The Value of Electricity to Ontario

A presentation by APPrO

APPrO
ASSOCIATION OF POWER PRODUCERS OF ONTARIO

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Investments made in Generation
in Ontario (2008 – 2014)

Nearly

$30 Billion

Investments made in Generation in Ontario (2008 – 2014)

Wind energy
$6 billion

Natural gas
$5.8 billion

Solar energy
$5.8 billion

Waterpower
$5 billion[1]

Bio-energy
$1.3 billion

Nuclear
$5.2 billion

Additional renewable power capacity installed in Ontario (2008 – 2014[2])

6,298 MW

=

$18.2 billion

value

Additional renewable power capacity installed in Ontario (2008 – 2014[2])

Wind energy
2600 MW

Waterpower
1980 MW

Bio-energy
325 MW

Solar energy
1400 MW

Total generating capacity added
to the Ontario grid in the last 6 years

12,731 MW

Enough to power

8 million+

new homes[3]

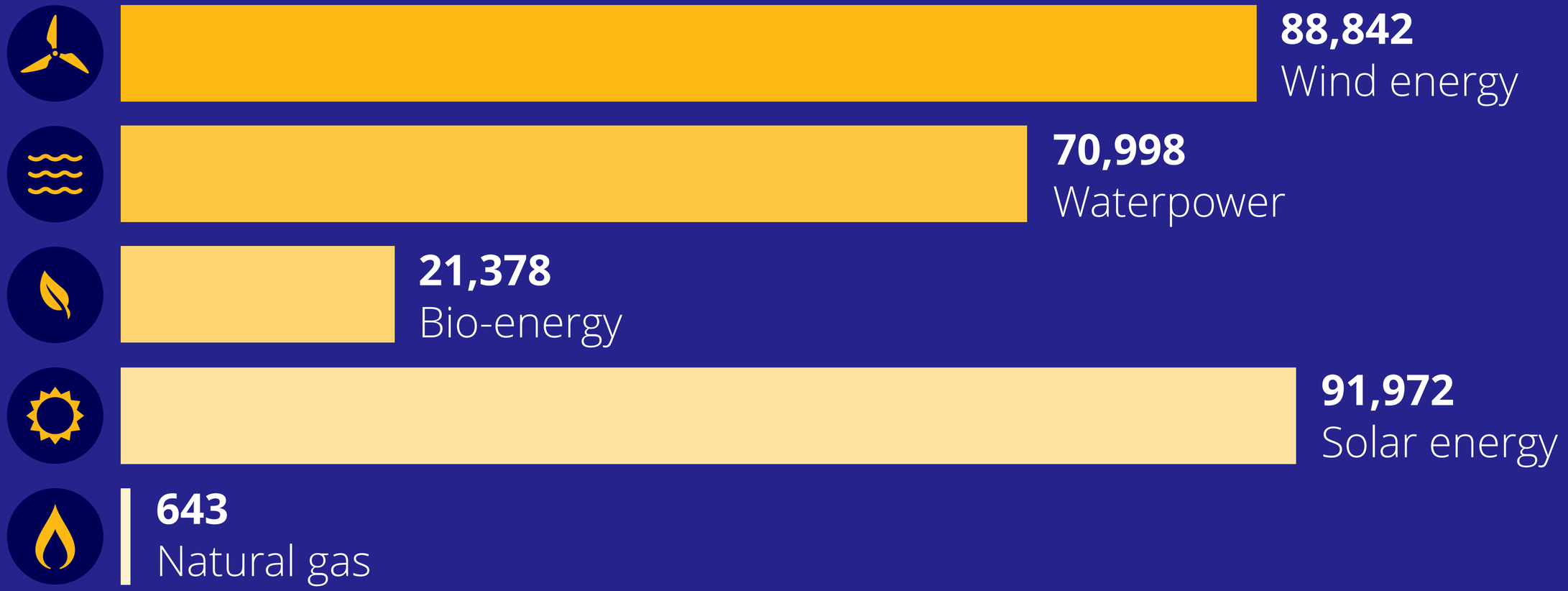
Amount of money paid by Ontario consumers for electricity in 2014

$15.3 billion[4]

(Not including delivery charges)

PAID

Jobs created by new generation in Ontario since 2008



Jobs created by new generation in Ontario since 2008

Potential future job creation resulting from new generation capacity across Canada

Up to

620,000

Person-years

Plus

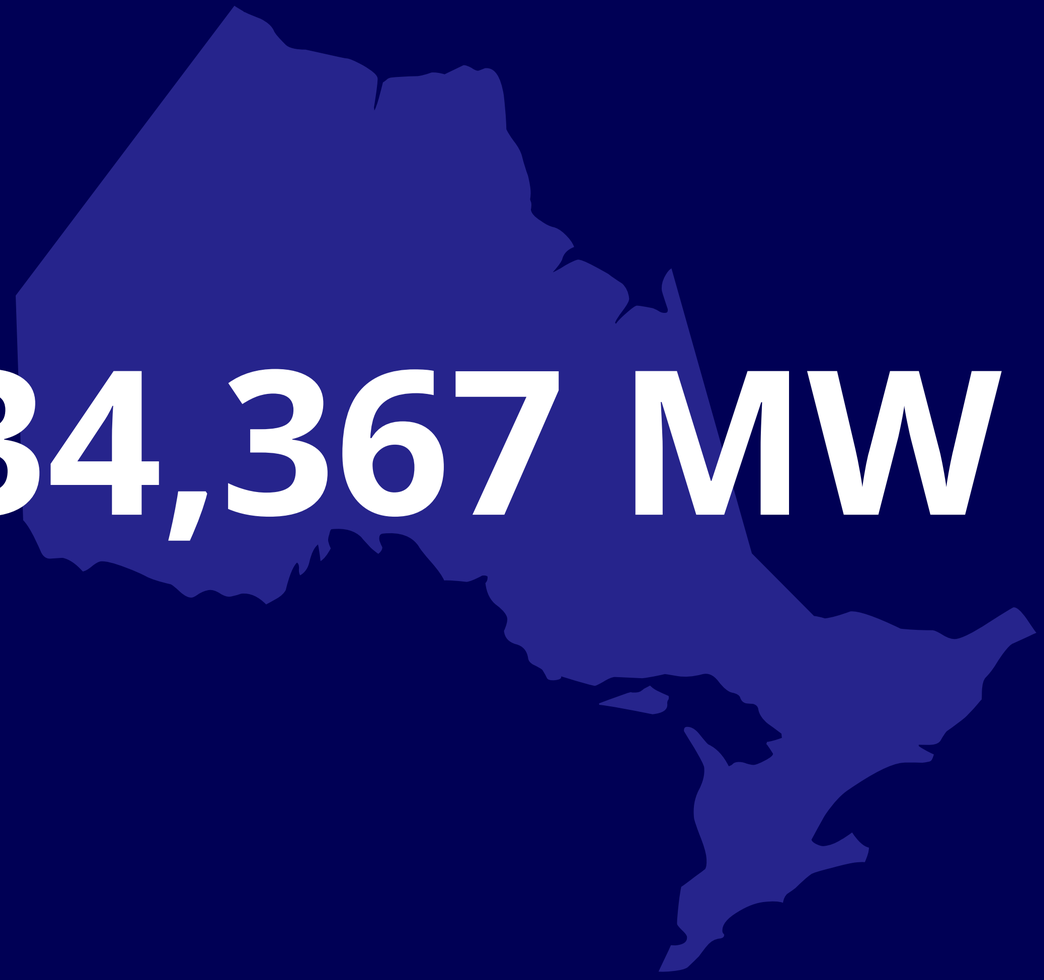
34,000

full time and long term operator jobs

“Most of the jobs that are created are high skilled, well paid and technical occupations that offer opportunities for advancement throughout a career.”[6]

Michelle Branigan
CEO, Electricity Human Resources Canada

Total installed capacity in Ontario (year-end 2014)



34,367 MW

Number of generation facilities under contract in Ontario (year-end 2014)

MicroFIT

20,345 projects
176.58 MW

FIT Program

3,059 projects
4,622.8 MW

Total

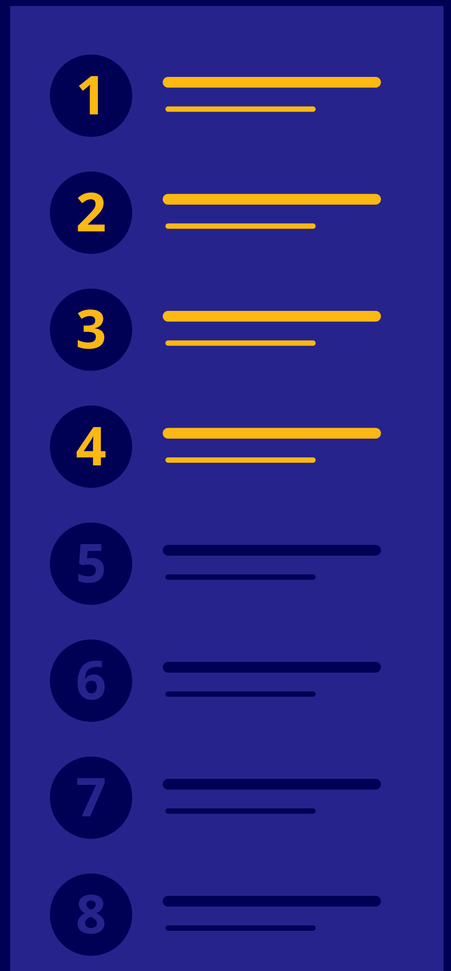
22,171 projects
18,878.2 MW[7]

Economic benefits

In a list of Canada’s Biggest Infrastructure Projects for 2015,

Waterpower took the top four spots

as well as ranking 10 more times on the list[8]



Economic benefits

Waterpower

alone contributes

$37 billion

per year to Canada’s GDP

and supports

135,000 jobs

as of 2013, according to a study published by the Canadian Hydro Association

Economic benefits

Bruce Power

alone represents a major part of Ontario's economy

The company and its partners have invested

$10 billion

in the company since 2001

Economic benefits

Bruce Power

is the world’s largest operating nuclear facility, as well as Canada’s largest public-private partnership with annual operating costs of

$1.79 billion

it produces more than

$4 billion

per year in economic benefits

For further information, and details of the background research, please visit:

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Notes and sources

1

Waterpower investment values include contracted facilities and re-contracted facilities, as well as OPG regulated assets. The methodology used to calculate waterpower investment values incorporates data from the IESO, data from publicly available sources, and information gathered from consultation with the OWA.

2

Figures obtained from OPA Quarterly Progress Reports on Electricity Supply over the relevant timeframe, as documented in Power Advisory report “APPrO Research from Power Advisory May 29 2015”. At the time this research was undertaken, the 2014 4th Quarterly Report was not available, therefore values from the 3rd Quarterly Report were used. Some figures have been rounded.

3

These figures on the number of homes powered by new generation are based on realistic assumptions that consider both the capacity and energy demands of typical Ontario homes, and the capacity and energy characteristics of Ontario generation under typical Ontario conditions. For details on how capacity and energy considerations were combined to arrive at these figures, please see the underlying charts prepared by Power Advisory LLC, further referenced below.

4

Data is from these sources:

- IESO 2014 Electricity Production, Consumption and Price data available at http://www.ieso.ca/Pages/Power-Data/2014-Electricity-Production-Consumption-and-Price-Data.aspx
- IESO Monthly Market Report December 2014

5

These figures represent ongoing jobs, not person-years of employment. The nature of the jobs varies (i.e. construction jobs may only last for 2 years, accounting jobs may last for the life of a project, etc.) Some of the jobs included in these figures are outside Ontario. Although the calculations do not provide a percentage breakdown as to job locations, it is reasonable to assume that the majority of jobs created by Ontario generation are located in Ontario. Figures do not include the jobs created by extracting, processing and distributing the fuel.

6

Canadian suppliers are expected to add between 20,000 and 52,000 MWs of new renewable electricity capacity from 2012 to 2022. These gains could add 60% to the total system. Capacity for the newer sectors (wind, solar, geothermal, bio-energy, small hydro and tidal), will increase more than three-fold.

- Projections from the Electricity Human Resources Canada (EHRC) "Renewing Futures (RF)" labour market study.

The EHRC Renewing Futures research developed three scenarios to measure the range of growth and related risks by sector and region. Together these three cases bracket the range of likely growth in renewable energy systems from 2012 to 2022. Researchers found that “the risk of skill shortages threatens to limit expansion under all the projected scenarios. Even in the more limited growth scenarios, recruiting the required numbers of skilled workers will exceed the limits of current training programs and bring Renewable Energy employers into competition with hiring anticipated in other industries.”

Depending on the speed of development, renewable energy investments are projected to create between 190,000 and 620,000 person-years of employment from 2012 to 2022.

- Projections from the Electricity Human Resources Canada "Renewing Futures (RF)" 2013 labour market study, which assesses the capacity of Canada’s workforce to sustain the expansion of electricity related renewable energy generation (RE) systems to 2022.

Canada-wide, 20,000 to 52,000 MW of new renewable power is expected to be built by 2022.

- Renewing Futures: Video Presentation of the Research Findings
  http://renewingfutures.ca/english/NewAndNoteworthy.asp?a=view&id=15

7

Figures on contracted supply in Ontario are from:
IESO Progress Report on Contracted Supply Q1 2015
http://www.ieso.ca/Documents/Supply/Progress-Report-Contracted-Supply-Q12015.pdf

8

See “Hydropower and the Canadian Economy - Final Report -R2”
http://prismeconomics.com/hydropower-and-the-canadian-economy-jobs-and-investment-in-canadas-largest-electricity-source/

See also article “Hydroelectric power tops Canada’s infrastructure projects list”
http://magazine.appro.org/index.php?option=com_content&task=view&id=3241&Itemid=44

Unless otherwise noted, all figures are from the Power Advisory report “APPrO Research from Power Advisory May 29 2015” based on publicly available sources.