



JUNE 12, 2023

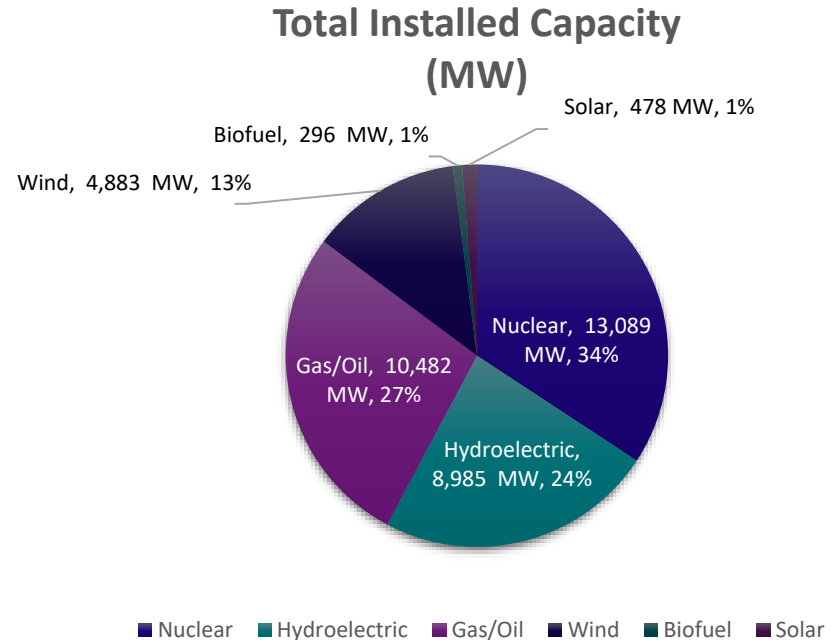
IESO

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Planner, Operational Models & Forecasts

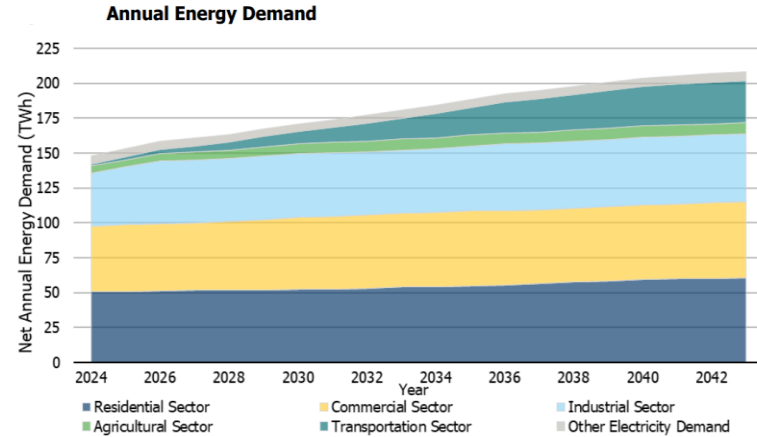
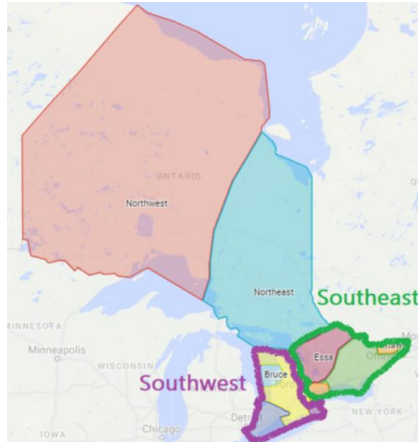
IESO - Overview

- 137.5 TWh energy usage in Y2022 (growth of 2.2% from last year.)
 - Summer Peak:
 - 22,712 MW (2022)
 - 27,005 MW (All time)
 - Winter Peak:
 - 21,165 MW (2022)
 - 24,979 MW (All time)
- Demand response: Summer 1400+ MW and Winter 1100+ MW
- Distributed solar capacity: 2,172 MW
- 30,000+ km of transmission lines in Ontario



Challenges – General/Operational

- Long term demand growth is driven by electrification of mining, agricultural and industrial sectors.
- Diverse generation mix, and load mix. Projected increase in storage facilities.
- Short term demand forecast challenges:
 - Growth of new large loads such as green houses and industrial customers.
 - Transitioning from Ontario wide forecast to 4 forecast areas

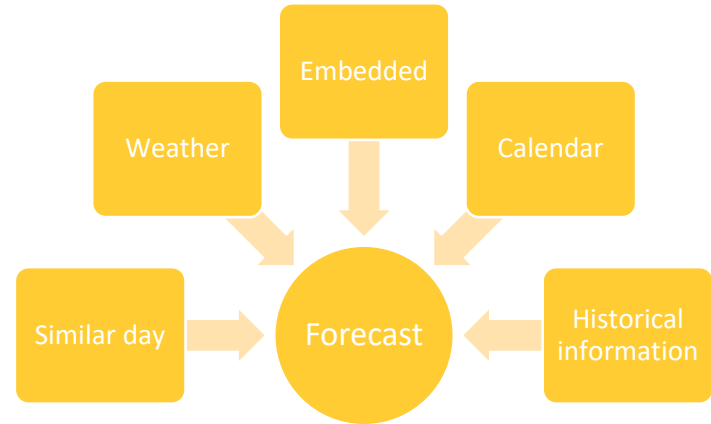


Forecasting

- IESO produces demand forecast for Short term (0 – 10 days), Medium Term (11 days – 18 months), and Long term forecast (18 months+)
- Presently, IESO does not produce probabilistic forecasts. IESO has started looking into developing different use cases for consuming/producing probabilistic forecast.
- Capacity modeling tools have the provision to input wind and solar generation as a probabilistic forecast and IESO does utilize probabilistic forecast for modelling.
- Energy modelling is completed on median basis (deterministic/extreme). IESO tools/processes are currently not configured for consumption/production of probabilistic forecast.
- Weather forecasts include probabilistic information (i.e., confidence bands), however, it is currently not being used by any IESO business/operations processes.
- Embedded generation forecasts is received with confidence bands. However, confidence bands are not being utilized by any IESO business/operation processes.

Operational Demand forecast at IESO

- Demand forecast is used to develop resources required for reliability considerations.
- Forecast produced is 0-10 day ahead with 5 min and hourly resolution.
- Weather and Embedded forecast are external forecasts.
- Tools: Metrix, Tableau, R, and python



Thank You – Q&A

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