

Load Forecasting

RPPAG Sub-Group Update

July 14, 2021

Participants:

Alectra

AMO

Hydro One

IESO

London Hydro

Pollution Probe

Toronto Hydro

Progress Update

- Toronto Hydro hosted two roundtable discussions to gather **key issues and considerations**
- The group met for a third time on June 30th to agree on the **objectives and scope** and a set of **guiding principles** for the remainder of the engagement
- Next Steps:
 - 1) **Information Sharing Session** (target: early August) to review current-state load forecasting processes of LDCs, HONI and IESO
 - 2) **Working Meetings** (target: August-September) to develop recommendations on key issues
 - 3) **Drafting Process** (target: September-October) to develop proposed load forecasting guidelines for review by the broader RPPAG

Objectives and Scope of Work

- **Objective**

1. Maximize the efficiency, effectiveness, and adaptability of regional planning by enhancing **standardization** and **transparency** of the regional planning load forecast, where appropriate
2. Investigate opportunities for alignment (where applicable) of regional planning load forecasting with other forecasts (e.g. IESO's provincial forecast)
 - Note: different forecasts are developed for different purposes; while there may be opportunities for alignment, the regional planning forecast must be undertaken by the regional planning study team for the purpose of station-level planning. It is not necessary that this forecast be aligned with other forecasts.

- **Scope of Work**

1. Review current-state of load forecasting processes
2. Identify established and emerging opportunities for standardization and transparency
3. Develop and evaluate options to address sub-group objectives
4. Draft revised guidelines for regional planning load forecasting and present to RPPAG for review and adoption

Key Consideration: Drivers of Change

- The energy system will **change at a faster rate** in the future due to drivers that include:
 - climate change impacts
 - decarbonization mandates
 - community energy and emissions plan implementation
 - evolving life/work patterns
 - acceleration of DER/EV adoption and emergence of energy “prosumers”
 - changing connections profiles
 - etc.

Key Consideration: Adapting to Change

- LDCs and other technical working group (TWG) members have substantial experience delivering robust regional plans on the basis of accurate 10+ year load forecasts.
- Looking ahead, all group members recognize that enhancements to forecasting may be warranted to support prudent planning decisions under greater uncertainty. New assets need to align with long-term needs in a changing environment.
- Load forecasting is a complex exercise with many interdependencies. For any given load forecast element, there can be a range of reasonable and valid approaches. Regional planning study teams have been reasonably successful in navigating these variables in the past.
- To the extent that revisions to the load forecasting approach may be needed, developing and validating those revisions may take time.
- Generally, the sub-group is supportive of developing a common approach amongst regional planning participants where feasible, while maintaining sufficient flexibility.
- The group also agrees that new/standardized guidance should be kept simple, and must ultimately serve the core objective of robust system planning (i.e. extraneous guidelines and requirements should be avoided).

Key Consideration: Energy Planning Stakeholders

- Municipal and community energy plans are an important input to the regional planning forecast. The sub-group agrees that the regional planning study team must ensure that these plans are taken into consideration, either directly in the forecast, or as inputs to sensitivity analysis.
- Municipal energy plans vary in scope, detail, and approach, and may include aspirational targets for which implementation plans are not always fully established or committed.
- LDCs, in consultation with IESO and the transmitter, have the mandate and expertise to consider, scrutinize, and integrate all relevant and valid forecast inputs, including municipal energy plans.
- LDCs are fully accountable to the OEB – via public rate hearings – for the quality of the load forecast on which investment decisions are predicated. Under the existing framework, LDCs have an imperative to engage and seek alignment with municipal stakeholders (and other energy system stakeholders) to develop defensible requests for ratepayer funding.

Guiding Principles

1. Recommendations should be focused on **demonstrable** opportunities for improvement in the **current-state** process:
 - immediate and discrete opportunities for standardization and transparency should be distinguished from more exploratory, long-term enhancements
2. Standardized load forecasting guidance from the RPPAG should be **flexible** enough to:
 - accommodate necessary and valid differences across LDCs and regions;
 - allow TWG participants to adapt and enhance forecasting methodologies in the coming years (i.e. the guidelines should reasonably “future proof”)
3. For forecast elements where the group agrees that it is either infeasible or unnecessary to prescribe a standardized approach, guidance that ensures an appropriate level of **transparency** and **verifiability** in LDC and study team forecasts should be considered and recommended, where appropriate:
 - for example, establishing the expectation that utilities will document and share (with municipal stakeholders) the load forecast’s alignment with and deviation from municipal/community energy plans

Key Issues Under Consideration

1. Time Horizon
 - i.e. 10 vs. 20 years
2. Forecast Starting Point
 - e.g. most recent non-anomalous year; other key assumptions
3. Forecast Type
 - i.e. coincident vs. non-coincident
4. Gross Forecast Inputs
 - e.g. committed customers; embedded savings; other key assumptions
5. Weather Correction
 - i.e. responsibility for weather correction factors; numbers of historical years considered
6. Net Forecast Inputs
 - e.g. responsibility for CDM/DER inputs; key assumptions
7. Sensitivity Scenarios
 - e.g. community energy plans; non-committed customers