

Subject: Power Advisory Energy Report - Options for the City of Windsor - City Wide

Reference:

Date to Council: September 26, 2022
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Administration
Report Date: September 9, 2022
Clerk's File #: MD/14028

To: Mayor and Members of City Council

Recommendation:

- I. **THAT** the report from the Commissioner of Economic Development and Innovation **BE RECEIVED** for information; and,
- II. **THAT** City Council **SUPPORT IN PRINCIPLE** the five proposed electricity transmission infrastructure projects West of London, as recommended by the Independent Electricity System Operator (IESO), and the measures to ensure their rapid completion announced by the Province of Ontario; and,
- III. **THAT** City Council **ADVOCATE** for the Province of Ontario to pursue energy efficiency and green energy alternatives, while maintaining the existing energy generation initiatives until such time as affordable, sufficient and sustainable alternatives are in place; and further, to help alleviate regional electricity supply constraints prior to the completion of new electricity transmission infrastructure in 2030; and,
- IV. **THAT** City Council **SUPPORT** Independent Electricity System Operator (IESO) efforts to immediately re-contract the Brighton Beach Generating Station to supply power for local job creation and economic expansion in Windsor-Essex; and,

- V. **THAT** City Council **ADVOCATE** for the Province of Ontario to investigate near-term firm electricity imports from the State of Michigan via the Windsor-Detroit Energy Intertie; and,
- VI. **THAT** City Council **SUPPORT IN PRINCIPLE** the City of Windsor as a host for future projects that will enhance the energy supply, subject to approval through the appropriate federal, provincial and Council processes; and,
- VII. **THAT** Administration **BE AUTHORIZED** to participate in, and provide comment to, any public consultations regarding energy supply and development to convey the interests of the Corporation of the City of Windsor; and,
- VIII. **THAT** City Council **REQUEST** that the Board of Directors, Invest WindsorEssex engage their resources, from a regional representation and advocacy perspective, to track efforts and vigorously advocate on behalf of the region for short, medium and long term solutions for adequate and sustainable energy solutions to support economic investments and growth; and,
- IX. **THAT** City Council **DIRECT** Administration to facilitate a presentation by Power Advisory to Essex County Council at their earliest opportunity; and further, pursuant to approval of the Recommendations noted above; and further,
- X. **THAT** City Council **REQUEST** that Essex County Council pass a resolution endorsing the Recommendations of Windsor City Council to ensure a consistent approach to this regional issue.

Executive Summary:

N/A.

Background:

Strong economic development and electrification of transportation are significantly impacting Ontario's electricity system, driving up demand and increasing regional needs. Upcoming retirements and refurbishments in nuclear supply, along with many expiring generation contracts, are also contributing to growing electricity requirements across the province. Significant load growth regionally has strained the existing transmission infrastructure. In particular, agricultural load growth from greenhouses in the Leamington and Kingsville region resulted in the Independent Electricity System Operator (IESO) issuing a letter in January 2019 to Hydro One to develop a new double 230 kV transmission circuit from the Chatham Station to a new Lakeshore Station to meet the rapid demand growth. In addition, in 2021 the Ontario Minister of Energy directed IESO to re-contract with Atura Power for the Brighton Beach Generating Station.

On March 23, 2022, LG Energy Solutions and Stellantis announced their plans to establish a joint venture, now called NextStar Energy, to produce lithium-ion batteries in Windsor.

Subsequent to that announcement, the region received, and continues to receive, inquiries from companies and organizations seeking to establish themselves in close proximity to the battery facility. The requirements for power by announced and anticipated investments are substantial.

In May 2022, media outlets reported that a potential investment by LG Chemical was at risk due to insufficient electricity grid infrastructure. The proposed LG Chem opportunity was anticipated to add another 1,000 to 1,500 jobs in the region. To date the company reports it is still evaluating potential sites and no decision has been made.

Despite direction from IESO to increase supply, and the provincial announcement to pursue new electricity transmission infrastructure projects in southwestern Ontario, and measures to expedite the timelines for the projects to become operational, Administration considered it prudent to investigate electricity capacity and constraints impacting investments and economic development in the City of Windsor and surrounding areas. Accordingly, pursuant to Purchasing By-law 93-2012 (CAOP 74-2022), Administration secured Power Advisory LLC to undertake a study and recommend actions to alleviate potential electricity supply and transmission challenges. Power Advisory sought comment from the Ministry of Energy, IESO, Hydro One, Enwin and Essex Powerlines in the preparation of their report, attached as Appendix A.

Discussion:

The Windsor Works economic development strategy approved by City Council in February 2021 (CR69/2021) notes the opportunity for the city to position itself favourably to support the electric and autonomous vehicle industry.

The Infrastructure pillar of the L.I.F.T strategy recommends that Windsor “*demonstrate its readiness to be a site where new low-emission vehicles are used as well as made*”, and the Future Economy pillar recommends that the city “*establish Canada’s first ramp up factory for electric and autonomous vehicles and work with the Province to prioritize the area for battery production by 2025*”.

While Windsor is the successful location for the NextStar Energy plant, to achieve continued economic development success, it is imperative that NextStar Energy and future developments have confidence in a sufficient and sustainable power supply.

Current power producing resources across Ontario are being retired, discontinued or are undergoing refurbishment. These resources require replacement in order to maintain existing service, which is a separate issue from system growth. As previously identified, system growth is on the horizon, but interim solutions are required to meet demand until those projects are fully operational.

The Independent Electricity System Operator (IESO) is responsible for Ontario-wide power system planning and ensuring the province has sufficient resources to meet its electricity demand. The IESO is responsible for preparing Integrated Regional Resource

Plans (IRRP) for each planning region across Ontario. The IESO's West of London Area consists of the Windsor-Essex Region and the Chatham-Kent-Sarnia Region.

Power Advisory LLC, established in 2007, has monitored the planning activities in the Windsor-Essex and Southwestern Ontario area closely for many years. This consulting firm specializes in electricity markets and bases their advice on an understanding of fundamental economic drivers as shaped by electricity market structures, electricity market design, project development and associated commercial and financing agreements, regulatory frameworks, and market behavior.

In addition to providing information on current and anticipated state of energy resources available to the region as requested, Power Advisory consultants analyzed government, IESO and Ontario Energy Board proposals and policy positions related to electricity supply or transmission capacity impacting Windsor, and crafted a response from the city relative to those policies, proposals and other consultation opportunities for submission.

On April 4, 2022 the provincial government announced a potential \$1 billion investment, directing Hydro One to develop and seek approval for five electricity transmission expansion projects in the West of London Area:

- The Chatham to Lakeshore Line, a 230-kilovolt line from Chatham Switching Station to the new Lakeshore Transformer Station currently under construction.
- The St. Clair Line, a 230-kilovolt line from Lambton Transformer Station, south of Sarnia, to Chatham Switching Station.
- The Longwood to Lakeshore Line, a 500-kilovolt line from Longwood Transformer Station, west of London, to the new Lakeshore Transformer Station.
- A second 500-kilovolt line from Longwood Transformer Station to Lakeshore Transformer Station.
- A 230-kilovolt line that would run from the Windsor area to Lakeshore Transformer station.

Anticipated completion dates for these projects range from 2024 to 2030. Transmission development takes time and involves significant investment and coordination. It is critical that sufficient electricity be available for existing customers and economic expansion initiatives in advance of the announced infrastructure becoming operational.

To address system demands in the interim, City Council is being asked to endorse efforts to re-contract the Brighton Beach Generating Station. IESO has deemed this facility essential for resource security in the region, and in fact the Minister of Energy has directed IESO to enter negotiations with the owner, Atura Power, for continued service. Further, as there are four circuits that connect Ontario and Michigan, Council is encouraged to request that the Province investigate imports from Michigan via the Windsor-Detroit Energy Intertie. The intertie circuit in the Windsor-Essex area joins three other connection points located in the Lambton and Sarnia areas. It is important to note that these areas are also facing capacity pressures.

The Council of the Town of Halton Hills also recently discussed a motion regarding energy requirements and solutions at their meeting of July 4, 2022. A copy of their council resolution is attached as Appendix B.

The solutions as noted above are short-term pending the pursuit of energy conservation and development of green energy alternatives. The IESO continues to explore opportunities towards zero emissions and supports decarbonization in other sectors.

Similarly, City Council has expressed its support for sustainable energy through the adoption of a Community Energy Plan Vision:

The Community Energy Plan aims to create economic advantage, mitigate climate change, and improve energy performance. It strives to position Windsor as an energy centre of excellence that boasts efficient, innovative, and reliable energy systems that contribute to the quality of life of residents and businesses.

The pursuit of green energy is articulated throughout Windsor Works. Further, Council has approved an Environmental Master Plan (2017), Community Energy Plan (2017), Corporate Climate Action Plan (2017) and Climate Change Adaptation Plan (2012).

The recommendations of this report are not suggesting that efforts to achieve clean, sustainable and reliable energy solutions are discounted, but rather that existing energy generation initiatives are maintained in the short term for the economic benefit of the region. Ensuring the Brighton Beach generating station remains operational provides a local energy supply for existing customers, the NextStar Energy plant and expected future electricity needs. As a border community, Windsor has the opportunity to request that the Province explore additional local/regional supply capacity from the United States to meet local electricity needs, similar to how other jurisdictions in Ontario work with Quebec and Manitoba for supply. Acceptance of the recommendations confirms City Council's support for local electrical stability while pursuing its climate change, energy sustainability and efficiency goals.

Next Steps:

IESO acknowledges the role of municipalities in the procurement and development of new generation projects, and encourages the development of local solutions.

Power Advisory recommends City Council actively pursue advocacy and engagement opportunities, leverage its own assets – buildings and land – for electricity resource development, and articulate their support through resolutions. As part of the IESO's ongoing RFP processes, new generation and storage resources will be prioritized if they have secured council support via resolution prior to the proposal submission deadline. As a matter of course, Administration will bring a report for any proposal to City Council for consideration. In advance of any specific proposals coming forward, Administration is recommending City Council articulate their openness to hosting new energy transmission and generation projects to be sited within the City of Windsor.

Municipalities also have authority with respect to the permitting and approvals process of renewable generation. As part of the environmental permitting process, any new generating or storage resource must have planning approval prior to construction. As

IESO's procurement processes unfold, it is anticipated that the volume of inquiries and permit requests will impact the already constrained resources of the City's Planning and Building departments.

City Administration has taken the lead to fully understand the current and future state of energy requirements for the region, working closely with Power Advisory who are actively engaging with the Ministry of Energy, IESO, Hydro One, Enbridge, Enwin, and other market participants.

As experts in the energy industry, Power Advisory LLC has provided the landscape and potential options to Council; however, the need for immediate and sustainable green energy initiatives is a regional issue and ongoing monitoring, advocacy and engagement is imperative.

IESO continues to engage with industry stakeholders, Indigenous communities and municipalities, to create a broader understanding of the needs and options available to meet those needs. IESO has publicly stated that municipal support will be required for any projects to advance through their procurement process.

Power Advisory recommends that the region [City of Windsor, County of Essex and Invest WindsorEssex] actively participate in these engagements to provide insight to economic development and growth opportunities that would impact electricity needs in Windsor and Essex County.

Administration proposes that as the regional economic development agency, Invest WindsorEssex take a lead role and dedicate resources to ensure ongoing advocacy and engagement with IESO, Ministry of Energy, Hydro One, local energy providers and any other relevant organizations. Early and ongoing engagement is critical. InvestWE is often the first point of contact for international investments and local companies seeking to expand, which provides them an early line of sight when it comes to potential investments in the region. Windsor and Essex County must anticipate the needs of companies looking to establish in Windsor-Essex and ensure regional economic development needs are addressed to capitalize on any opportunities for investment and jobs.

While Invest WindsorEssex can represent the region as a whole, each municipality also has a role to play. Councils can proactively consider municipally owned lands, land use planning and zoning by-laws to support energy projects, and pass resolutions in support of specific projects.

City Administration has met with Administrative representatives from the County of Essex to ensure transparency with regard to Power Advisory's recommendations and the proposal to have Invest WindsorEssex represent the region on the critical issue of power supply.

Administration suggests that Power Advisory also present their research and recommendations to Essex County Council, and to further ensure that efforts across all levels in the region are coordinated and strategic, that the County of Essex co-ordinate

with the seven local municipalities to establish a streamlined process to identify similar pro-active steps to respond to energy planning.

Risk Analysis:

Despite the rapid planning activities to supplement the power supply, new transmission lines are not expected to be in-service for a number of years (i.e., 2024, 2028, and 2030+). The timelines required to develop and construct new transmission lines poses a risk to Windsor and surrounding areas as the connection capability for new load customers will be constrained unless alternative bridging solutions can be implemented.

While it is incumbent to pursue these alternatives, there is no guarantee that any will come to fruition in a timely manner.

There is a significant risk that the ability of Windsor and region to secure additional investment opportunities will be hindered without confidence that the electricity supply is robust and sustainable.

These risks are mitigated through maintaining and expanding existing energy production options in the short-term.

Climate Change Risks

Climate Change Mitigation:

The Community Energy Plan's vision and associated strategies were developed to ensure that climate change mitigation efforts complemented economic development initiatives. The NextStar Energy plant is one example of the green energy transition that will support Canada's goal of a net-zero emission 2050.

Increasing natural gas usage for electricity generation in Ontario will affect Community and Corporate emissions inventories across the Province. However, IESO is currently engaging with stakeholders to inform the development of achievable pathways to zero emissions in the electricity sector. IESO is scheduled to report back to the Ministry of Energy in Q4 2022. Administration will continue to review reports of decarbonization from IESO.

Regardless of the Ontario electricity generation mix, the strategies outlined in the Community Energy Plan remain valid and support the principles of energy conservation and renewable energy generation.

Climate Change Adaptation:

The City's 2020 Climate Change Adaptation Plan identifies that an increase in summer temperatures will increase the electricity demand.

Financial Matters:

The cost to secure Power Advisory LLC was \$136,000 excluding HST, which will be charged to the Windsor Works capital project.

Consultations:

Planning Department – Thom Hunt, Neil Robertson

Building Department – Joe Baker

Economic Development – Milan Vujanovic

Finance – Rosa Maria Scalia

Asset Planning and Environmental Sustainability –Sokol Aliko, Karina Richters, Michelle Moxley-Peltier

Infrastructure Services – Stacey McGuire, Shawna Boakes

Invest Windsor-Essex – Stephen MacKenzie

Energy industry organizations consulted by Power Advisory LLC are noted within the body of their report.

Conclusion:

It is imperative that a reliable, sufficient, and affordable supply of power be available across Ontario to support planned and anticipated growth. Although energy capacity and supply is a provincial responsibility that requires provincial leadership, decisions made by upper levels of government have impacts at the municipal level. It is imperative to protect local economic and resident interests to ensure a superior quality of life for all.

The report from Power Advisory outlines steps that the municipality can undertake to explore and facilitate energy capability in the region and provides elected officials, administrative staff and other partners with the information to speak to current and future capacity, and assure businesses that Windsor is an attractive location to invest.

Planning Act Matters:

n/a

Approvals:

Name	Title
Sandra Bradt	Executive Initiatives Coordinator
Jelena Payne	Commissioner, Economic Development and Innovation

Name	Title
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Appendices:

- 1 Power Advisory Report to City Council
- 2 Appendix B - Halton Hills Council Resolution 7-4-2022