

IESO Modelling Update

Long-Term Energy Plan Multi-Ministry Meeting

June 19, 2017

Electricity planning process

Bill 135, the
*Energy Statute
Law Amendment
Act*, 2016

Received Royal
Assent on June 9,
2016

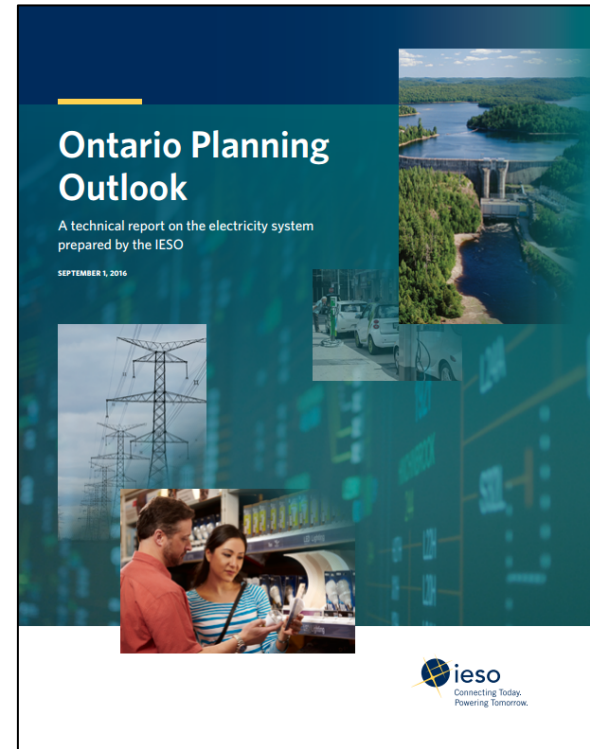
IESO Technical Report,
“Ontario Planning Outlook”



Ontario Government's Long-
Term Energy Plan (LTEP)

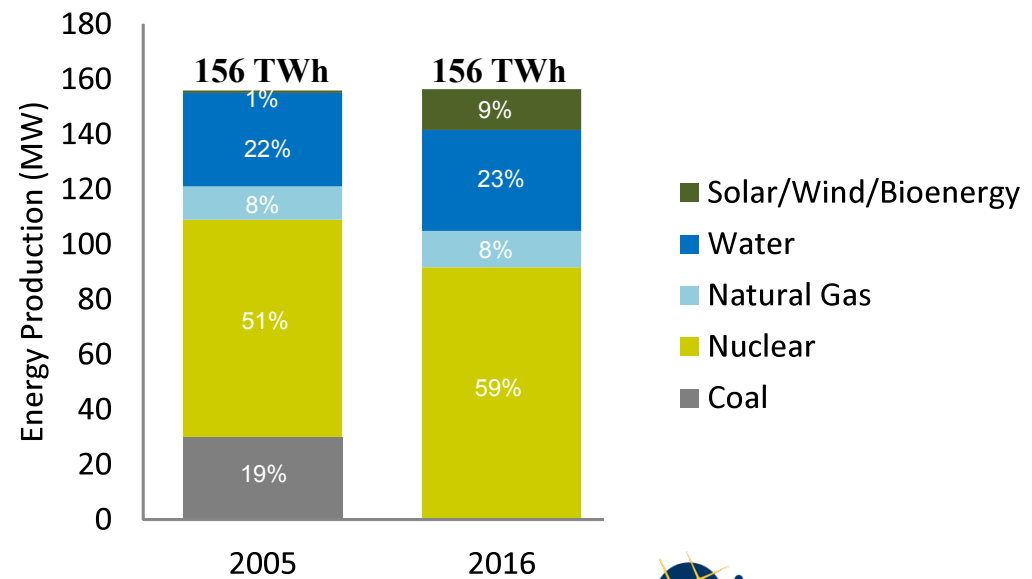
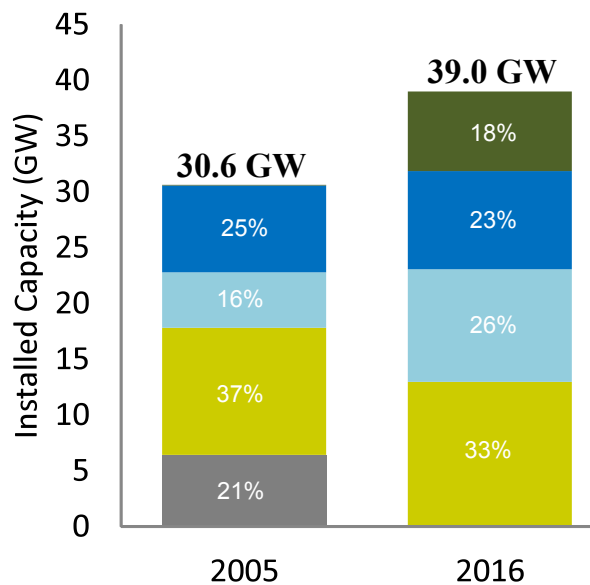
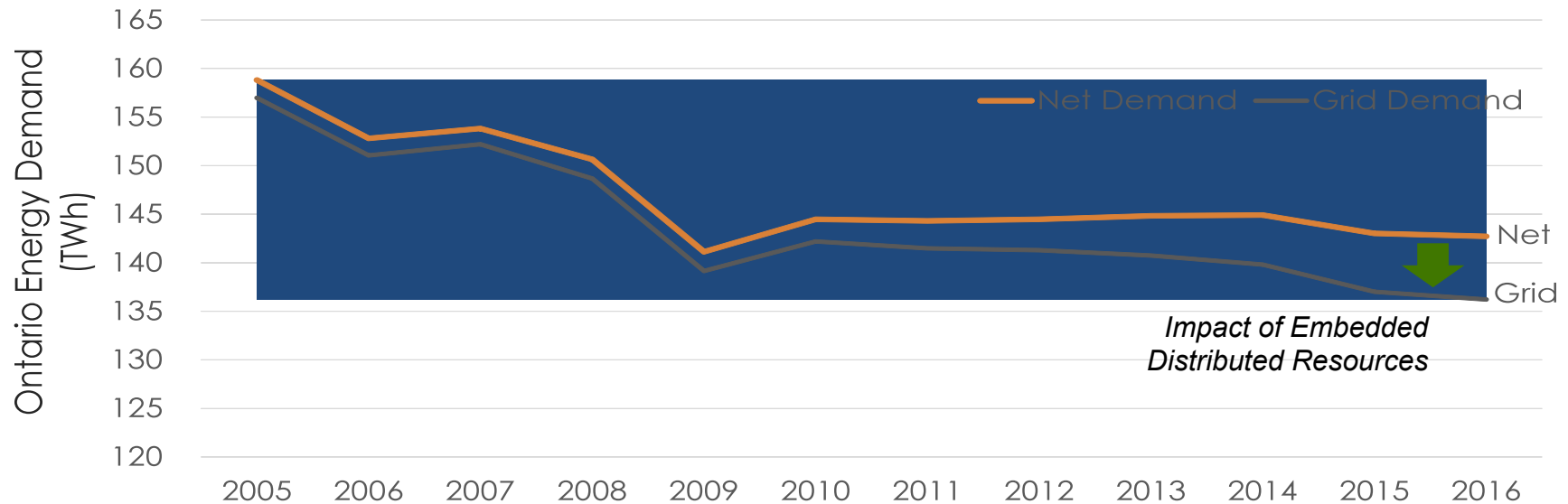


IESO Implementation Plan



The report , supporting modules, and
data tables can be found on the
IESO's website: www.ieso.ca

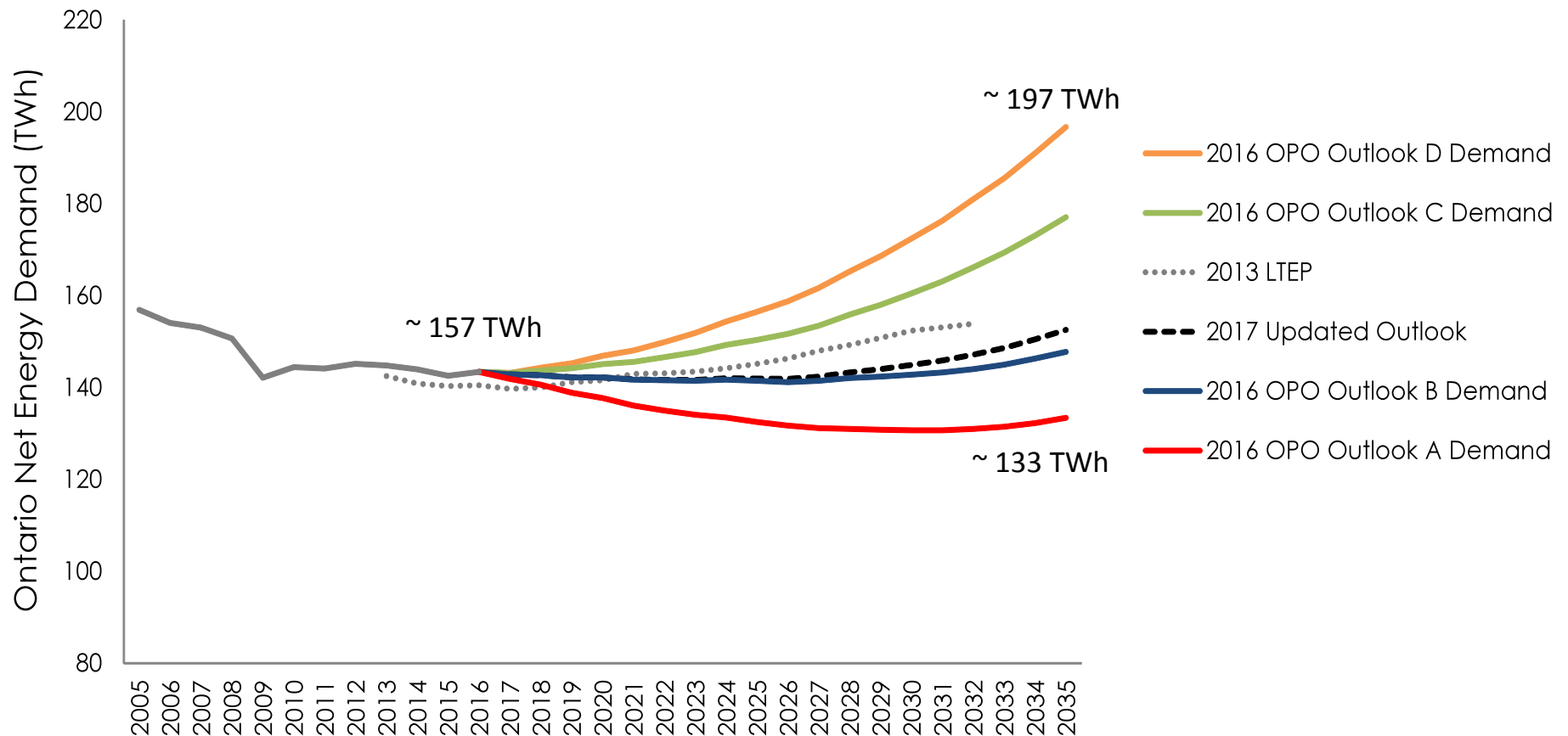
Ontario's electricity system over the past decade



The bar charts include embedded distributed resources.

Energy demand outlooks

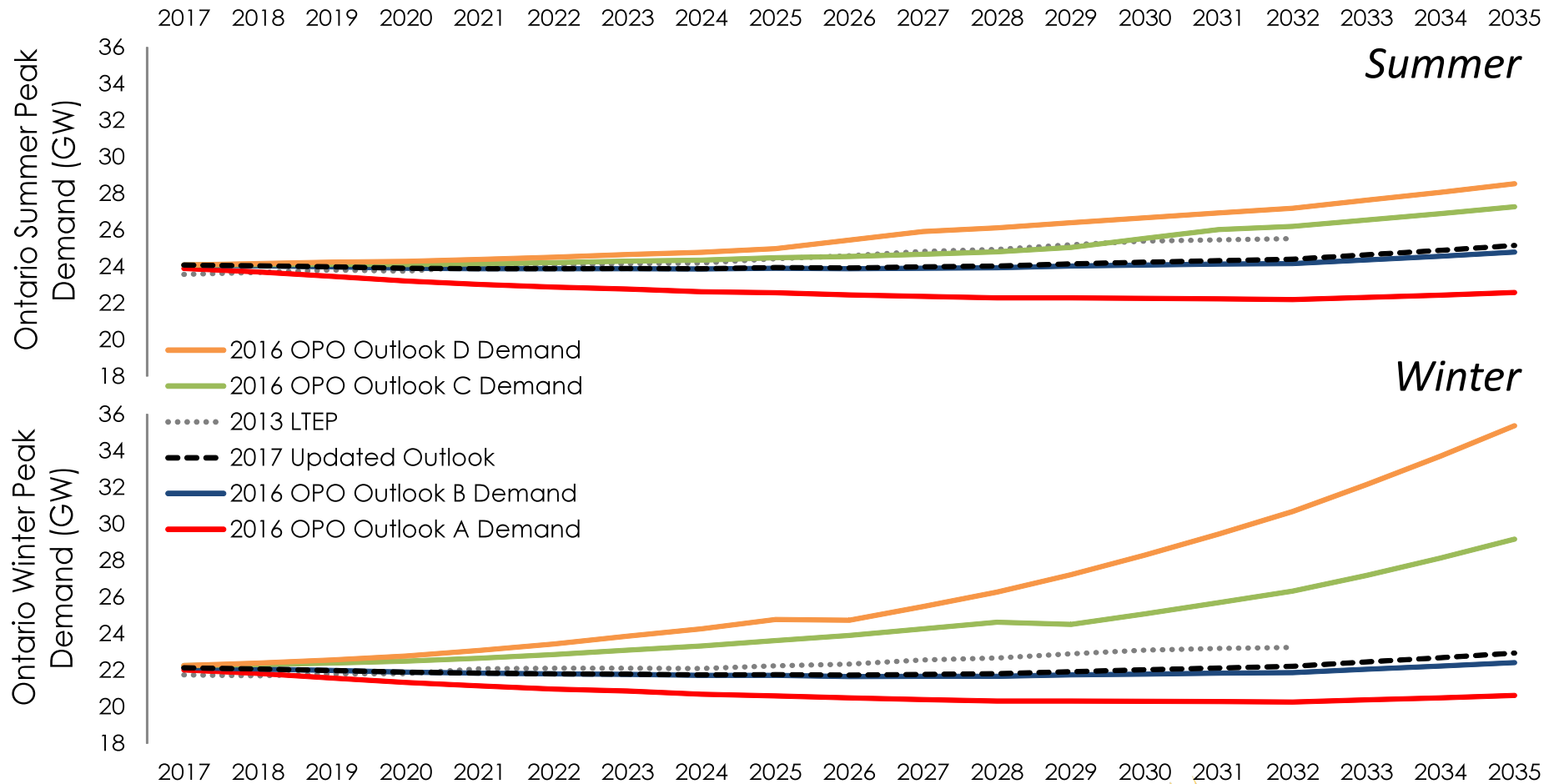
- Updated energy demand outlook is about 5 TWh higher than the OPO Outlook B, by 2035. The updated outlook reflects an accelerated increase in electric vehicles.



Outlooks A through D per 2016 Ontario Planning Outlook report.

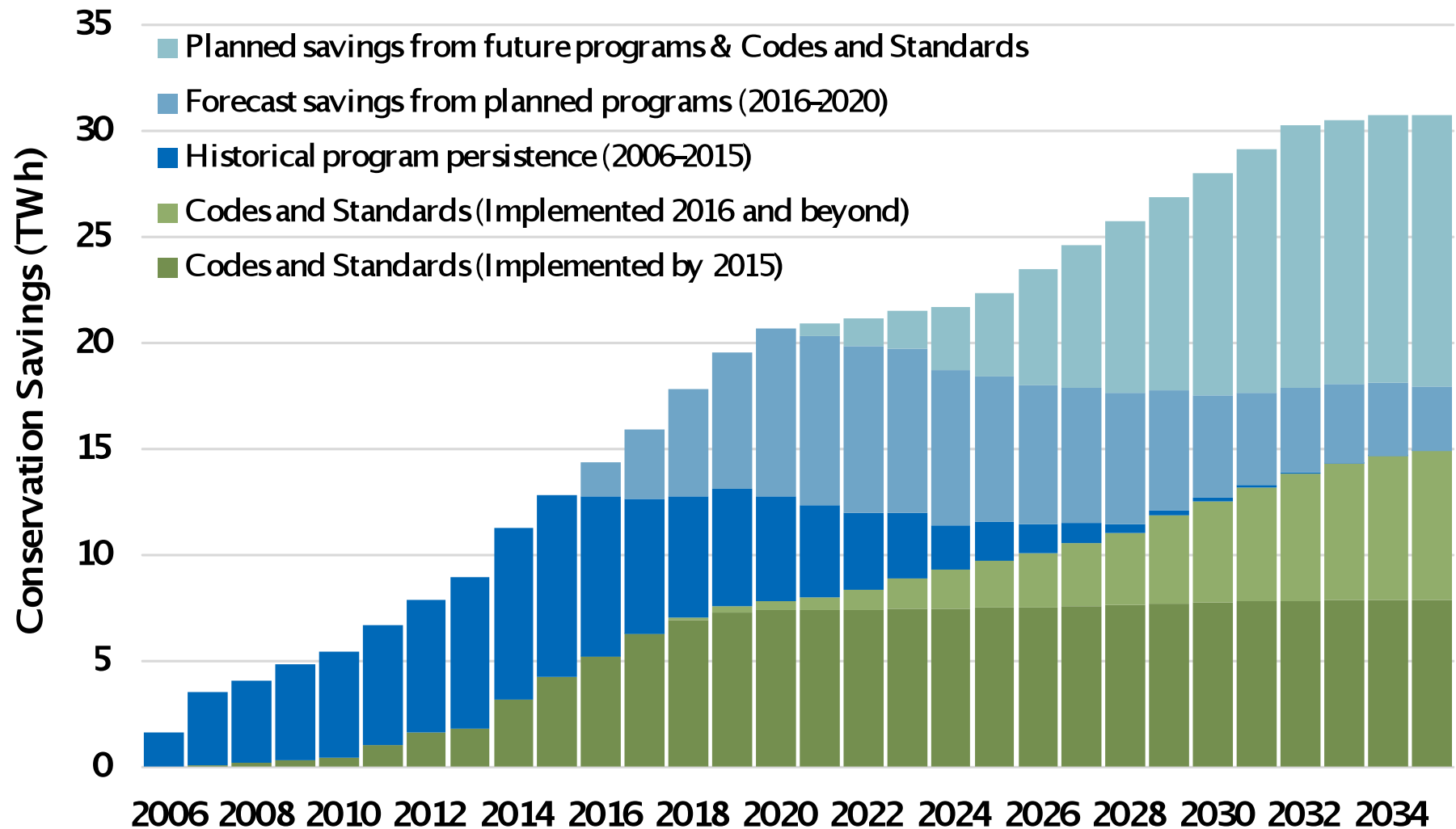
Peak demand outlooks

- Relative to OPO Outlook B, the updated outlook sees peak increase by about 400 MW in the summer and 500 MW in the winter due to higher demand from electric vehicles



Outlooks A through D per 2016 Ontario Planning Outlook report.

Ontario electricity conservation outlook



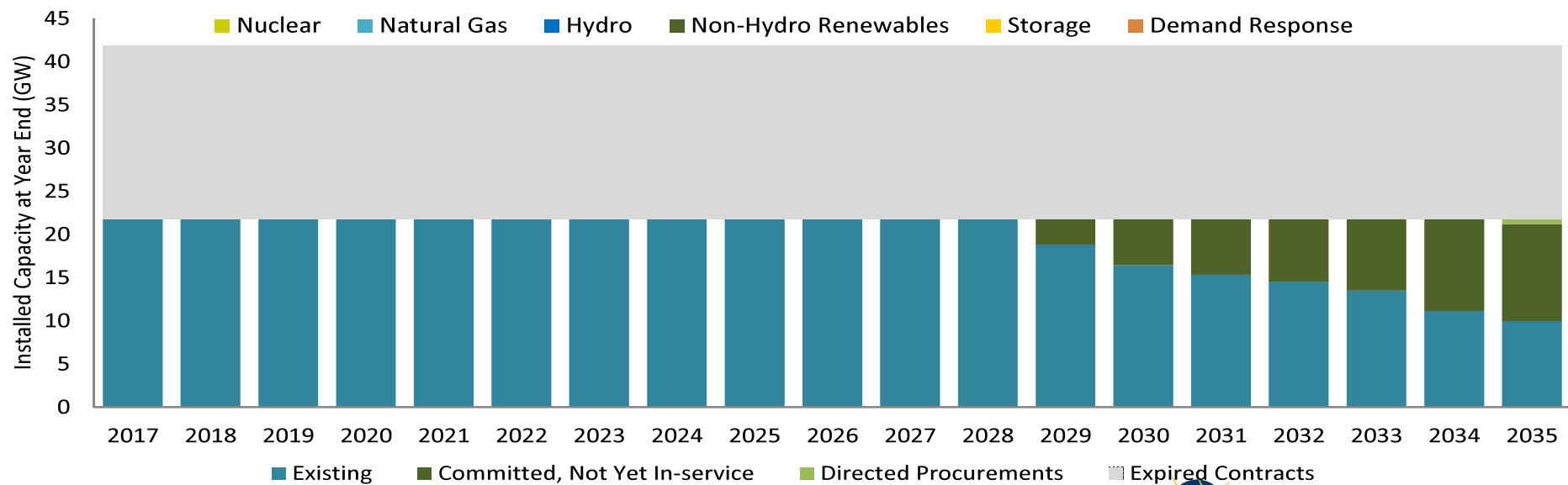
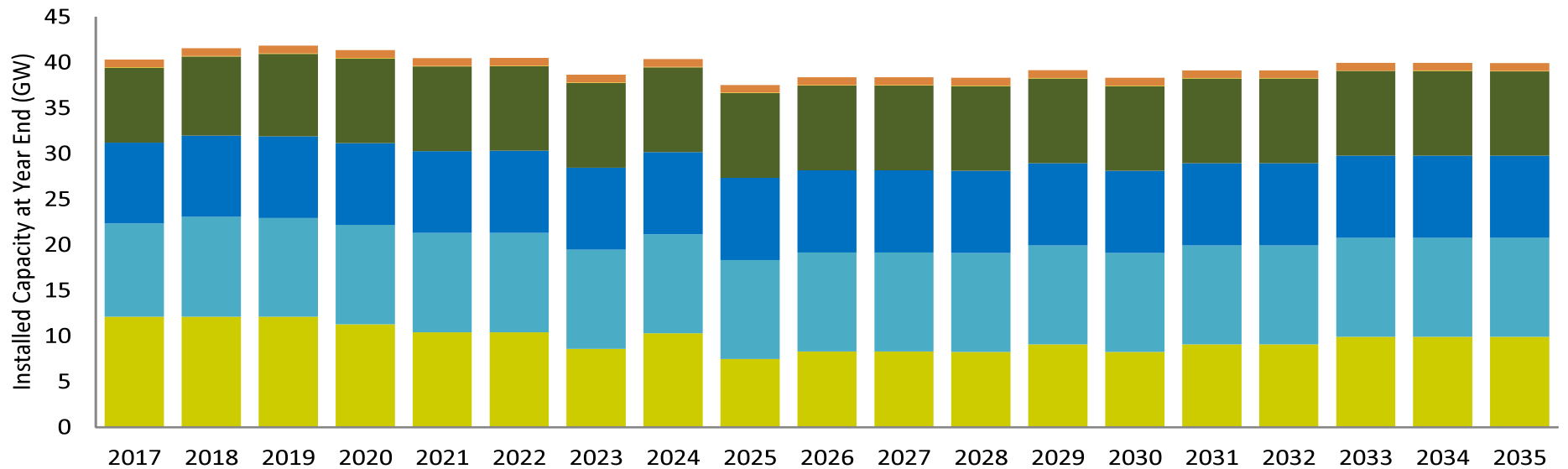
Updates to the supply mix since the 2016 Ontario Planning Outlook

- Since the 2016 OPO, there has been a 3 GW reduction in supply resources, driven by changes to the outlook for procurements and resource targets



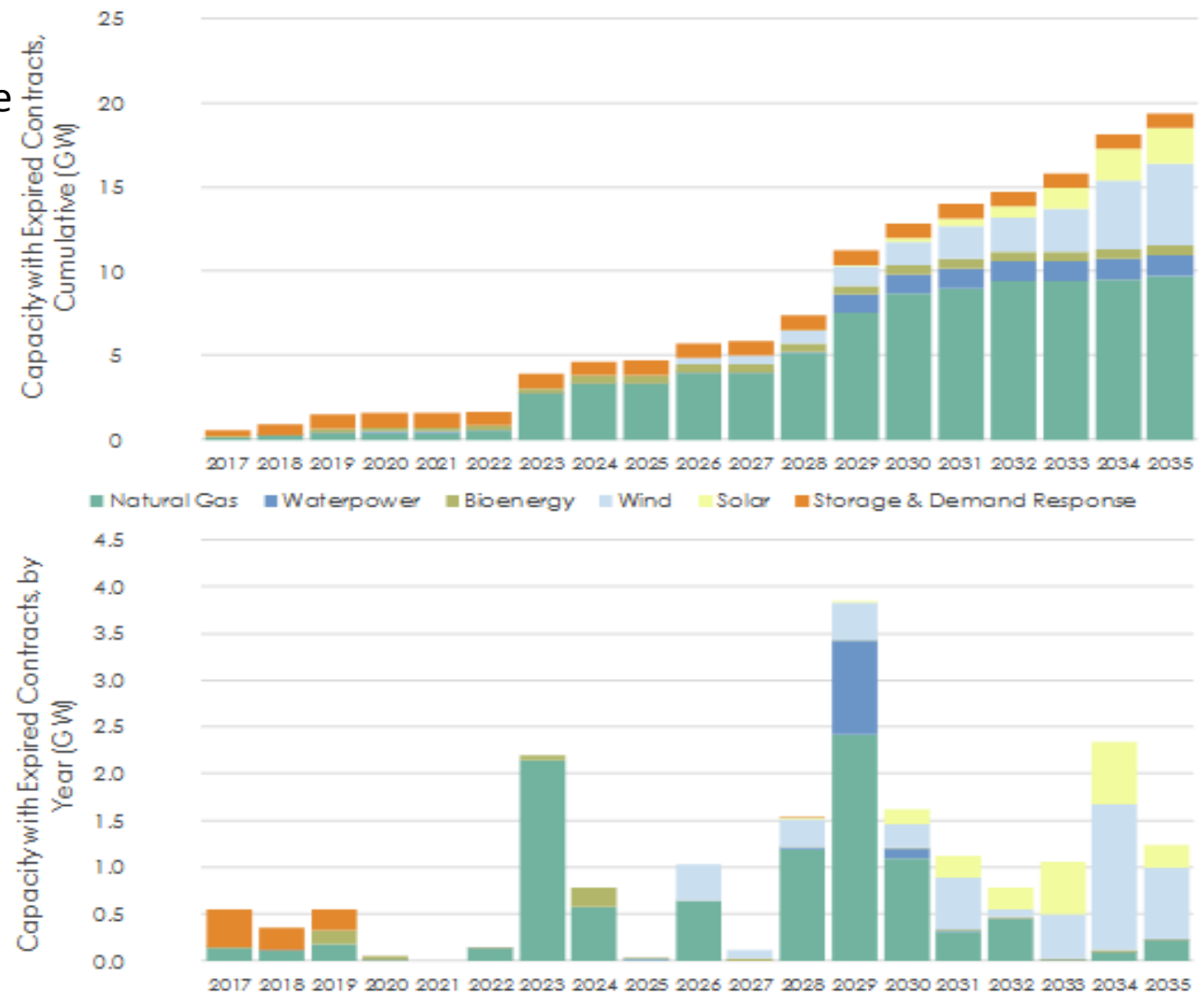
*0.3 GW of capacity additions is comprised of the in-service of renewable resources and capacity uprates since the 2016 OPO.

Installed supply mix by fuel type and commitment type



Resources with expired contracts

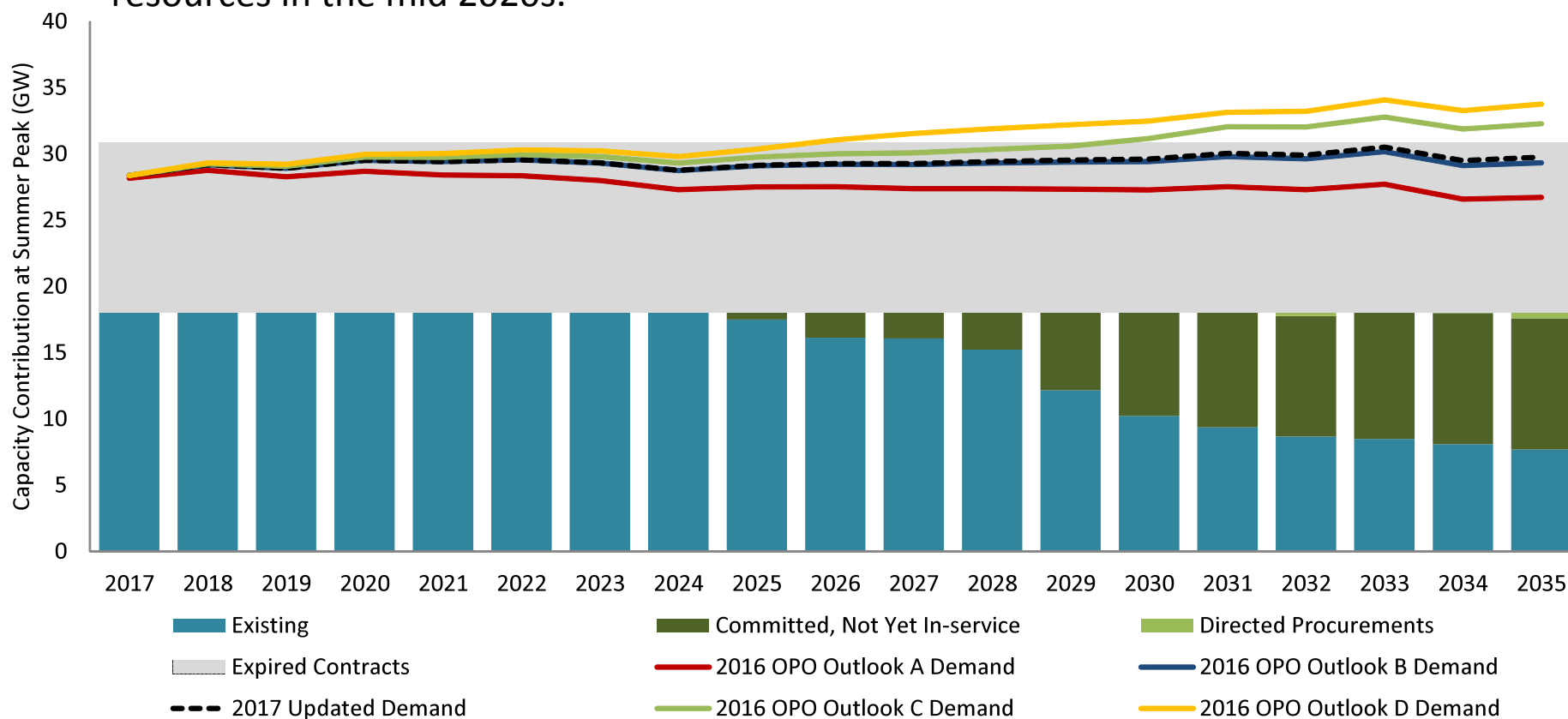
- 18 GW of supply resources will reach the end of their contract term by 2035
- These resources provide opportunities for adaptation should, for example, demand trend lower or as better opportunities arise. Nuclear refurbishment off-ramps also provide additional flexibility.



Capacity shown is at year-end.

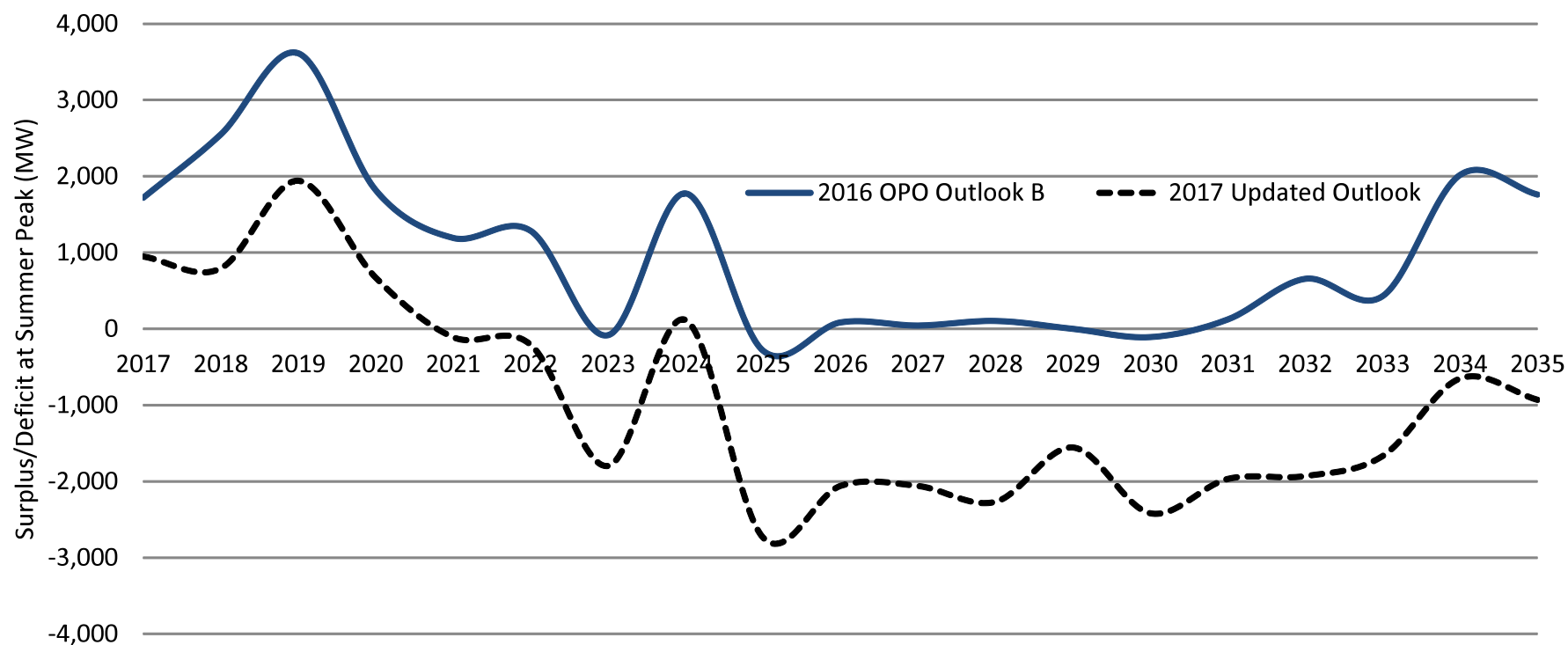
Available supply at time of peak relative to resource requirements

- The OPO Outlook B saw Ontario having sufficient resources to meet demand throughout the planning outlook. In the updated outlook, Ontario sees a need for additional resources in the mid 2020s.



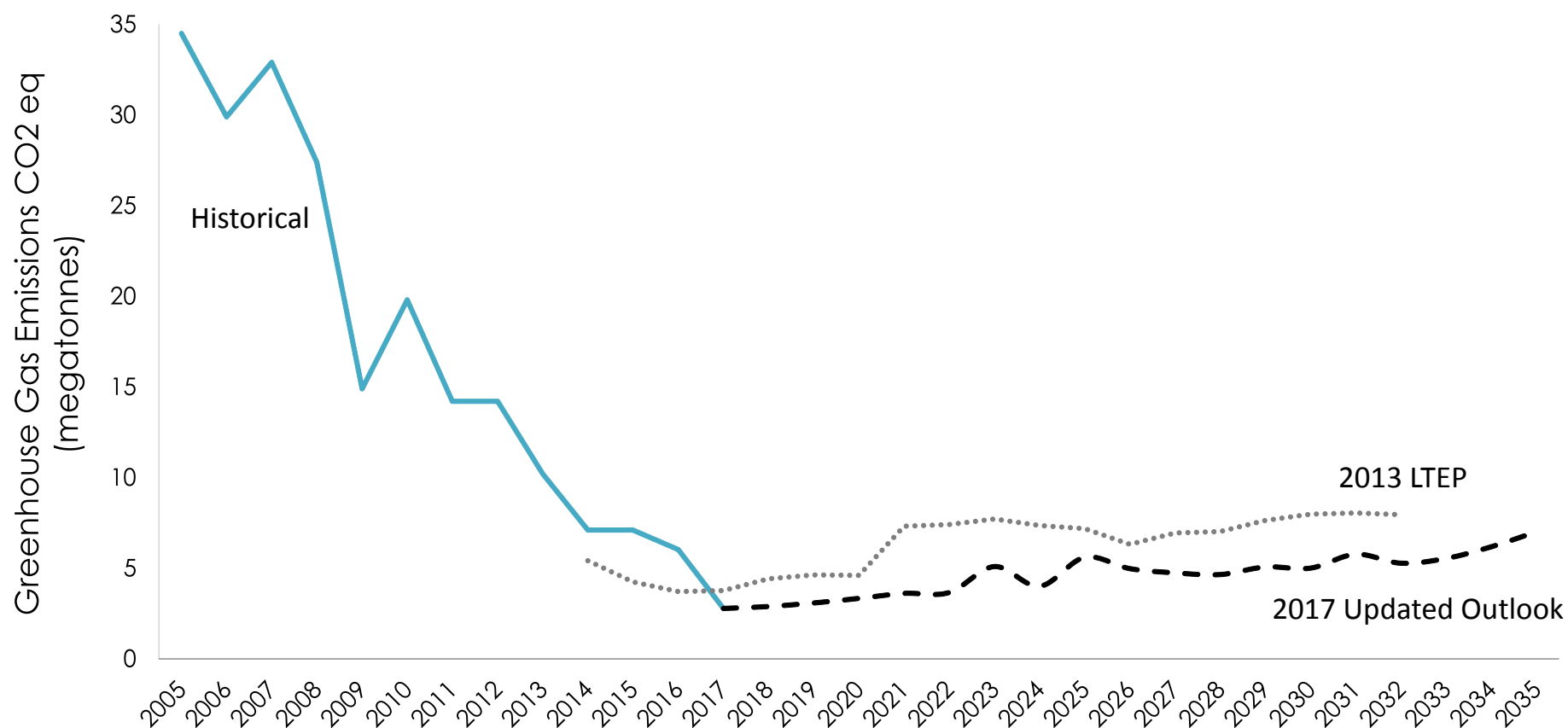
Capacity surplus and deficit at time of peak demand

- Ontario is expected to have sufficient supply to about the mid 2020s after which time there may be a need for additional resources



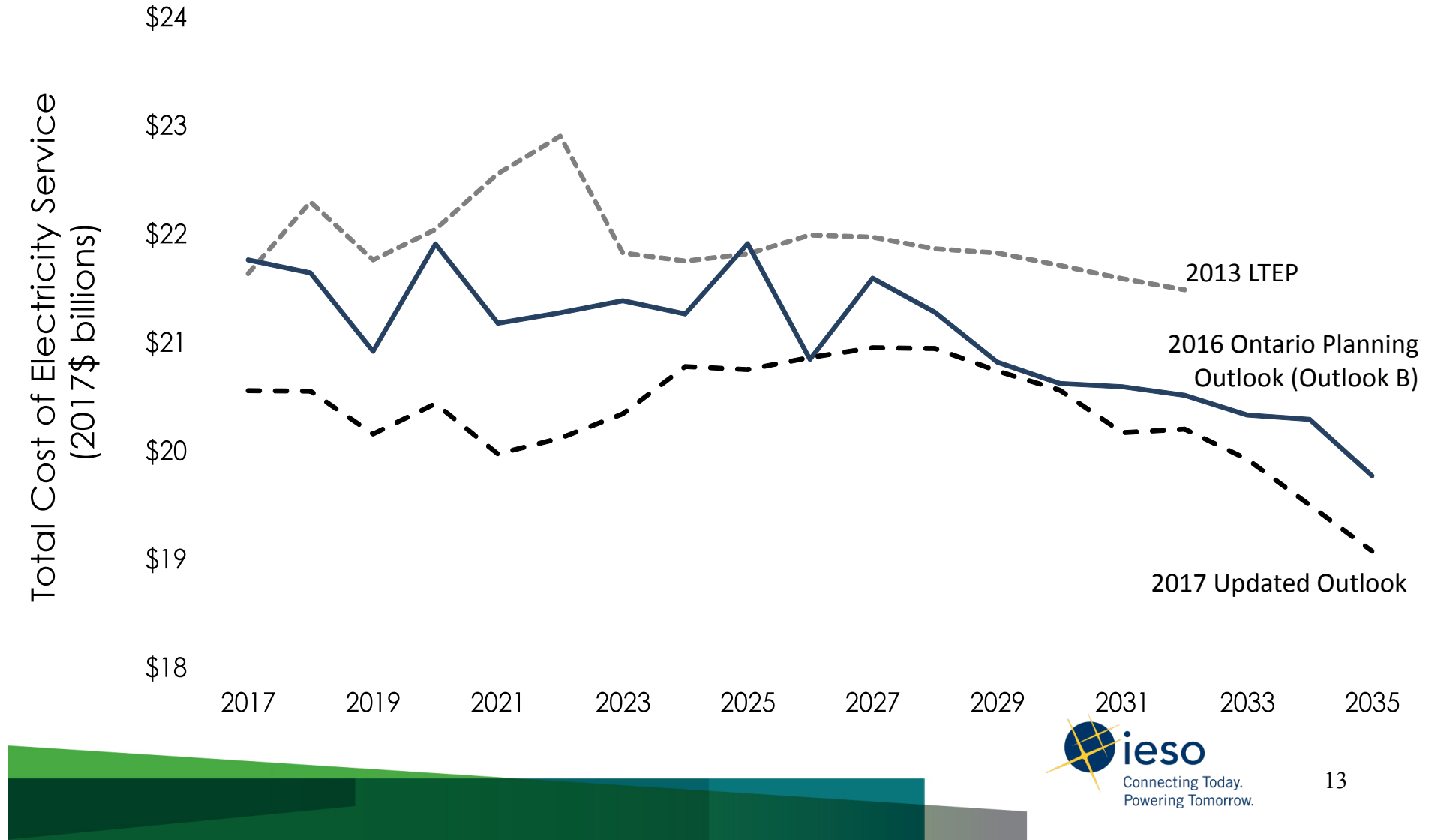
Outlook for greenhouse gas emissions

- With the retirement of the coal plants, we've seen GHG emissions in Ontario's electricity sector decline by over 80% in the past 10 years. Relative to the 2013 LTEP, the updated outlook sees electricity sector GHG emissions being on average 2 MT/year lower.



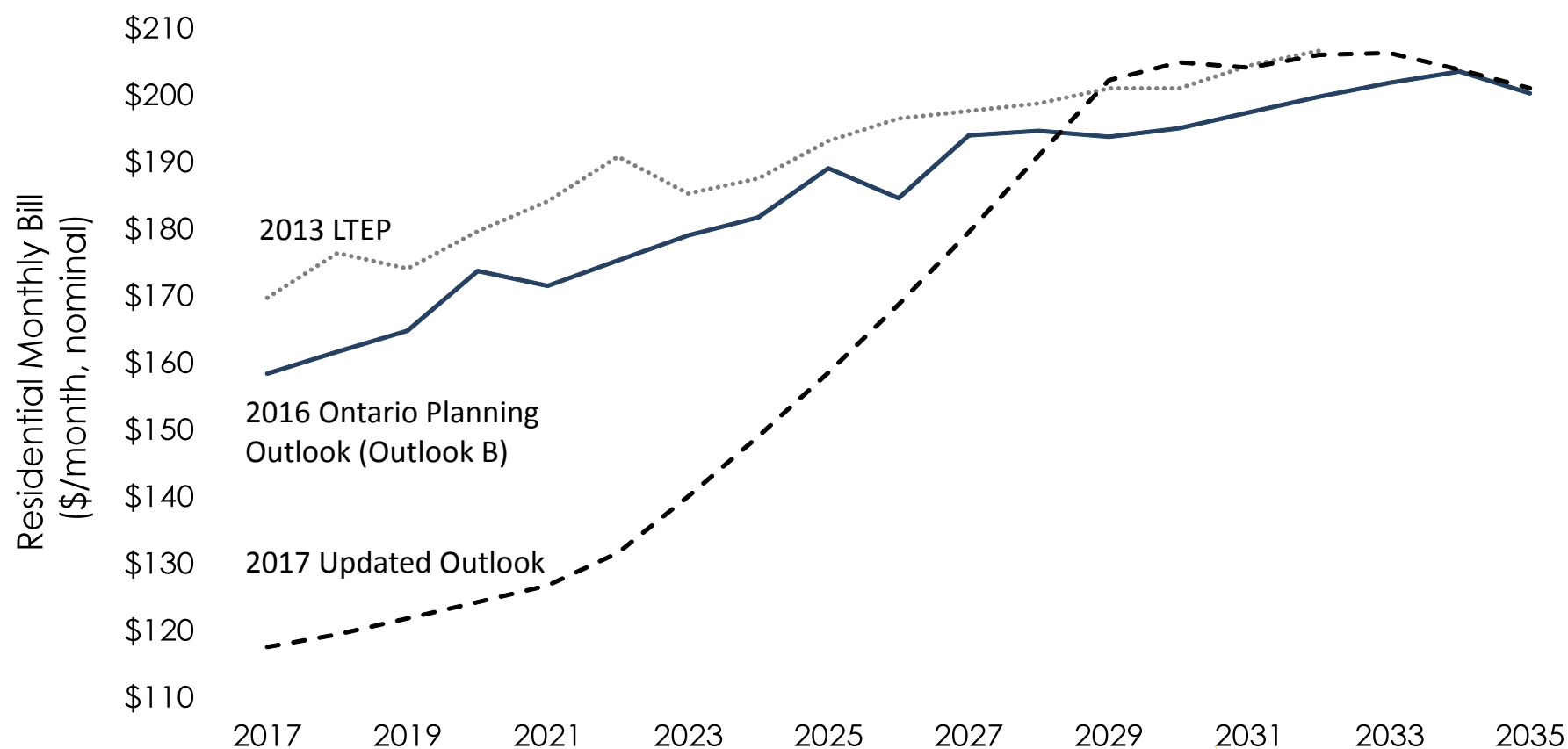
Outlook for the total cost of electricity service

- Outlooks for the total cost of electricity service have been trending lower with each iteration of the outlook



Outlook for residential electricity bills

- In the near-term, the outlook for residential bills is significantly lower than the 2013 LTEP and 2016 OPO Outlook B. This is mostly due to the Fair Hydro Plan. Towards the end of the planning horizon, the updated cost outlook is similar to the 2013 LTEP and 2016 OPO Outlook B.



IESO resources – keep in touch



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