



FEBRUARY 3, 2022

Niagara Regional Electricity Planning

Engagement Webinar #1

Objectives of Today's Engagement Webinar

- To provide an update on the electricity planning underway in Niagara Region
- To seek feedback on the demand forecast and planned engagement activities for the development of an electricity plan – Integrated Regional Resource Plan (IRRP) – for the Niagara Region
- To outline next steps

Agenda

1. Niagara Region Electricity Planning Status Update
2. Draft Electricity Demand Forecast
3. Community Engagement and Next Steps

Seeking Input

As you listen today, consider any additional factors that should be considered in:

- **Determining the electricity demand forecast for Niagara Region**
 - *What key developments, projects or initiatives should be considered? What other information should be taken into account that would influence the forecast?*
- **Identifying needs to be addressed**
 - *What areas of concern or interest about electricity should be considered as part of the planning process?*
- **Engaging with communities and interested parties**
 - *What information is important to provide throughout the engagement?*
 - *Does the proposed Engagement Plan provide sufficient scope and opportunities for input? What other engagement activities or methods should be considered?*

Please submit your written comments by email to
engagement@ieso.ca by February 24



Niagara Region Electricity Planning Status Update

Recap: Regional Planning Process Steps



Niagara Region

- 230 kV and 115 kV transmission system located between Lake Ontario and Lake Erie
- Composed of one upper-tier municipality (Regional Municipality of Niagara) and 12 lower-tier municipalities:
 - Fort Erie, Grimsby, Lincoln, Niagara Falls, Niagara-on-the-Lake, Pelham, Port Colborne, St. Catharines, Thorold, Wainfleet, Welland, and West Lincoln
- Includes First Nation communities and Métis Nation of Ontario councils



IRRP Working Group

Team Lead,
System Operator

- Independent Electricity System Operator

Lead Transmitter

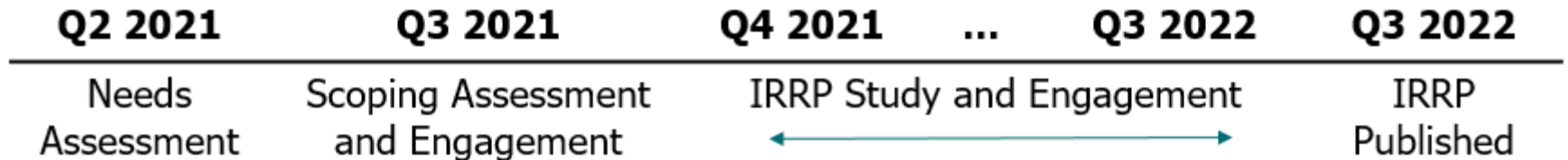
- Hydro One Networks Inc. (Transmission)

Local Distribution
Companies

- Alectra Utilities
- Canadian Niagara Power Inc.
- Grimsby Power Inc.
- Hydro One Networks Inc. (Distribution)
- Niagara on the Lake Hydro Inc.
- Niagara Peninsula Energy Inc.
- Welland Hydro Electric System Corp.

Current Status – Niagara Region IRRP

- IRRP development work began in late Q3 2021, and is on track for completion in Q3 2022
- Preliminary electricity demand forecast and draft Engagement Plan have been developed for public input
- Study timeline:



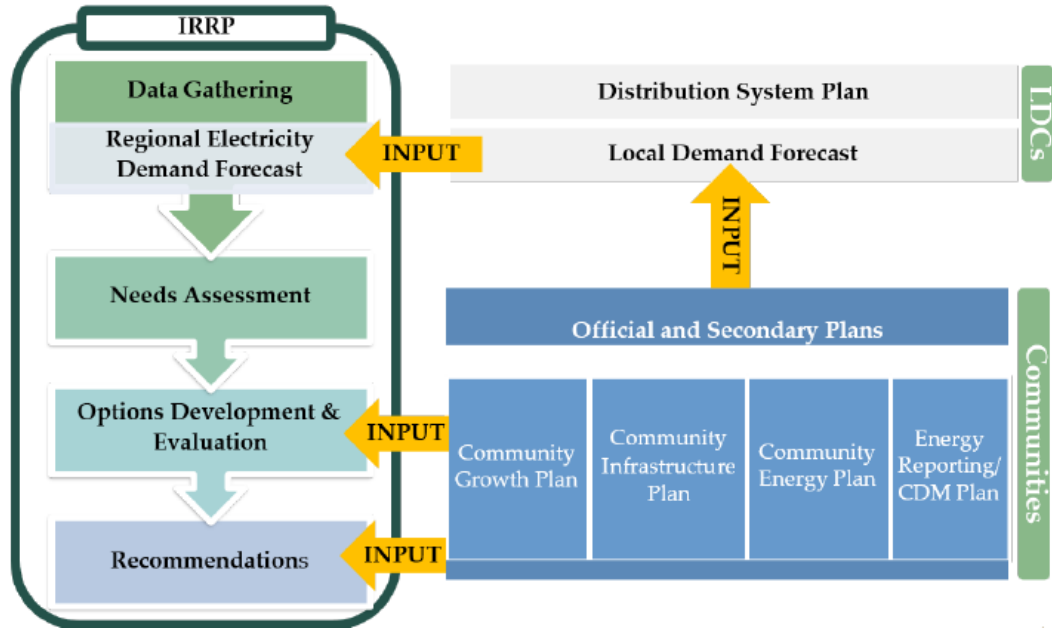
Activities to Date

- [Engagement](#) launched on Niagara Region Scoping Assessment – July 15, 2021
- Draft Niagara Region Scoping Assessment Outcome Report posted for public comment – July 27, 2021
- Public webinar on Niagara Region electricity planning – August 3, 2021
- Final Scoping Assessment posted – Aug. 24, 2021
- Local outreach to help inform electricity demand forecast and engagement plans – December 2021/January 2022

Coordinating IRRP and Local Planning Activities

Local drivers:

- Municipal/regional growth plans
- Community Energy/Climate Change Action plans
- Local energy projects
- Electrification
- Business plans of major electricity consumers or large projects



What we've heard so far...

- Strong population growth across the Niagara region based on 2051 growth projections
- Notable growth in the Town of Lincoln (greenhouses, Secondary Plan areas, potential GO Transit development) and Thorold
- Strong economic development around the Welland Canal (e.g. Thorold Multimodal Hub "Niagara Ports")
- Climate change drivers (e.g. Niagara Adapts: partnership with Brock University and seven Niagara Region municipalities to develop a Climate Change Adaptation Plan)

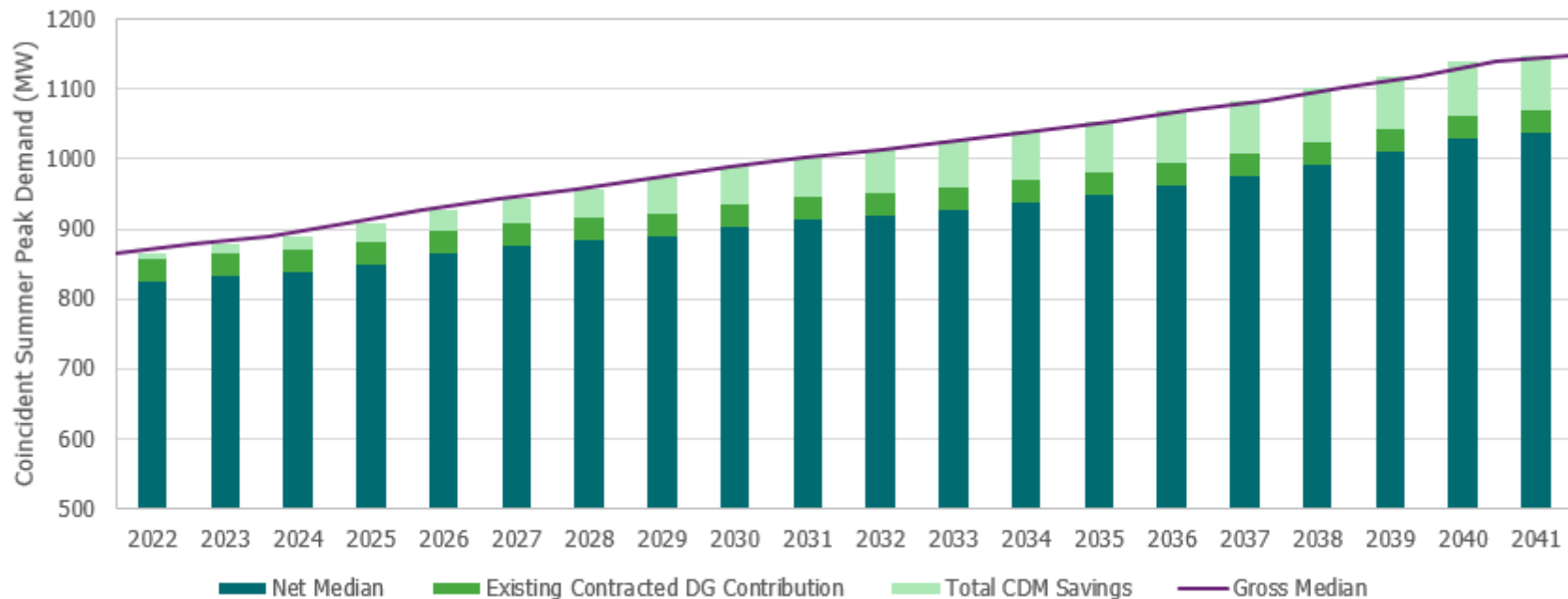


Preliminary Niagara Region Electricity Demand Forecast

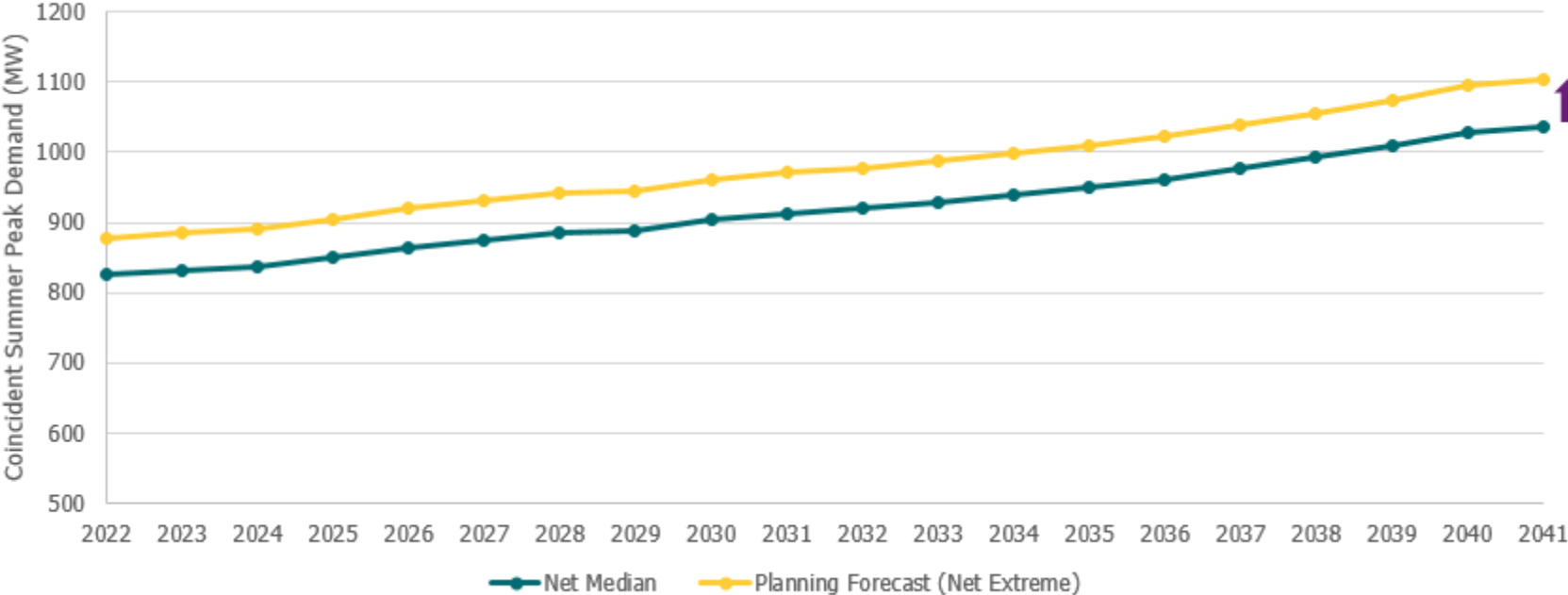
Data Gathering – Demand Forecast

- The region's needs are assessed based on a 20-year forecast of peak electricity demand
- The peak demand forecast is created by:
 - Collecting gross demand forecast information from each LDC in the region
 - Assuming median weather conditions, since electricity demand is weather-sensitive
 - Estimating the impact of province-wide conservation and demand management (CDM) targets on the region's peak demand
 - Calculating the forecast peak demand contribution of contracted distributed generation (DG)
 - Adjusting the forecast to account for extreme weather conditions

Development of the Demand Forecast



Arriving at the “Reference Planning Forecast”



Draft Niagara IRRP Forecast Details

- The overall electricity demand forecast for the Niagara region is exhibiting steady growth (~1.5% annual growth rate) over the 20-year planning horizon
- This is based on information from the region's distributors, and accounts for loads related to the:
 - New Beamsville GO station (Road Widening Project)
 - New Niagara hospital (2025-2026)
 - New wastewater treatment plant (2027)
 - Prudhommes development (2028+)
 - Glendale subdivision development (2026+)
 - Cannabis greenhouses in Grimsby
 - Other general residential/population/GDP growth
- There is also potential for significant growth/new developments in industrial loads – particularly near the Welland Canal in Thorold

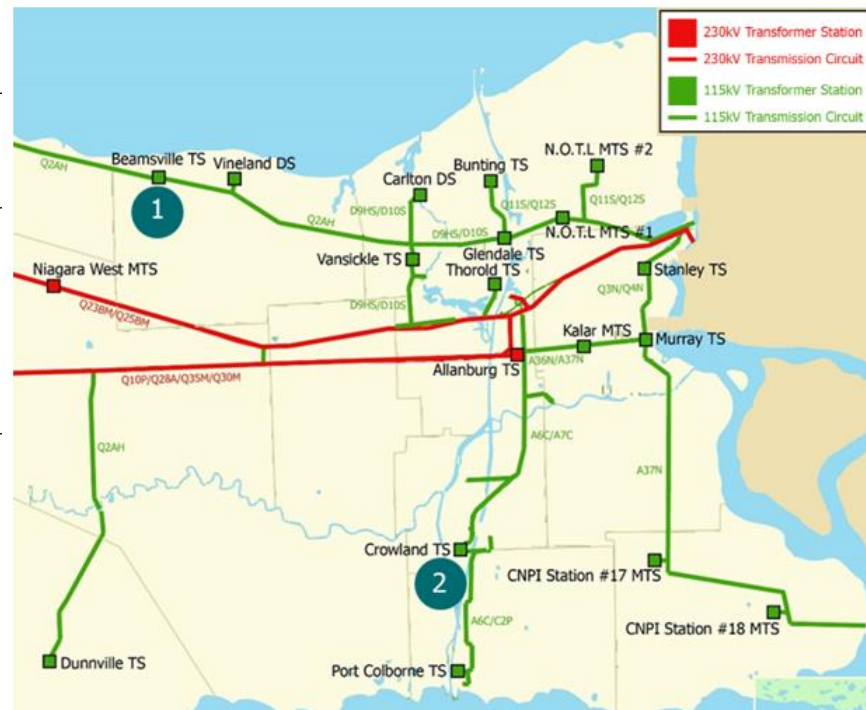
Other Forecast Considerations

- Important considerations that influence the load forecast include:
 - Municipal/regional growth plans
 - Climate change action plans
 - Community energy plans
 - Business plans of major electricity consumers or large projects
- Some of these plans may have implications on the load forecast that are difficult to quantify (i.e., accelerated electrification)
 - A **high forecast scenario** will be explored for the Niagara IRRP

Preliminary Summer Station Capacity Needs

Need	Station	Area	Description of Need
1	Beamsville TS	Lincoln and Grimsby	<ul style="list-style-type: none"> Beginning in 2027
2	Crowland TS	Welland	<ul style="list-style-type: none"> Beginning in 2028 Current end-of-life transformers will be replaced by 2024

- Station capacity needs were identified in the Needs Assessment
- Needs could be further refined, and new needs identified, during detailed forecasting and evaluations in the IRRP





Engagement and Next Steps

Engagement Plan – Draft Timeline

A draft engagement plan* for the region is now posted for comment on the engagement webpage:

Milestone	Timeline	Input
Demand forecast, Engagement Plan	Jan 2022	What economic development, growth or project plans might influence the demand forecast? What additional information should be considered? What feedback is there to proposed engagement plans?
Needs and potential options	Q2 2022	What additional information should be considered in the study assumptions? What community feedback is there to the potential solutions? What other options should be considered?
Options analysis and draft recommendations	Q2-Q3 2022	What feedback is there on the draft recommendations? What information should be considered in the recommendations?
Final IRRP	Q3 2022	

Who should participate in the Engagement process?

- Municipalities
- Communities
- Chambers of Commerce/Boards of Trade
- Large energy users
- Community groups and associations
- Academia and research organizations
- Energy service providers
- Environmental and sustainability organizations
- General public

Next Steps

- Written feedback on draft electricity demand forecast and Engagement Plan due – February 24
- Final engagement plan and responses to written feedback posted – March 10
- Ongoing engagement throughout the development of the IRRP

Seeking Input

As you listen today, consider any additional factors that should be considered in:

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Keeping in Touch

- Subscribe to receive updates on the Niagara regional initiatives on the IESO website – <http://www.ieso.ca/subscribe> > select Niagara Region
- Follow the Niagara regional planning activities online – <https://www.ieso.ca/en/Get-Involved/Regional-Planning/Southwest-Ontario/Niagara>
- Dedicated engagement webpage – <https://www.ieso.ca/en/Sector-Participants/Engagement-Initiatives/Engagements/Regional-Electricity-Planning-Niagara>
- Regional Electricity Networks provide a platform for ongoing engagement on electricity issues – <https://www.ieso.ca/en/Get-Involved/Regional-Planning/Electricity-Networks/Overview> > join Southwest Network

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

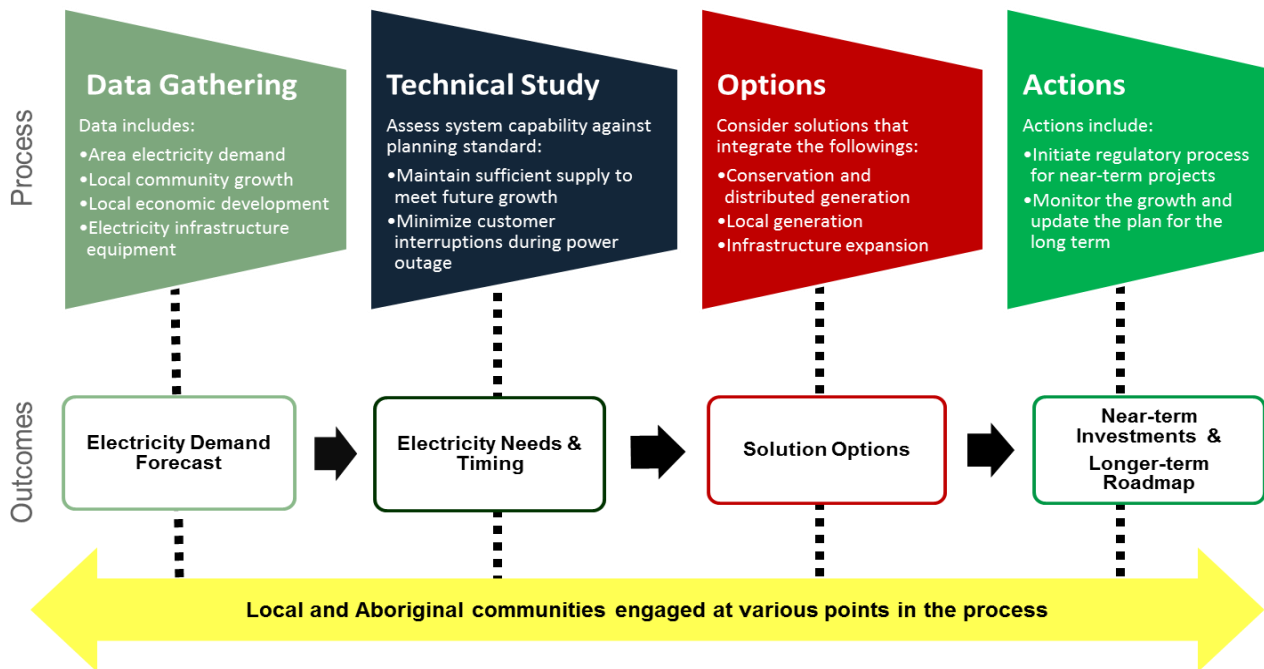


Appendix

Previous Regional Planning Cycle

- Previous Niagara Needs Assessment was published in April 2016
 - Concluded that no further coordinated planning was required
- One need was assessed through a Local Plan
 - Thermal overload of a 115 kV circuit under high generation output conditions
 - Conductor has since been upgraded
- Another need at Thorold TS (low power factor) would continue to be monitored between Hydro One Transmission and Distribution

How do we carry out an IRRP?



Categories of Needs

Capacity Needs

- Station capacity refers to the ability to convert power from the transmission system down to distribution system voltages
- System capacity (or “load meeting capability”) 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

End-of-Life Asset Replacement Needs

- Based on the best available asset condition information at the time
- Evaluated to decide if the facility should be replaced “like-for-like”, “right-sized”, or retired

Load Restoration and Supply Security Needs

- Load restoration describes the electricity system’s ability to restore power to those affected by a major transmission outage within reasonable timeframes
- Supply security describes the total amount of load interrupted following major transmission outages