

Meeting Date:May 7, 2025Prepared By:Michael Di Lullo, CAOSubmitted by:Michael Di Lullo, CAOReport No:CAO-13-2025Subject:IESO Annual Energy Planning Outlook

Recommendation:

THAT Report CAO-13-2025 re: IESO Annual Energy Planning Outlook be received for information.

Purpose:

The purpose of this report is provide information from the Independent Electricity System Operator (IESO) regarding the 2025 Annual Planning Outlook (APO) which provides an overview of the Province's electricity demand needs and future growth forecasts.

Background:

The APO is intended to provide sector participants, governments, municipalities, Indigenous communities and electricity consumers, amongst others, with the data and analyses they need to make informed decisions, and to communicate valuable information to policy-makers and others interested in learning more about the developments shaping Ontario's electricity system.

A copy of the full report can be found on the IESO site at: <u>Annual Planning Outlook</u> The report contains the following: Demand Forecast, Supply and Transmission Outlook, Resource Adequacy, Operability, Market Uncertainties, Integrated Reliability Needs and Planned Actions.

Analysis:

Over the next 25 years, the IESO anticipates electricity demand to ramp up more quickly than previously forecast due to economic growth, electrification, and evolving technologies.

The IESO's 2025 Annual Planning Outlook forecasts system-level net annual energy demand to grow 75 per cent — to 262 terawatt-hours (TWh) by 2050 — which is a significantly higher increase than the 60 per cent growth forecast in the 2024 Annual Planning Outlook within the same timeframe.

Over the current forecast horizon, demand grows at an average compound annual growth rate of 2.2 per cent driven by electric vehicle production, supply chain operations, and other projects in the pipeline; strong interest from data centres powering artificial intelligence; electrification projects across the economy; and higher population growth and household formation estimates. Ontario remains on track to become a dual-peaking system — where summer seasonal system peaks and winter seasonal system peaks reach similar magnitudes — by 2030 primarily due to growing greenhouse lighting and electric vehicle charging.

With respect to supply-side resources that power Ontario, there are several actions being undertaken to ensure there is adequate electricity to meet the province's needs. This includes the development of new generating resources, addition of storage, recontracting of existing resources, as well as the refurbishment and expansion of the province's nuclear fleet. Actions to date are projected to meet Ontario's capacity and energy needs until 2029.

Throughout the entire outlook period, the IESO will leverage energy efficiency and demand-side management as a reliable and low-cost resource. Initiatives funded by electricity rates and the federal government are underway, with energy efficiency continuing to offer customer choice, deliver significant ratepayer and system savings, and reduce energy and capacity needs.

Overall, the level of annual electricity demand savings from all electricity demand-side management programs in Ontario is forecasted to fluctuate between 16 TWh and 18 TWh from 2026–2050, as savings decrease from expiring measures implemented under past programs and savings increase from new programs.

Financial Implications:

N/A

Strategic Plan:

This matter aligns with following strategic priorities:

• Sustainable Infrastructure and Services

Ontario's energy landscape is changing as continued demand is increasing with more supply required as the population continues to grow and competing needs are placed upon the energy system.

Attachments:

Attachment – 2025 Annual Planning Outlook, April 2025