



Office of the Commissioner
Environmental Services Department

MEMORANDUM

To: Members of Committee of the Whole

From: Erin Mahoney, M. Eng.
Commissioner of Environmental Services

Date: October 4, 2021

Re: Operational Summary - York Energy Centre in Township of King

At the Committee of the Whole meeting in June 2021, staff were requested to report back to Council with information regarding the operation of the York Energy Centre in the Township of King and continuity of electricity supply it provides for York Region.

Since 2012, York Energy Centre in King Township has generated sufficient electricity to power 580,000 average sized Ontario homes for one year

Since its start of operation in 2012, the York Energy Centre in King has generated 463.3 gigawatt hours of electricity, sufficient to power 580,000¹ average sized Ontario homes for one year. Table 1 summarizes annual generation, hours of operation and estimated emissions from the natural gas powered generator. Most generation from this facility occurred in its first three years of operation.

¹ Ontario Energy Board – [Defining Ontario's Typical Electricity Customer](#) - 2016

Table 1
Operational Summary - York Energy Centre in King Township

Year	Gigawatt Hours	Hours	Greenhouse Gas Emissions (tonnes CO ₂)
2012	112.2	600	47,500
2013	70.6	496	29,900
2014	75.2	520	31,850
2015	49.9	381	21,100
2016	19.5	137	8,300
2017	30.8	221	13,050
2018	19.7	160	8,350
2019	33.1	239	14,000
2020	27.7	187	11,750
YTD 2021	24.5	187	10,400
Total	463.3	3,128	196,200

Source: Independent Electricity Systems Operator – [Generator Output Capability Month Report](#)

Since 2015, energy efficiency programs, renewable energy generation and refurbishment of Ontario’s nuclear generators have transitioned the York Energy Centre into its intended role of being an intermittent generator that supports system reliability for short periods of time throughout the year. Looking forward, historical data for the site is relevant in forecasting potential future emission increases due to forecasted reductions in nuclear power generation and higher reliance on natural gas generation.

Facility operates on intermittent basis to ensure electricity supply meets occasions of high demand for municipalities in northern York Region

The York Energy Centre is intended to operate on an intermittent basis and ensure a continuous supply of electricity to the Towns of Aurora, East Gwillimbury, Georgina, Newmarket, Whitchurch-Stouffville, and the Township of King. Since 2015, York Energy Centre has operated an average of 216 hours per year or 2.5% of total available annual hours (8,760 hours). In the past number of years, it has operated for two or three hours at a time when local demand exceeds supply, ensuring reliability of local electricity supply.

Average annual emissions from plant operation are equivalent to those from York Region's buildings and facilities

Since 2015, the York Energy Centre emits an average of 12,400² tonnes of greenhouse gases annually. This is equivalent to the total emissions from York Region's buildings and facilities or the amount of carbon absorbed in one year by an 11.4 square kilometer mature forest.

While historical operation of the York Energy Centre and other natural gas generators in Ontario have been low as a percentage of total available annual run-time, any increase in the use of these facilities will increase Ontario's greenhouse gas emissions related to electricity use. On July 12, 2021, Wayne Emmerson, Chairman and CEO of York Region submitted a letter to the Ontario Minister of Energy to advocate for low emission sources of electricity.

As communicated in the [2020 Corporate Energy Report](#), staff continue to advocate for new energy conservation measures and the use of low emission alternatives to support York Region's shift to decarbonize its operations through electrification such as purchase of electric vehicles, including buses and fleet.



Erin Mahoney, M. Eng.
Commissioner of Environmental Services



Bruce Macgregor
Chief Administrative Officer

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² Based on [2018 National Inventory Reporting](#) emissions from average Ontario natural gas electricity generators