AUGUST 12, 2021

Southern Huron-Perth
Integrated Regional Resource Plan (IRRP) Engagement Webinar #3

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Objectives of Today's Engagement Webinar

- To provide an update on the electricity planning underway in the Southern Huron-Perth (SHP) area
- To provide an overview of the options analysis and seek input on draft recommendations
- To outline next steps

Seeking Input

As you listen today, please consider the following questions to guide your feedback on the draft recommended plan for the SHP area:

- What information needs to be considered in these recommendations?
- What community feedback is there to the proposed recommendations?
- How can the IESO continue to engage with communities as these recommendations are implemented, or to help prepare for the next planning cycle?

Please submit your written comments by email to engagement@ieso.ca by September 2

Meeting Purpose

- To provide an update on the long-term electricity plan – Integrated Regional Resource Plan (IRRP) being developed for the Southern Huron-Perth area
- To discuss the recommended plan to address emerging electricity needs

Long-term Electricity Plan Status

Southern Huron-Perth Long-term Electricity Plan Status

- IRRP study work began in Q3 2019, and is on track for completion by Q3 2021
  - Electricity demand forecast and needs have been determined, potential options identified and evaluated, and draft recommendations developed
  - The next focus is on finalizing recommendations
- Community and stakeholder engagement has been ongoing
  - Two public webinars – August 2019 & October 2020
  - Discussions with local municipalities

What we've heard so far…

- Significant incremental residential growth is expected in parts of Huron, Perth and Middlesex counties
  - High growth in nearby urban centres (City of London, Region of Waterloo and City of Guelph) is pushing development to Lucan Biddulph, West Perth, Bayfield, Seaforth and Exeter areas
- Increased agricultural and industrial developments are also anticipated
- Local energy projects including solar PV are being considered to offset some growth
- No other major electricity concerns have been raised from the broader community

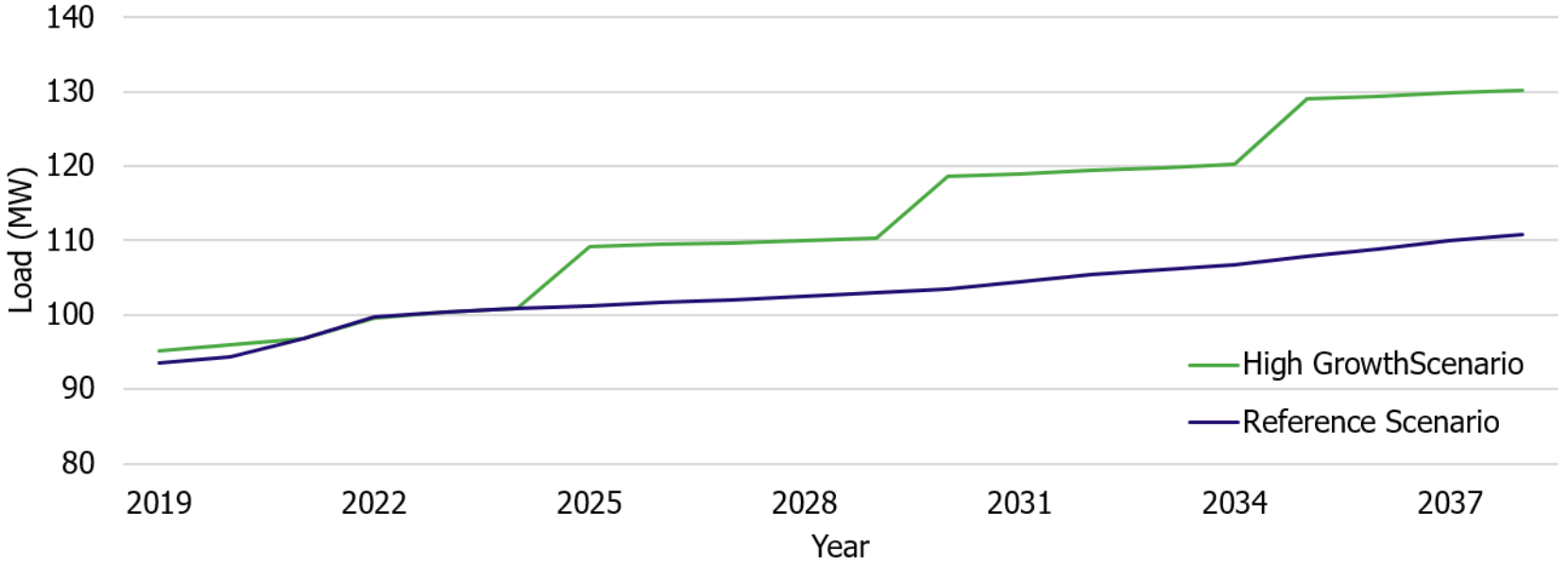
Electricity Demand Forecast Underlying Assumptions

- 10 MW of forecasted load growth initially anticipated from the expansion of an industrial facility in the area has been deferred (not expected for at least 5 years)
- 17 MW of load growth from other local developments – 8.5 MW of residential and commercial load growth and 7.5 MW of industrial load growth
- Accounts for Conservation and Demand Management (CDM) savings from Codes and Standards (C&S) and conservation programs (2019 base year)
- This comprises the Reference electricity demand forecast

Southern Huron Perth Scenarios Studied

- Reference Scenario is based on known and confirmed developments as outlined on the previous slide
- High Growth Scenario is based on the potential of other future developments
  - 15 MW additional load growth in the St Marys area
  - 9 MW additional load growth in the South Huron area

Summer Load Forecasts



Summary of Study Results

- No emerging electricity needs have been identified for the Reference scenario
- A capacity need emerges in 2030 for the High Growth scenario in cases of the loss or outage of a circuit supplying the area (D8S)
  - Up to ~21 MW is needed by 2038 (equivalent to demand required to power ~10,500 homes for one year)

Options Considered and Recommendations

Categories of Options – Definitions

Wires

- Traditional transmission assets such as switching stations, transformer stations, or transmission lines; may also include protection schemes and control and operational actions such as load rejection

Non-wires

- Local load modifying solutions such as distributed energy resources (including distributed generation/storage and demand response); and/or energy efficiency measures; and/or, large utility-scale generation facilities strategically located to alleviate a local reliability need

Evaluating Options

Potential solutions are evaluated based on the following key considerations:

Technical Feasibility	• Can the option actually be executed? i.e., proximity to customers, routing and spacing considerations, operations
Ability to Address Needs	• Are the number, magnitude, and diversity of needs adequately addressed?
Integration & Cost-Effectiveness	• What is the lowest cost solution considering the possibility that one option may be able to address multiple needs simultaneously? • Would a combination of option types be most effective?
Lead Time	• New transmission infrastructure or resource procurement/development could take 7-10 years – how does this compare to the timing of needs?

Potential Wires Options – High Growth Scenario

- To address the supply capacity need under the High Growth scenario, the following options were considered:
  - Transferring electricity load from one transformer station to another in the area –will need to be combined with another option (cost: $6-12 M)
  - Upgrading the 115 kV circuit L7S supplying the area – this would require installation of new poles along an existing right-of-way (cost: $10-15 M)
  - Targeted CDM – will need to be combined with another option (cost: $3 M)
- IESO will continue to monitor load growth in order to trigger next steps as required, based on community and stakeholder input

Non-wires Options: CDM

- Through the Indigenous Community Energy Plans, the IESO is currently working with communities to link potential plans with needs in the area
- Currently, the IESO's Save on Energy Local Initiatives is targeting local needs – the Southern Huron-Perth area has been flagged as having potential needs that could be addressed through future targeted CDM
- Additional CDM savings for Southern Huron-Perth is estimated to be 16.9 MW
  - ~1MW of which is already committed through existing programs
  - This would defer the need until 2035, for an investment of $3M

Proposed Recommendation

Near-term:

- Monitor load growth in the area
- Consider non-wires options through new and ongoing programs

Long-term:

- When forecasted load is expected to exceed system limits beyond 4MW within the next 5 years, pursue targeted CDM programs and implement load transfers to bridge any potential gap
  - If forecasted CDM activities change, consider option to reinforce 115kV circuit L7S

The Bottom Line

- Overall, no major emerging needs have been identified
- Although the capability of the electricity infrastructure is approaching its limits, local growth is slow and is not expected to require any action, however any small changes could significantly delay or advance need
- Due to the organic nature of growth and its amplitude, this is an ideal opportunity to consider targeted non-wires alternatives such as distributed energy resources, CDM, etc.
- Recommended plan is to monitor local load growth and consider targeted non-wires alternatives to further defer need
- In the event needs accelerate, pursue targeted CDM and wires solutions (load transfer/transmission reinforcement) developed for the High Growth scenario

Seeking Input

As you listen today, please consider the following questions to guide your feedback on the draft recommended plan for the SHP area:

- What information needs to be considered in these recommendations?
- What community feedback is there to the proposed recommendations?
- How can the IESO continue to engage with communities as these recommendations are implemented, or to help prepare for the next planning cycle?

Please submit your written comments by email to engagement@ieso.ca by September 2

Next Steps

Next Steps

- Deadline for written feedback on draft recommended plan – **September 2**
- Final IRRP posted – **mid-September**

Keeping in Touch

- Subscribe to receive updates on the SHP regional electricity planning initiatives on the IESO website – select Greater Bruce/Huron
- Follow the SHP regional planning activities on the dedicated engagement webpage
- Join the Southwest Regional Electricity Network on IESO Connects provide a platform for ongoing engagement on electricity issues

Questions?

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

Seeking Input on the Webinar

- Tell us about today
- Was the material clear? Did it cover what you expected?
- Was there enough opportunity to ask questions?
- Is there any way to improve these gatherings, e.g., speakers, presentations or technology?

Chat section is open for comments

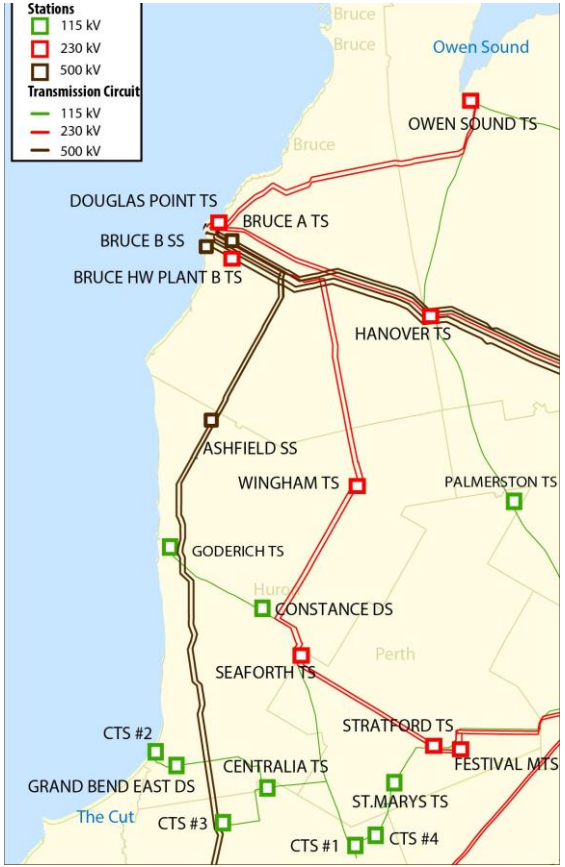
Appendix

21 Electricity Planning Regions

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

Greater Bruce/Huron Region

- Includes the counties of Bruce, Huron and Perth, and portions of Grey, Wellington, Waterloo, Oxford, Lambton and Middlesex counties
- Communities of Saugeen First Nation, Nawash First Nation, Chippewas of the Thames First Nation, Aamjiwnaang First Nation, Bkejwanong (Walpole Island First Nation), Chippewas of Kettle and Stony Point, Historic Saugeen Métis and Métis Nation of Ontario



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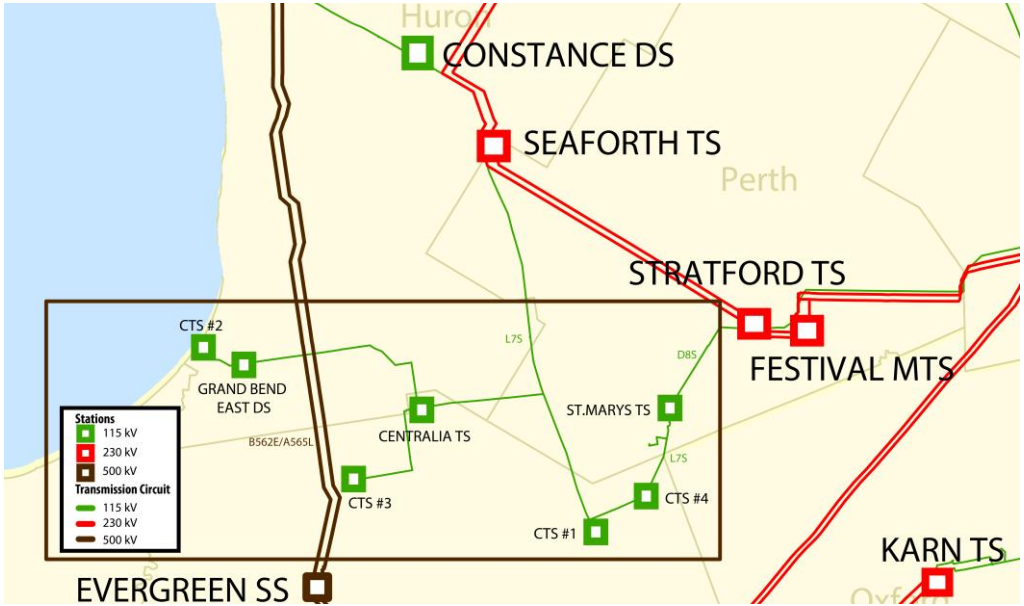
Southern Huron-Perth Sub-region

A long-term electricity plan – Integrated Regional Resource Plan (IRRP) is being developed for the southernmost portion of Greater Bruce/Huron region comprising of the municipalities of Bluewater, South Huron, Lambton Shores, Lucan Biddulph, Middlesex Centre, North Middlesex, Thames Centre, Zorra, Perth South, St. Marys and West Perth



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