

Fact Sheet: *Bruce Power App Electricity Calculator*

Bruce Power has an App that provides users an interactive electricity calculator so users can better understand what sources their electricity comes from and both the cost and environmental impact from each of these sources. Ontario's electricity system and billing structure can be very complicated so when developing this tool the following assumptions were made, based on credible information, to provide this straight-forward tool for people to use.

Supply Mix

From Ontario's Independent Electricity System Operator (IESO):
The table below reflects total transmission connected generation output in 2016, broken out by fuel type.

Year	Nuclear	Hydro	Coal	Gas/Oil	Wind	Biofuel	Other
2016	91.7 TWh 61%	35.7 TWh 24%	n/a	12.7 TWh 9%	9.3 TWh 6%	0.49 TWh <1%%	0.46 TWh <1%
Due to rounding, percentages may not add to 100.							

Link: <http://www.ieso.ca/Pages/News/NewsItem.aspx?newsID=7545>

Electricity Costs

All residential consumer related prices and rates used in these calculators are from the Ontario Energy Board Regulated Price Plan Price Report providing rates in effect from November 1, 2016 to October 21, 2017.

Link:

<http://www.ontarioenergyboard.ca/oeb/industry/regulatory+proceedings/policy+initiatives+and+consultations/regulated+price+plan>

C02 Emissions

Emission Calculations use fuel-specific emission factors based on grid data. The values have been developed using a peer-reviewed and published methodology entitled "Calculation and Application of Hourly Emission Factors for Increase Accuracy in Scope Two Emission Calculations." The methodology has been applied and adapted by the co-author of the study to provide the values required for the Application.

Below are the sources used to develop the weighted average annual emission factors by fuel type:

U.S. Energy Information Administration:

<https://www.eia.gov/tools/faqs/faq.cfm?id=74&t=11>

United States Environmental Protection Agency: Natural Gas – Air Emissions

<http://www.epa.gov/cleanenergy/energy-and-you/affect/natural-gas.html>

This source was used to validate the approximate emission intensity of natural gas generation facilities in relation to coal facilities.

Environment Canada’s “Search Facility Data” Search Engine:

<http://www.ec.gc.ca/ges-ghg/default.asp?lang=En&n=040E378D-1>

Ontario Ministry of Energy - Ontario’s Long-Term Energy Plan

<http://www.energy.gov.on.ca/en/ltep/>

Figure 5 was consulted for the Ministry of Energy’s 2030 projected electricity supply mix.

DiValentino, E. & Frommann, K. Calculation and Application of Hourly Emission Factors for Increased Accuracy in Scope Two Emissions Calculations. Transactions of the Canadian Society for Mechanical Engineering, 36, 143-148.