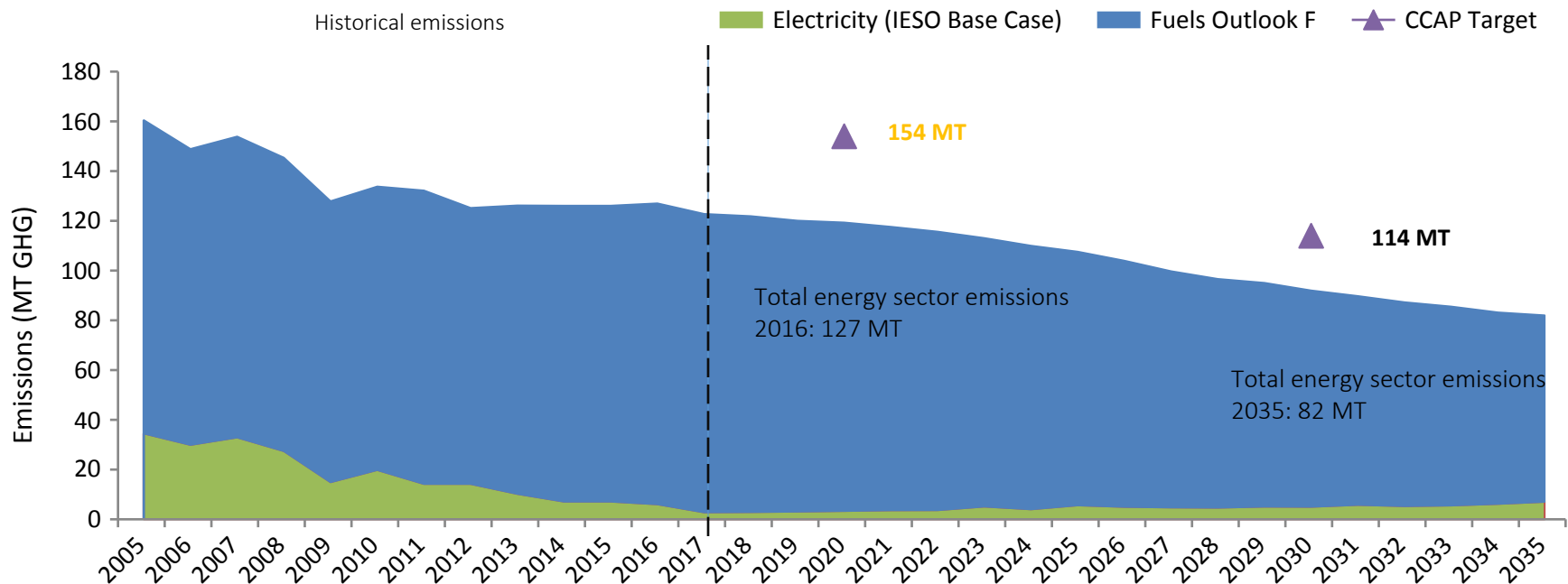


GHG Emissions – Integrated Outlook

- The combined GHG emissions from Ontario's energy sector (i.e., electricity and fuels) would decrease by 35 per cent by 2035 relative to 2016 levels, and would remain well below the economy-wide CCAP target for 2030.



Notes: Emissions excludes non-energy sources including agriculture, waste and non-energy related industrial processes. Emissions from FTR Outlook F used as a proxy pending updated modelling from Navigant. Navigant to provide data when available. Updated IESO base case for electricity subject to key assumptions.

Fuels Outlook – Modelling Assumptions

- A summary of the fuels Outlook modelling assumptions is outlined below. Note: These are subject to change in the proposed approach, pending further analysis to meet the FTR emissions targets without any additional impacts on the electricity sector.

Initiative	Key Assumptions
<i>To be updated in proposed modelling approach</i>	
Building Envelope Improvements	600,000 single family fossil-fuel heated dwellings improve building envelope to reduce heating load by 20 GJ/year 255,000 multi-family fossil fuel heated dwellings improve building envelope to reduce heating load by 9 GJ/year 6 per cent reduction in heating load for fossil-fuel heated commercial buildings
Transportation Sector Switching	- Additional 1.3 billion litres of ethanol - Additional 2 billion litres of biodiesel /renewable diesel - Switching from diesel to natural gas / hydrogen / propane, etc. - Additional urban trips on buses (instead of cars)
Renewable Natural Gas (RNG)	155 PJ of RNG injected into the system
Electrification: Vehicles	- Additional 1,400,00 light-duty electric vehicles (EVs) - Additional 30,400 heavy duty EVs
<i>Not included in proposed modelling approach</i>	
Electrification: Public Transit	Incremental 39,000,000 trips using electrified public transit
Electrification: Heating and Industrial	2,100,000 households upgrade/switch from natural gas to electricity for heating. 80 million square metres of commercial floor space switches from natural gas to electricity for heating. 57 PJ of industrial fossil fuel demand switches to electric equivalent.

Electricity Outlook – Modelling Assumptions

- A summary of modelling assumptions is presented below.

Outlook	Key Assumptions
Supply	<u>Nuclear</u> • Refurbishment schedule reflects OPG's current business plan and the amended Bruce refurbishment schedule; and • Pickering is assumed to operate to 2022/2024. <u>Renewables</u> • Suspension of LRP II and EFW; and • FIT 5 and microFIT 2017 are the remaining renewable programs to be procured that are not yet online or contracted. <u>Electricity Trade Agreements</u> • Ontario-Quebec (2.3 TWh per year from 2017 to 2022 inclusive, 500 MW capacity per winter December 2016 to March 2023 from Ontario to Quebec and 500 MW Quebec to Ontario.
Demand	• Based on OPO Outlook B, with the addition of EVs per OPO Outlook D (i.e., 2.4 million EVs by 2035). Note: Transportation-related electricity is modelled separately.
Conservation and Demand Response	• Conservation: Reflects 2013 LTEP energy efficiency target of 30 TWh by 2032 and assumes that the near term target set in the Conservation First Framework and Industrial Accelerator Program of 8.7 TWh will be achieved by 2020; and • Demand Response (DR): any DR currently procured through the DR auction would continue to be available in future auctions.

Electricity Outlook – Modelling Assumptions (cont'd)

Outlook	Key Assumptions
Price	• Reflects OPG smoothed rates. • Assumes the generation assets will continue to be available for the duration of the planning outlook, where the costing of expired contracts reflect: – Natural gas is converted to a generic gas plan with assumptions per Hatch report; – Wind is based on LRP I, with a discounted capital cost re-investment for end of life components; – Solar is based on LRP I, except that future investments for end of life components decline in cost in recognition of technological improvements; and – Note: Both the wind and solar re-investment costs are lower than that used in the OPO. • Natural gas price forecast is based on the Sproule projection of February 2017. • Carbon price is based on the actual floor price for the March 2017 cap and trade auction, inflated at 5 per cent as per the cap and trade regulation and 2 per cent inflationary increase. • Updated transmission rates to reflect current application before the OEB for 2017 and 2018; Adjustments to forecast methodology to calculate the fixed and variable elements of the distribution costs. • The estimated bill for a residential consumer now incorporates May and July 2017 actuals (whereas a forecast for the year was previously used).