Feedback Form

Electricity Planning in the West of London Area – July 15, 2021

Feedback Provided by:

Name: Robert Sinclair

Title: Advisor

Organization: Heliene Inc.

Email: [redacted]

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West of London Bulk Plan

Topic	Feedback
What feedback do you have regarding the preferred option of a combination of new transmission line from Longwood TS (near London) to Lakeshore TS (Leamington) and local generation?	See general comments below
What feedback do you have regarding a 230 kV versus 500 kV line?	See general comments below
What other information should be considered in finalizing the recommended solution and final report?	See general comments below

Topic	Feedback
What feedback do you have regarding the proposed list and format of datasets that will be made available with the West of London Bulk Plan (see Appendix)?	See general comments below

Windsor-Essex Integrated Regional Resource Plan (IRRP) Addendum

Topic	Feedback
What feedback do you have regarding the preferred option for additional local 230 kV load supply stations and connection lines to the Kingsville area?	See general comments below
What feedback do you have regarding the options to address load restoration needs in the Kingsville and Leamington area? Including a potential new 230 kV double-circuit line between Leamington TS and the proposed new stations, or resource alternatives.	See general comments below
What feedback do you have regarding the considerations for long-term generation in the Windsor area?	See general comments below
What other information should be considered in finalizing the recommended solution and final report?	See general comments below

General Comments/Feedback

Heliene wishes to thank the IESO for the engagement activities it has undertaken for many years regarding the West of London Bulk System and Windsor-Essex Regional Planning Area. The information that has been shared while high level in nature has supported healthy discussion amongst stakeholders. Heliene has followed this engagement in the background for some time and now wishes to share its thoughts and concerns regarding the identified options and supporting processes.

Heliene will focus its comments on the following themes:

- Increase focus of the Addendum IRRP on local generation and in-particular behind the meter (BTM) resources that may be able to offer electricity services at rates equivalent to other options.
- Provide location and value signals and reduce barriers to selling energy services to the grid for load customers that integrate energy efficiency and generation resources into their facilities and operations. This requires the following:
    - Providing clarity as to where, when and how much capacity, energy and other services are required by the local system and what it is worth
    - Ensuring sufficient connection capacity for generation at stations and on feeders connecting customers to the grid
    - Creating continuous intake mechanisms (local markets, procurements, or programs) that signal the need for services and enable customers to sell electricity services to the grid with minimal transaction cost on an ongoing basis. Mechanisms with continuous intake are necessary as investment timing decisions of operators often don't align with IESO procurements.

It has become clear in 2021 that there is a growing need for additional provincial and local supply capacity (identified in the IESO's AAR) in the same timeframe as new transmission capacity is being considered to serve West of London and Windsor-Essex. Heliene supports efforts to increase the role of local generation in meeting local needs. The role that BTM or facility integrated generation and efficiency resources (PV, storage, lighting solutions, among others) can play in managing load growth and meeting other system needs should be fully understood before long-term investments in wires and stations or existing fossil fuel resources are re-contracted. Growers who are driving growth should be able to be part of the solutions for this region. Therefore, the Windsor-Essex Addendum IRRP should undertake a deeper evaluation of BTM generation and energy efficiency to better understand their potential to reduce load growth and meet system needs at equivalent costs. The IESO should also undertake analysis to better understand the barriers that exist for small and medium sized BTM generation to participate in existing and proposed resource acquisition vehicles/mechanisms. This may require additional information sharing among the IESO and stakeholders to ensure the IESO has the most current data set to undertake this evaluation with. Stakeholders as already identified in previous sessions also require additional and more detailed information regarding system needs, timing and location in order to provide the best information to the IESO.

Greenhouse operators typically make decisions to invest in energy efficiency and generation technology while planning new facilities, expansions, or refurbishment of existing facilities. Greenhouse operators that develop facility integrated generation and efficiency resources may be able and willing to offer electricity services to the grid at rates equivalent to other alternatives, while offsetting their impact on load growth and contributing to meeting local/bulk system needs. However, at present there is a lack of clarity regarding where, when and how much local generation capacity is required and can be connected. We hope through the West of London Bulk System Study and the Windsor-Essex Addendum IRRP clarity will be provided that will enable stakeholders to begin planning for the development local generation and efficiency resources.

For local generation to have a major impact on load growth in the Kingsville-Leamington area it is our understanding that connection capacity will have to increase. Hydro One's List of Station Capacities shows the combined available capacity of Kingsville TS and Leamington TS to be <225 MW currently. When Lakeshore TS comes into service it will increase area connection capacity, but it is unclear how the location and amount of future load and generation connection capacity is forecast to evolve and whether there will be sufficient connection capacity for local generation to be a primary supply option.

The IESO's capacity market and proposed RFP processes for local generation resources may be insufficient to attract small and medium sized BTM or facility integrated generation and efficiency projects. There are several reasons for this: the cost of participation in RFPs and the wholesale capacity market is high relative to the potential benefits for <5MW sized projects, the capacity market is not designed to target local needs and the timing of RFPs and other periodic procurements do not usually align with the decision timing required for new build, expansion, and refurb greenhouse projects. Because of these issues' greenhouse operators are less likely to invest in facility integrated generation and efficiency solutions and are instead incentivized to rely on grid expansion to meet their needs.

Heliene's development of greenhouse integrated PV (GiPV) paired with storage and smart lighting systems, can transition greenhouses from large, concentrated loads to become nearly net zero. Facilities with GiPV, storage and smart lighting would have the capability to deliver a substantial amount of energy during system peaks, while absorbing excess energy from the system overnight, and providing ancillary services around the clock. This pattern of operation would help to balance regional and provincial demand throughout the day and improve system operating conditions and economics.

We are finding that greenhouse operators are more likely to invest in and optimize the size of their energy efficiency and facility integrated generation projects (offsetting load growth and providing flexibility) if there is a clear and barrier free path to selling excess energy and other electricity services to the grid at their prevailing value. As identified earlier, decisions to invest in facility integrated energy efficiency and generation are made when a facility is being designed or when planning a major refurbishment or expansion. These decision timelines often do not correlate with IESO procurements and thus it can be difficult for operators to make decisions that are privately optimal while also supporting electricity system development. *Therefore, Heliene recommends that continuous intake mechanisms such as local markets, procurements, or programs, be created by the IESO or distributors (or both) that will provide a clear signal of the value and need for additional electricity services at the time that greenhouse operators are considering and committing to new build, expansion or refurb projects.*

In addition to meeting normal load supply capacity needs in the Kingsville-Leamington area, local generation, storage and load flexibility can support reducing the amount of load that would be interrupted by various contingencies on the 115 kW and 230 kV radial sub-systems supplying the area.

We thank the IESO for this opportunity to provide comments and feedback on the analysis and design of options for serving this important growth hub for southern Ontario. We are available to discuss options for further analysis and data sharing as well as other questions the IESO may have.

Appendix:

West of London – Information Sharing Summary

The following table outlines the datasets that will be made available with the West of London (WOL) bulk study, as well as the format.

Category	Format	Description of Data
Planning Assessment Criteria	PDF, in report	Technical requirements and standards used to determine needs
Load Forecast	PDF, in report	Methodology and sensitivities/known drivers
Load Forecast	PDF, in report	Total West of London Annual coincident low, reference, and high scenarios for summer and winter
Load Forecast	PDF, in report	Annual station peak forecasts, by region
Load Forecast	PDF, in report	Annual greenhouse peak forecasts
Load Forecast	PDF, in report	Peak segmentation assumptions for West of London stations with greenhouse load
Load Forecast	Excel	Forecast West of London greenhouse hourly load profiles (2021, 2035)
Load Forecast	Excel	Forecast West of London total hourly load profiles (2021, 2035)
Load Forecast	Excel	Historical hourly station load profiles (2019)
Interface Data	PDF, in report	Capacity need methodology, Interface definition, limits, and driving issues
Interface Data	Excel	Hourly capacity need, no reinforcements/recommendations (2028-2035)
Interface Data	Excel	Hourly capacity need, with near-term recommendations (2028-2035)
Interface Data	Excel	Hourly capacity need, with near- and long-term recommendations (2028-2035)
Analysis of Alternatives	PDF, in report	Assessment criteria and principles for decision-making
Economic Assessment Assumptions	PDF, in report	Assumptions used in the analysis and evaluation of options