**DECEMBER 7, 2021** 

#### Chatham-Kent/Lambton/Sarnia Region Scoping Assessment

#### Regional Planning Engagement Webinar



#### Objectives of Today's Engagement Webinar

- To provide an overview of the regional planning activities underway in the Chatham-Kent/Lambton/Sarnia region
- To discuss and seek feedback on the draft Chatham-Kent/Lambton/Sarnia Scoping Assessment that sets out the regional planning approach for the needs identified for further assessment
- To outline next steps



# Seeking Input

Some key questions to consider when reviewing the Scoping Assessment:

- What additional information that should be considered as part of the Scoping Assessment?
- Do the areas identified as requiring further study through a regional planning approach resonate based on local developments?
- What other areas or specific considerations that should be examined through regional planning?

Please submit your written comments by email to <u>engagement@ieso.ca</u> by <u>December 21</u>



# Overview of the IESO and the Regional Planning Process



#### The Players in Ontario's Electricity Sector

#### What the IESO does

The IESO works at the heart of Ontario's power system, balancing supply and demand for electricity on a second-by-second basis and directing its flow across Ontario's high-voltage transmission lines so it's available to you. Ensuring there is enough energy to meet Ontario's demand 24 hours a day, 7 days a week, is highly complex and requires close coordination of the many parts that make up the system. These include generators, transmitters and distributors that own and operate the lines through which electricity travels, as well as the large and residential consumers that help us respond to changing needs.





#### Who We Are and What We Do



Reliably operate Ontario's province-wide system 24/7



#### Support innovation



Create electricity market efficiencies



Work closely with communities to explore sustainable options



Plan for Ontario's future energy needs



Enable province-wide energy efficiency



#### **Electricity Planning in Ontario**





# 21 Electricity Regional Planning Regions

- Based on electricity infrastructure boundaries
- Planning based on each region's unique needs and characteristics





# **Key Initiatives**

- <u>West of London Bulk Plan</u>\* completed in September 2021 that recommended:
  - New double circuit 230 kV transmission line from Lambton to Chatham (to be in service by 2028)
  - New single circuit 500 kV transmission line from Longwood (near the City of London) to Lakeshore (to be in service by 2030)
  - Local generation (Brighton Beach contract extension until 2028 and 550 MW of new resources needed by 2030)
- New regional electricity planning cycle now underway for Chatham-Kent/Lambton/Sarnia









# What is a Scoping Assessment?

- The Scoping Assessment is triggered following the completion of a Needs Assessment
- It is led by the IESO and includes the transmitter and local distribution companies (LDCs) in the region

#### **Key Elements**

- Review needs that require comprehensive planning
- Determine the geographic grouping (subregions) of needs
- Determine the appropriate regional planning approach and scope
- Establish the draft terms of reference for an Integrated Regional Resource Plan (IRRP); if one is required, and composition of the Technical Working Group



# Identifying the Planning Approach

Approach	Typical Considerations	Parties Involved
IRRP	Where a greater range of options, including non-wires, are to be considered, and/or closer coordination with communities and stakeholders is required	IESO (lead) Transmitter LDCs
Regional Infrastructure Plan (RIP)	Considers more straight-forward wires-only options with limited engagement	Transmitter (lead) LDCs IESO
Local Planning	No further regional coordination is needed	Transmitter LDCs



## Draft Chatham-Kent/Lambton/Sarnia Region Scoping Assessment



#### Chatham-Kent/Lambton/Sarnia Region Overview

- Comprised of a 230 kV and 115 kV transmission system located between just west of the City of London and east of Essex County
- Includes the County of Lambton encompassing the City of Sarnia, townships of Petrolia, Plympton-Wyoming, Dawn-Euphemia, Enniskillen, St. Clair and Warwick, municipalities of Lambton Shores and Brooke-Alvinston, and Villages of Oil Springs and Point Edward, Municipality of Chatham-Kent, and portions of Huron County (South Huron) and Elgin County (West Elgin and Newbury)





#### Scoping Assessment Working Group





#### Previous Regional Electricity Planning Cycle

- The first cycle of planning was completed in 2016 and determined that the existing electricity infrastructure is adequate to meet the region's emerging needs over the next 20 years
- Since then, some work has been completed to address local electricity infrastructure reaching end-of-life
- Studies have also been undertaken to examine growth in the greenhouse sector and in Dresden to address forecast agricultural load growth
  - Further details provided on next slide



#### **Between-Cycle Activities**

- <u>Greenhouse Energy Profile Study</u> (2019) examined Chatham-Kent as one of the key regions in ON with a high concentration of indoor agriculture
- Dresden Connection Study was initiated to address forecast agricultural load growth
  - Geographic choice would be a new supply station connected to the Lambton-to-Chatham circuits, however this would worsen bulk constraints
  - Recommendations were deferred until a bulk plan was completed

- On Sept 23, 2021, IESO published the West of London bulk study
  - Recommended a 230 kV double-circuit reinforcement of the Lambton-to-Chatham corridor (in-service by 2028)
- New Dresden supply station should be connected to new 230 kV circuits on the Lambton-to-Chatham corridor
  - Connection of Dresden loads prior to this reinforcement will require interim measures



#### Preliminary Needs in Chatham-Kent/Lambton/Sarnia

• Broadly speaking, electricity needs\* in this region fall within the following categories:

#### System Capacity

 Refers to the ability of the electricity system to supply power to customers in the area, either by generating the power locally, or bringing it in through the transmission system

#### Asset End-of-Life

 Refers to aligning investments to replace aging transmission assets with evolving power system priorities

\*Needs may be further refined, and additional needs identified, following more detailed forecasting and evaluations which take place during subsequent stages of planning



# System Capacity Need in Dresden

- 129 MW of new agricultural load growth that cannot be accommodated at the closest existing station (Wallaceburg TS)
- Rapid load growth (50 MW increase in 2022, and ~20 MW/year over the next 5 years)
  - Equivalent to adding ~6,700 homes per year
- Studies show that a new supply station is required, connected to the new Lambton-to-Chatham circuits
- Interim measures may be required to enable load connections prior to 2028 (the target in-service date of the circuits)





#### **End-of-Life Needs**

- St Andrews TS, Lambton TS, and Scott TS (in Lambton County) and Kent TS (in Chatham-Kent) are approaching end-of-life
- Four 115 kV and one 230 kV circuit corridors are approaching endof-life
- End-of-life sustainment projects are planned which will address the asset replacement needs identified
- Load forecasts for the stations from the Needs Assessment stage account for known and anticipated increases



# Key Takeaways from Targeted Engagement

• Potential for strong local economic development in greenhouses, petro-chemical and industrial manufacturing across the region

#### **Chatham-Kent**

- Greenhouses expanding eastward from Windsor-Essex due to access to electricity capacity, gas and water
- Municipality is revising long-term growth forecast in anticipation of higher pace of residential and industrial growth
- Climate Change Action Plan is being developed, which may impact energy efficiency uptake and EV electrification

#### Sarnia-Lambton

- Prospective project developments in the greenhouse and bio-industrial sector, but details are not finalized yet
- Work is underway on a regional initiative for Sarnia-Lambton to become Ontario's <u>hydrogen hub</u>
- Potential shutdown of Enbridge's Line 5 pipeline that supplies Sarnia's biggest employers



#### Draft Scoping Assessment Considerations

When determining the planning approach for needs requiring coordination, consideration was given to whether these needs:

- Have the potential to be addressed by non-wires solutions
- Could be impacted by varying bulk systems flows
- Could potentially be addressed in an integrated manner
- Impact multiple LDCs in the sub-region
- Would require engagement and coordination with community-level energy planning activities



#### Draft Scoping Assessment Recommendations

# **Dresden Capacity Need:** A RIP is recommended:

- Bulk and local impacts have already been assessed through recent studies (West of London bulk plan, Dresden load connections study)
  - Existing studies can be leveraged to support interim measures
- Regional Infrastructure Planning will consider wires options to address capacity need, which more closely aligns with required timelines

**Monitor Regional Growth:** An IRRP is not recommended at this time due to:

- Uncertainty in regional development creating unknowns in electricity forecast scenarios
- Continue to monitor regional development and load growth; gauge the potential to trigger further regional planning, if and when required



#### Stakeholder Engagement and Next Steps



#### Your Feedback is Important

Some key questions to consider when reviewing the Scoping Assessment:

- What additional information that should be considered as part of the Scoping Assessment?
- Do the areas identified as requiring further study through a regional planning approach resonate based on local developments?
- What other areas or specific considerations that should be examined through regional planning?

Please submit your written comments by email to <u>engagement@ieso.ca</u> by <u>December 21</u>





Do you have any questions for clarification on the material presented today?

Submit questions via the web portal on the webinar window, or by email to engagement@ieso.ca



#### Next Steps

- Feedback due to <u>engagement@ieso.ca</u> December 21
- IESO to post and respond to feedback, as well as the final Scoping Assessment by December 30



# Keeping in Touch

- Subscribe to receive updates on the Chatham-Kent/Lambton/Sarnia regional initiatives on the <u>IESO website</u>
- Follow the Chatham-Kent/Lambton/Sarnia regional planning activities online
- Join Southwest Regional Electricity Network





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