facilities. The long-term request for proposals (the "LT1 RFP"), is intended to acquire capacity services to meet system reliability needs from New Build Electricity resources starting in 2027 or earlier.

A complimentary mechanism outlined in the Annual Acquisition Report, the Independent Electricity System Operator (IESO) is seeking to procure approximately 2,500 Mega Watts (MW) of electricity reliability services from New Build Electricity resources through the LT1 RFP, measured on an effective capacity basis. The Expedited Process will seek to acquire a minimum of 1,000 MW of additional effective capacity.

The LT1 RFP, together with the Expedited Process, is expected to competitively procure year-round effective capacity from dispatchable New Build resources, including New Build facilities incorporating electricity generation and storage, registered or able to become registered in the IESO Administered Markets, larger than 1 MW and which can deliver a continuous amount of Electricity to a connection point on a Distribution System or Transmission System for at least four (4) consecutive hours.

Alectra Energy Solutions in partnership with Convergent Energy + Power is requesting a Council Support Resolution for the proposed location of the joint project being put forward by both companies. Projects are evaluated primarily on bid price, but there are also non-price criteria scored during evaluation which can enhance the score of projects able to demonstrate local governing body support, along with other criteria. A Municipal Council Resolution is an ultimate requirement of all successful bids, however, obtaining **Municipal Council Support Resolutions before Dec. 20, 2022**, will improve applicable project scores and increase our chances of bringing this Alectra Convergent Development LP project to fruition. The support resolution would award the companies with an additional three (3) points on the RFQ submission. If the proposed location and project are successful in passing the qualification stage, the companies will then bid on the RFP in Q1 of 2023. The following pages outline the proposed project, location, and benefits of the project to the City.

The Proposed Project

What Battery Energy Storage Systems (BESS) are:

Battery Energy Storage Systems, or BESS, are rechargeable batteries that can store energy from different sources or during off-peak hours and discharge it when needed.

MWs being proposed and length of time:
The Guelph site being considered will connect to the Alectra Utilities owned Arlen Transformer Station. We are proposing up to 20 MWh system.

What it does:
Utility scale BESS consist of one or more batteries and are typically used to balance the supply and demand of the provincial electricity grid. These systems also have the capability to improve grid stability and provide backup power in some applications.

Technology specs:
Only proven and top tier equipment suppliers will be used. Long-term quality and capacity guarantees will be basic requirements, along with superior safety related track records. Specific power density and system efficiencies vary slightly and may impact space and other project specific information provided below.

Size of the project:
Up to 30,000 square feet pending IESO site approvals.

Safety:
Safety is a main component of these installations. Tier 1 suppliers include safety in all aspects of their designs from the individual battery cell design, to factory installed connections between cells, up to system level battery monitoring systems (BMS) that incorporate the latest in multi-level fault detection, isolation, and protection features. Noise emissions are generally lower than many HVAC systems and environmental studies will be performed at each site to ensure no adverse impacts to all adjacent properties and surrounding areas.

Other Items:

- Will work with the City to adhere to zoning, landscaping, and beautification standards.
- The site will be secured and monitored on a 24/7 basis.

Location
The following figure highlights the proposed BESS location in consideration at the southeast portion of the Arlen Transformer Station. The Arlen Transformer Station is owned by Alectra Utilities and is located at 436 Clair Road West, Guelph.

Figure 1: An aerial view of the proposed BESS site at the Arlen Transformer Station.

The following figure shows an example of a set of battery energy storage system units lined up at a transformer station.

Figure 2: Example Picture of a Battery Energy Storage System.

Community Benefit Plan

Financial:

- Dividends: Alectra Energy Services, a subsidiary of Alectra Inc, stands to benefit from consistent revenues as a successful proponent of this RFP.
- Increased property tax and permitting revenues for the City

Reliability and Resiliency:

- New local storage assets would result in reduced outages in the community during extreme weather events, and improve Alectra's restoration timeline when outages do happen.

Jobs and Economic Development:

- Support faster and more affordable connection of new loads; alternative to traditional poles and wires infrastructure.
- This will allow the city to be more strategic in realizing their economic development goals when sourcing large projects, such as film studios, data centres and manufacturing facilities.

Environmental benefits:

- New storage capacity will reduce Ontario's need to rely on gas generation in the coming years.
- Battery storage is clean and generally uses non-emitting power such as hydro, nuclear and renewables generated at off-peak times.