

**MARCH 25, 2021**

# Peterborough to Kingston 2021 Integrated Regional Resource Plan (IRRP)

## Engagement Webinar #1

# Objectives of Today's Webinar

- To provide an overview of the regional planning activities in the Peterborough to Kingston Region, including the electricity demand forecast and the needs that will be explored
- To seek feedback on the engagement plan, and needs for the development of an Integrated Regional Resource Plan (IRRP) for the Peterborough to Kingston Region
- To outline next steps



# Agenda

1. Peterborough to Kingston Regional Electricity Planning Status Update
2. Electricity Demand Forecast
3. High Level Overview of the Region's Needs
4. Community Engagement and Next Steps

# Seeking Input

As you listen today, please consider the following questions to help guide your feedback after today's webinar:

- Do you have any questions or feedback on what's being presented today?
- What further information needs to be considered as part of electricity planning for your community?
- What information do you think will be important for the IESO to provide throughout the engagement? Does the proposed Engagement Plan provide sufficient opportunities for input?

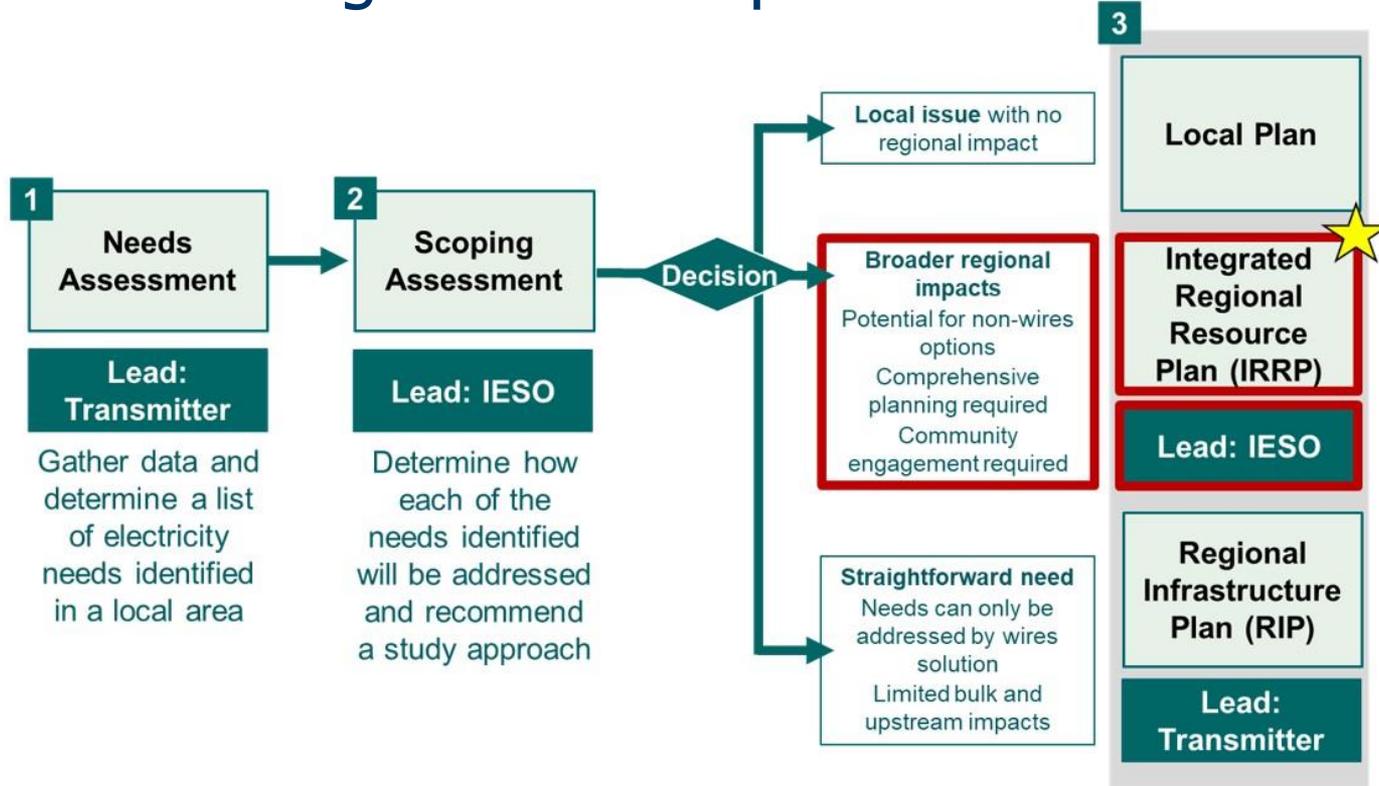
**Please submit your written comments by email**

**to [engagement@ieso.ca](mailto:engagement@ieso.ca) by April 8**



# Regional Electricity Planning in the Peterborough to Kingston Region

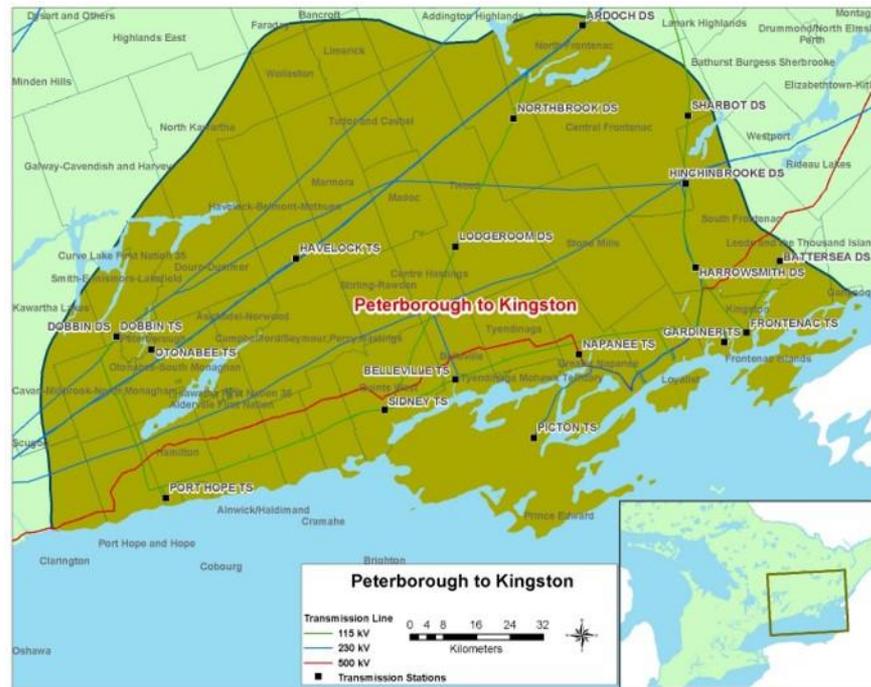
# Regional Planning Process Steps



# Peterborough to Kingston Region

This region includes First Nation communities of Alderville First Nation, Curve Lake First Nation, Huron Wendat, Kawartha Nishnawbe, and the Mohawks of the Bay of Quinte, Métis Nation of Ontario councils, and all or part of the following municipalities:

- Municipalities of Frontenac County
- Hastings County
- Northumberland County
- Peterborough County
- Prince Edward County
- Parts of Lennox and Addington County & related municipalities.



115 kV

230 kV

500 kV

# Scoping Assessment Study Team

Team Lead,  
System Operator

- Independent Electricity System Operator (“IESO”)

Lead Transmitter

- Hydro One Networks Inc. (“Hydro One Transmission”)

Local Distribution  
Companies (LDC)

- Hydro One Networks Inc. (“Hydro One Distribution”)
- Eastern Ontario Power
- Elexicon Energy
- Lakefront Utilities
- Peterborough Utilities
- Utilities Kingston

## Activities to Date

- [Engagement launched](#) on Peterborough to Kingston Scoping Assessment – March 27, 2020
- [Draft Peterborough to Kingston Scoping Assessment](#) posted for public comment - April 2, 2020
- [Public webinar](#) on Peterborough to Kingston regional planning and draft Scoping Assessment – April 26, 2020
- [Final Scoping Assessment](#) posted – May 4, 2020
- Local outreach to help inform engagement process – Q4 2020

## What we've heard so far...

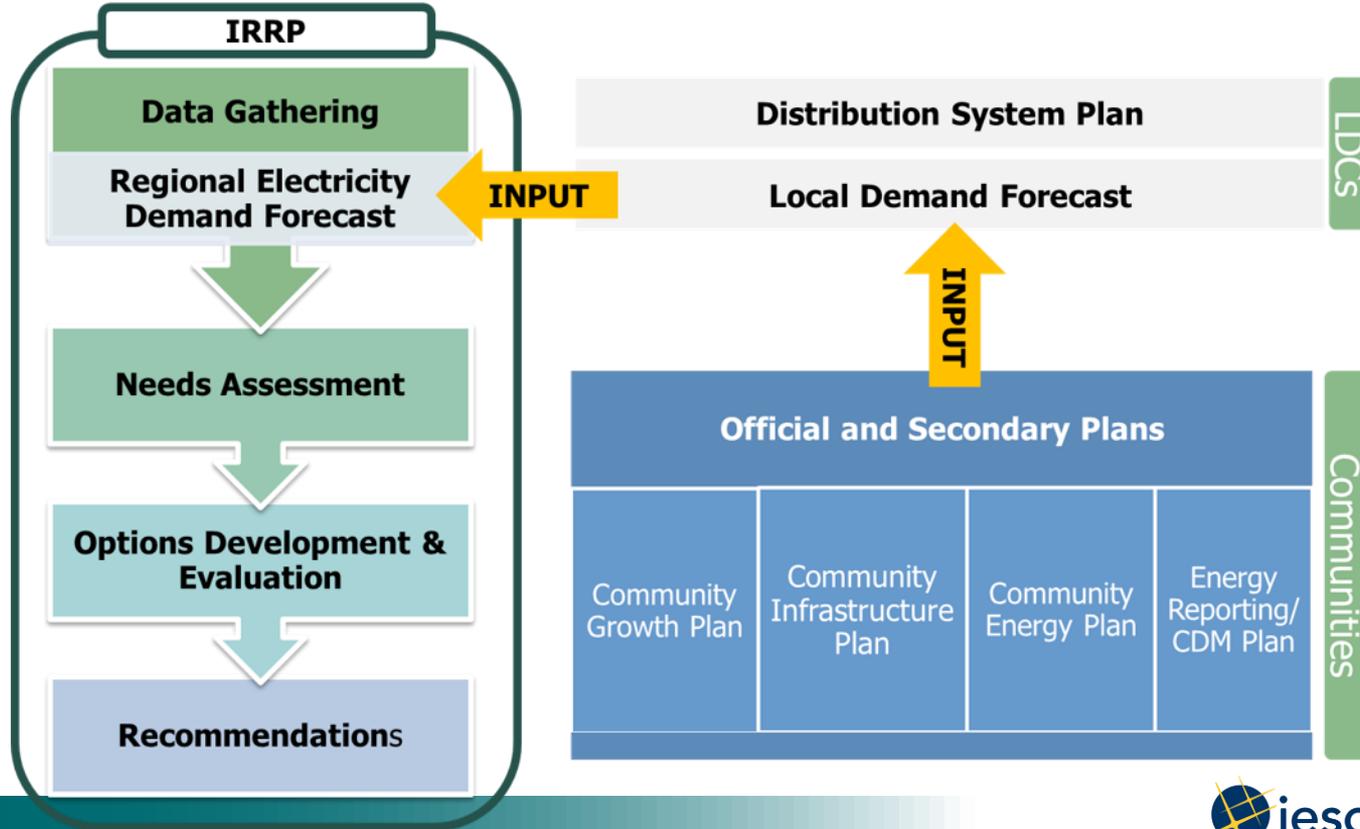
- Climate action is a key area of interest in this area, specifically around reducing greenhouse gas emissions
- Electrification is an emerging area of focus
- Some communities are seeing challenges with local electricity capacity in relation to electrification strategies and intensification targets
- A robust and reliable supply of electricity is crucial to support healthy economic development
- Interest in how aging transmission assets at the regional and bulk level are being addressed as part of this planning process

# Current Status - Peterborough to Kingston IRRP

- IRRP study work began in Q2 2020, and is on track for completion end of 2021
- The draft electricity demand forecast has been completed; additional load growth scenarios being developed by the Technical Working Group
- Detailed assessment of needs for the region is underway

Q1 2020	Q2 2020	Q2 2020	...	Q3 2021	Q4 2021
Needs Assessment	Scoping Assessment and Engagement	IRRP Study and Engagement			IRRP Published

# Coordinating Local Planning Activities



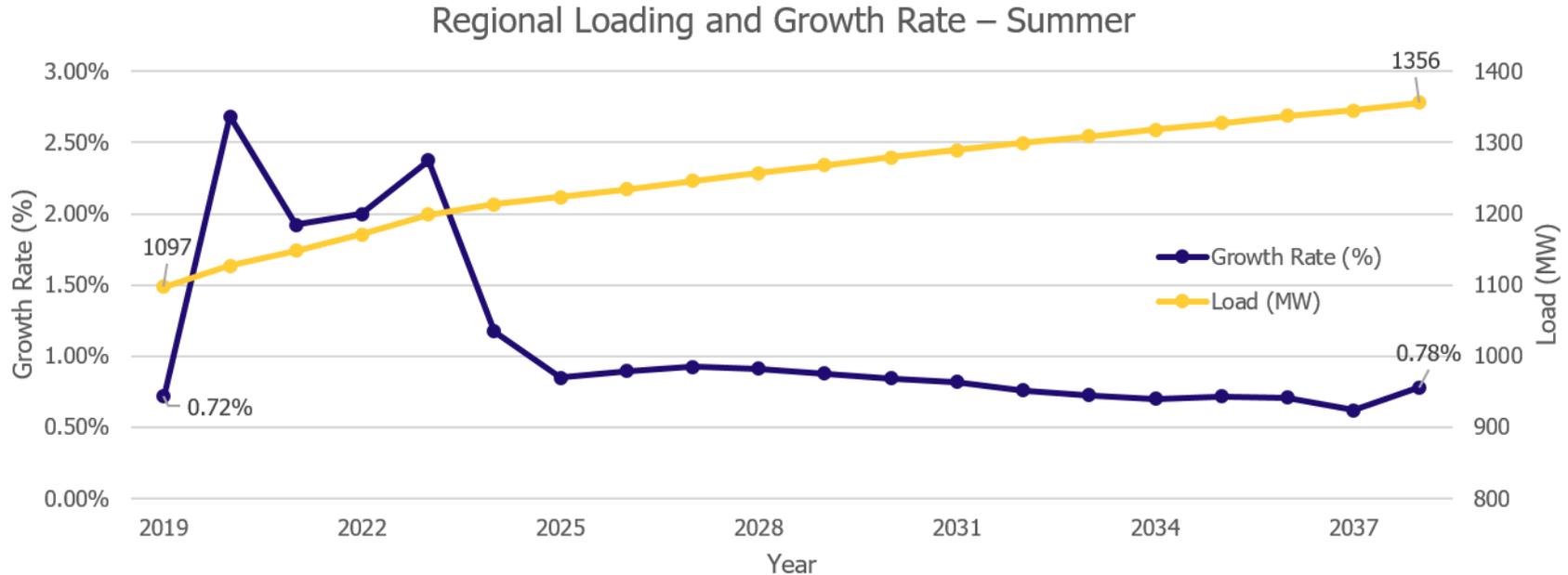
## Data Gathering – Demand Forecast

- The region's needs are assessed based on a 20-year forecast of peak electricity demand
- The demand forecast is created by:
  - Collecting gross demand forecast information from each LDC in the region based on median weather conditions
  - Accounting for the impact of province-wide energy efficiency programs on the region's peak demand
  - Accounting for the impact of contracted distributed generation
  - Adjusting the forecast to account for extreme weather conditions

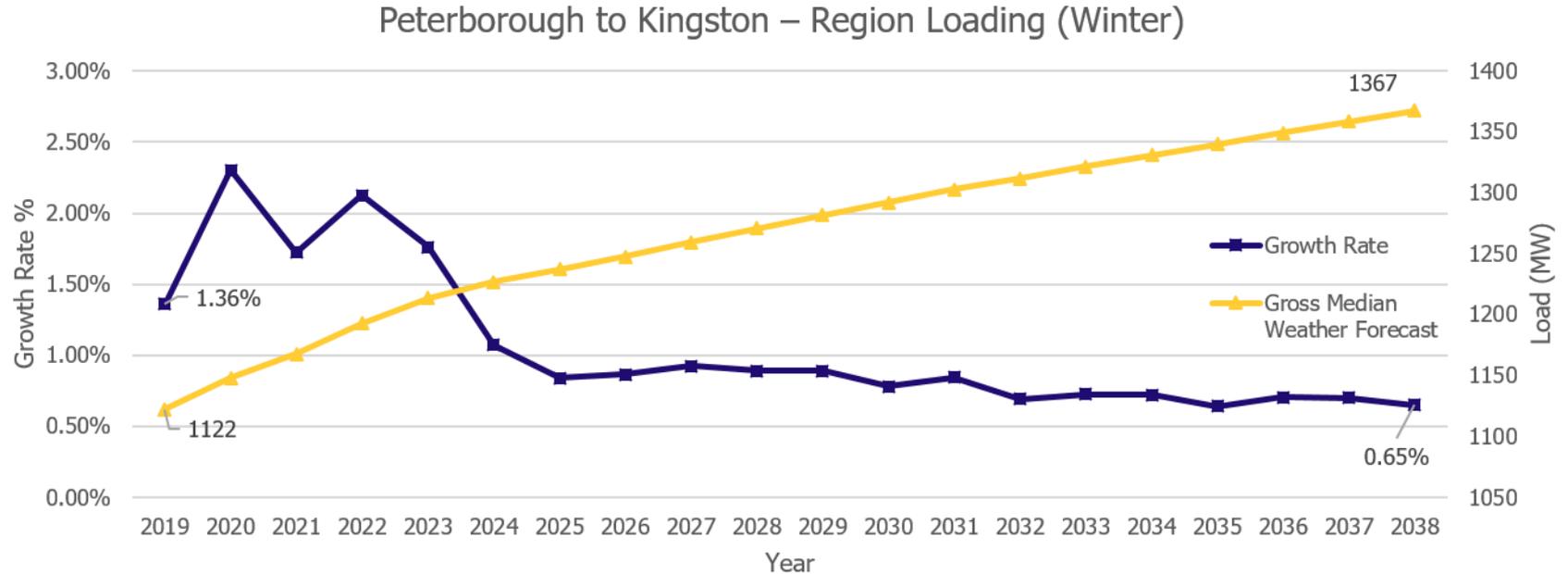
# Demand Forecast – Historical Trends

- Historically, summer demand has grown on average  $\sim 2\%$  per year since 2015
  - $\sim 1.3\%$  of this yearly demand growth has been offset by provincial energy efficiency programs, resulting in growth of  $\sim 0.7\%$  per year
- Historically, winter demand has grown on average  $\sim 1.1\%$  per year since 2015
  - $\sim 1.3\%$  of this yearly demand growth has been offset by provincial energy efficiency programs, resulting in growth of  $\sim 0.2\%$  per year

# Gross Demand Forecast Overview

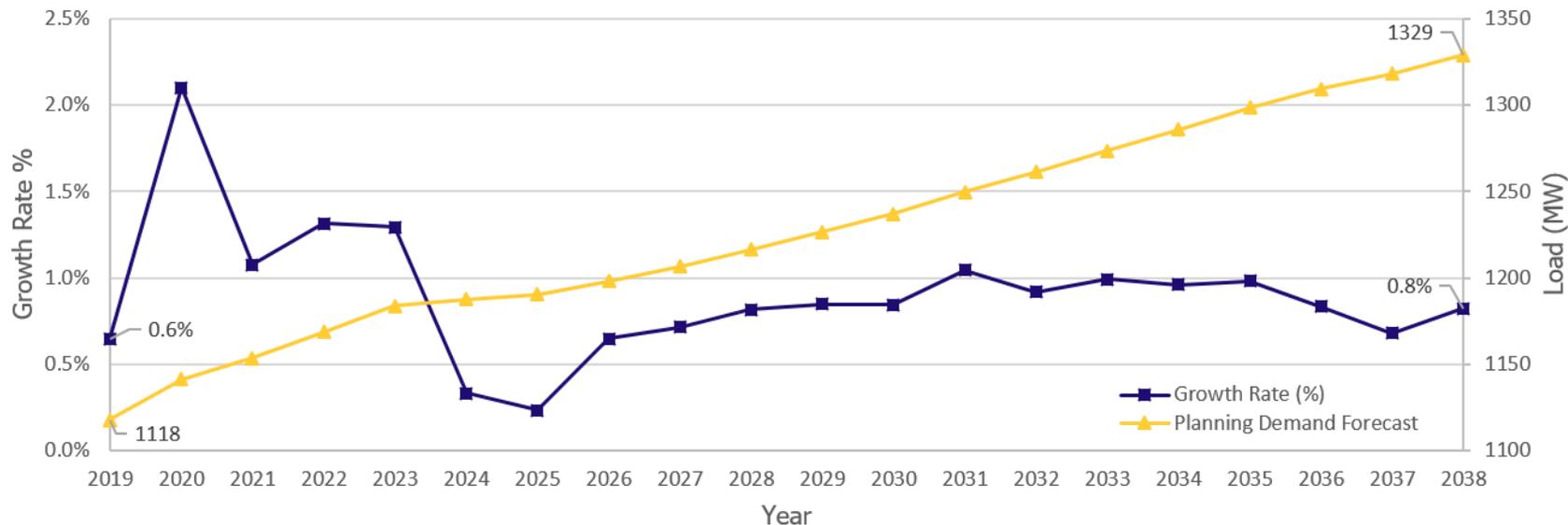


# Gross Demand Forecast Overview cont'



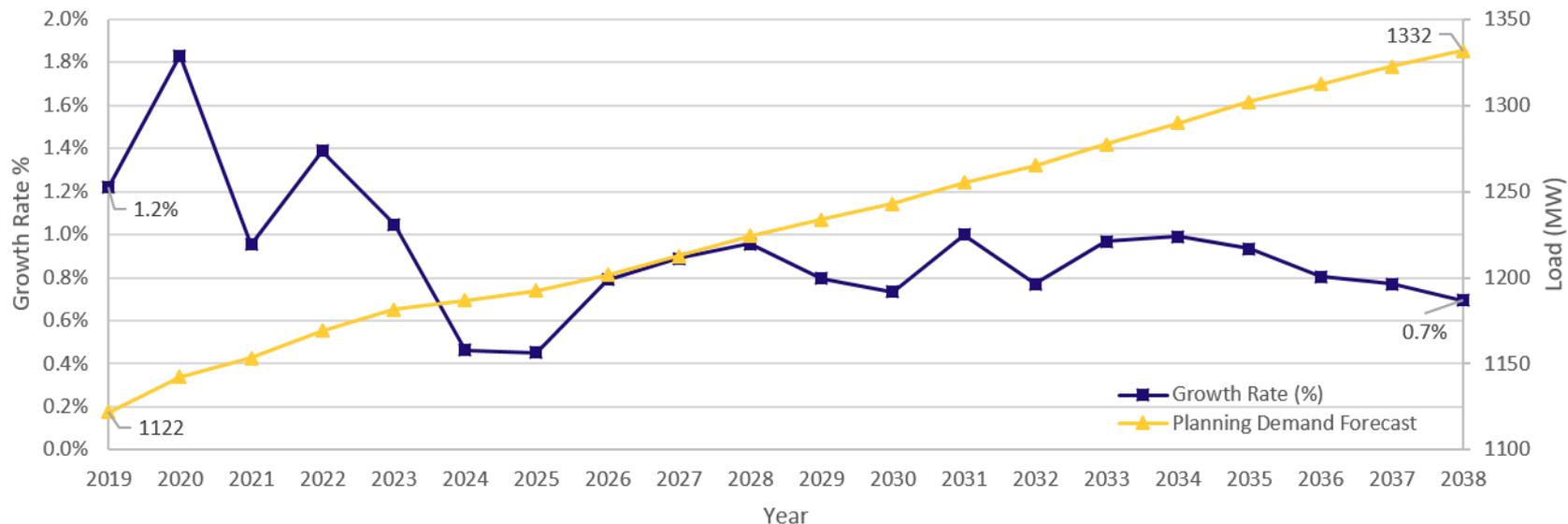
# Planning Demand Forecast Overview

## Peterborough to Kingston Peak Load (Summer)



# Planning Demand Forecast Overview cont'

Peterborough to Kingston Peak Load (Winter)



# Data Gathering – Demand Forecast

- 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 the plans above may have implications on the load forecast that are difficult to quantify (e.g. accelerated electrification)

## Feedback– Demand Forecast

- As you listen today, are there additional factors that should be considered in developing the electricity demand forecast for this region, such as:
  - Key developments, projects or initiatives
  - Planned expansions or retirements of large customers/electricity users
  - Local industry trends or other local activities
  - Municipal policy decisions/plans

# 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

## 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

## 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

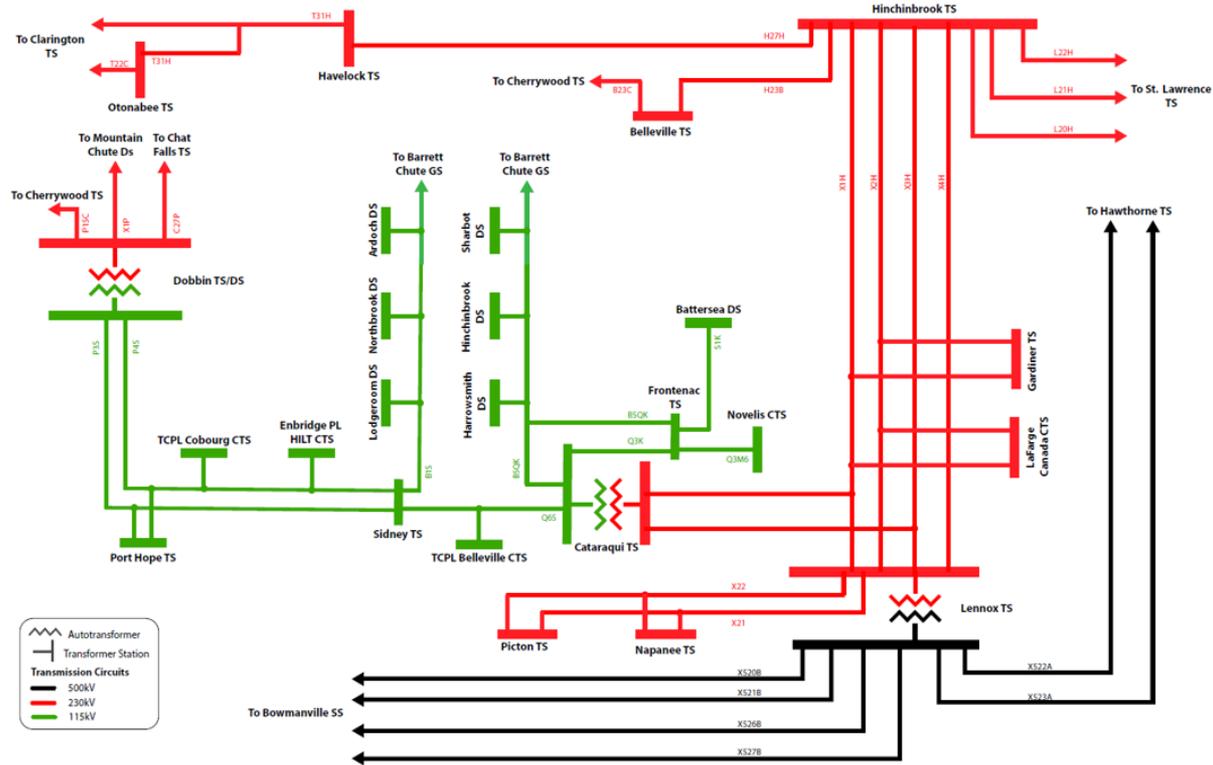
# Previous Regional Planning Cycle

- A Needs Assessment was conducted for the Peterborough to Kingston region in February 2015, and concluded the identified needs could be addressed at the local level as they did not require further coordinated regional planning
- Hydro One released a Local Plan in October 2015 to address a near-term station capacity need that was identified in the Kingston area
- There were no long-term needs identified
- The process was led by Hydro One Networks Inc., and included representatives from the IESO, the former Veridian Connections Inc., Kingston Hydro, Peterborough Distribution Inc. and Hydro One Networks Inc. Distribution.

# Current Status of Peterborough to Kingston Regional Planning

- IRRP study work began in May 2020 and is targeted to be completed by end of November 2021
  - Draft electricity demand forecast has been completed; additional scenarios being developed by the Technical Working Group
    - Electrification scenario (high demand); long-term contract expiry of existing generation scenario (low generation)
- Detailed assessment of needs for the region is underway

# Preliminary Needs in Peterborough to Kingston



# Preliminary Near-Term Needs in Peterborough to Kingston

	Near Term Needs*	Need Description
1	Dobbin to Sydney Supply	<ul style="list-style-type: none"><li>• P15C and Q6S are critical supplies to the Dobbin to Sydney Load; losing one will result in a thermal overload on the other.</li><li>• Losing both will overload B1S and C27P</li></ul>
2	Cataraqui Autos	Losing one of the Cataraqui Autos will overload the companion Autotransformer
3	P3S/P4S capacity	Losing one of the PxS circuits along with Q6S will overload the parallel PxS circuit

# Preliminary Long-Term Needs in Peterborough to Kingston

	<b>Long Term Needs*</b>	<b>Need Description</b>
4	115kV System undervoltages	The loss of P15C following an outage on C27P will result in voltage violations
5	B5QK Segment	1.1 KM Segment of B5QK will overload following the loss of Q3K

# Preliminary Station Capacity Needs in Peterborough to Kingston

- Station capacity needs have been identified at all 3 stations examined through the non-coincident load forecast
- The table below summarizes the station capacity need dates of the three stations:

	<b>Need Date</b>
<b>Belleville TS</b>	Today
<b>Frontenac TS</b>	2022
<b>Gardiner DESN1</b>	Today

## Other ongoing planning activities - Gatineau Corridor Study

Objective of the bulk planning study is to develop a plan for addressing transmission end-of-life needs identified for the Gatineau Corridor that considers:

- Opportunities for decommissioning or upgrading facilities at or near end-of-life to cost effectively meet system needs
- The need to address existing and forecast reliability concerns for supply to the Peterborough and Ottawa areas
- Maintaining the transmitter's capability to act effectively to manage the risk of asset failure by providing timely planning outcomes



# Engagement & Next Steps

# 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

# Engagement Plan – draft Timeline

- A draft engagement plan for the region is now posted for comment on the [engagement webpage](#) until April 8

Milestone	Webinar & Written Comment Period
Demand forecast, high-level needs, proposed engagement plan	March 25 / April 8 <i>*Response to feedback and final engagement plan posted by April 22</i>
Defined need and potential solutions being examined	June 2021; exact date TBD <i>*With permission, all feedback will be posted and responded to</i>
Options evaluations and recommendations	September 2021; exact date TBD <i>*With permission, all feedback will be posted and responded to</i>
Final IRRP	November 2021 (Plan posted with responses to feedback received)

## Next Steps for Engagement

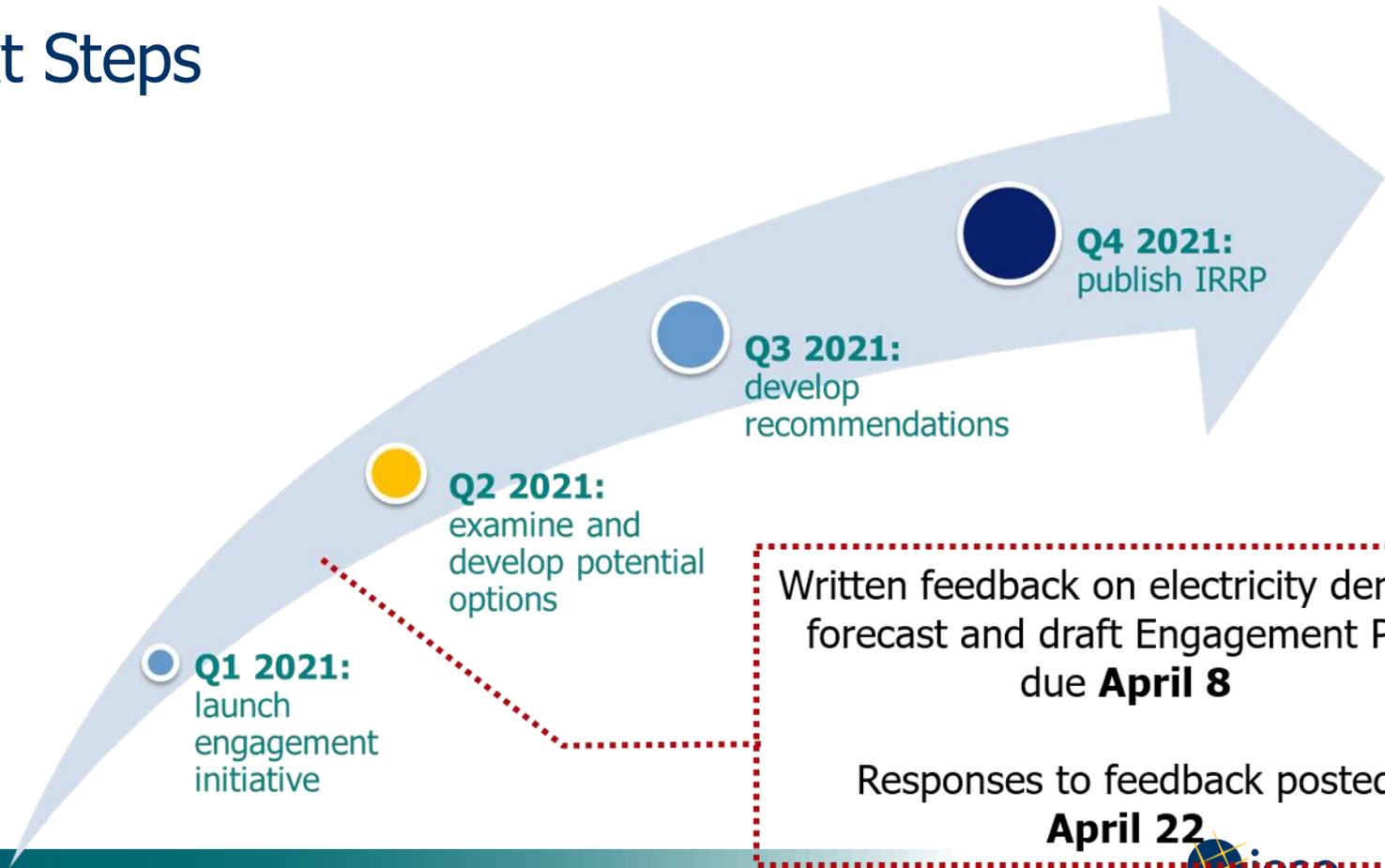
- Proposed approach to engagement is posted on Peterborough to Kingston regional engagement webpage  
<https://www.ieso.ca/en/Sector-Participants/Engagement-Initiatives/Engagements/Regional-Planning-Peterborough-to-Kingston>
- Written feedback on draft engagement plan due April 8
- Final engagement plan and responses to written feedback posted by April 22
- Ongoing engagement throughout the development of the IRRP

# Seeking Your Input

- Do you have any questions or feedback on what was presented today?
- What further information needs to be considered as part of electricity planning for your community?
- What information do you think will be important for the IESO to provide throughout the engagement? Does the proposed Engagement Plan provide sufficient opportunities for input?

**Please submit your written comments by email  
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# Next Steps



# Keeping in Touch

- Subscribe to receive **updates on the Peterborough to Kingston planning** region on IESO's website [www.ieso.ca/subscribe](http://www.ieso.ca/subscribe) > select region
- Visit the **Peterborough to Kingston regional planning and engagement page** <https://www.ieso.ca/en/Sector-Participants/Engagement-Initiatives/Engagements/Regional-Planning-Peterborough-to-Kingston>
- **Join the East Regional Electricity Network** to participate in a broader regional dialogue <https://www.ieso.ca/en/Get-Involved/Regional-Planning/Electricity-Networks/IESO-Connects-Online-Community-for-Network-Members>

# Questions

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

*Submit questions via the web portal on the webinar window, 'raise your hand' at the top of the screen, or email us at [engagement@ieso.ca](mailto: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? i.e. speakers, presentations or technology

**Chat section is open for comments**



# Questions

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# Thank You

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