

Fact Sheet: Ontario's Electricity System Emissions

Ontario's Clean Electricity System

- In 2014, Ontario became the first jurisdiction in North America to completely phase out coal-fired electricity generation. Today, Ontario's electricity system, including supply on both the distribution and transmission networks, is roughly 94 per cent greenhouse gas (GHG) emissions free.
- While natural gas generation accounts for 28 per cent of Ontario's total installed generation capacity, it only produces seven per cent of all electricity generated in the province.
- Over a five-year average (2015-2019), Ontario has a very low emitting electricity system, representing less than three per cent of the province's total GHG emissions. By comparison, the transportation sector accounts for about 38 per cent.
- GHG emissions from natural gas generation are expected to increase in the coming years driven by the retirement of the Pickering Nuclear generation station, nuclear refurbishments and increased demand for electricity, partly from electrification.
- Depending on the pace of economic growth, GHG emissions from the electricity system could reach 12.2 megatonnes by 2030, one-third what they were in 2005. This amount would still be less than GHG emissions in other industrial nations such as the US, UK, France and Germany.

Decarbonization and Ontario's Electricity System

- An increase in electricity sector emissions does not necessarily mean an increase in economy-wide emissions. Switching from high-carbon fuels to low-carbon electricity could increase electricity sector emissions while reducing overall province-wide emissions.
- Electric vehicles represent an optimal opportunity to reduce carbon emissions - an EV charged in Ontario produces on average only three per cent of the emissions of a similar gas-fueled car. Even if that EV is charged on the hottest summer days when gas is used the most, it would still produce only 40 per cent of the emissions of its gas counterpart.

- While Ontario's electricity system is currently dependent on natural gas generation to meet its needs, the IESO is actively pursuing new technologies that could reduce the system's dependence on natural gas, such as: battery storage, local supply resources and demand response programs.
- The IESO is also pursuing a number of opportunities to further decarbonize Ontario's electricity sector, including testing technologies like hybrid storage and renewables that have the potential to reduce the need for gas generation during peak periods.
- Demand response programs, such as the Industrial Conservation Initiative, and Save on Energy conservation programs also work to shift or reduce electricity demand during peak periods, lowering GHG emissions.