Telephone Survey

Public Attitudes Toward Refurbishment

Canadian Nuclear Association
130 Albert Street, Suite 1610
Ottawa, ON K1P 5G4

May 2018
Key Findings

1. Support for refurbishment in general is strong at 76% overall, and increases in conjunction with understanding of nuclear (from 72% to 82% strongly or somewhat support).

2. Support for refurbishing Bruce Power is marginally higher (79%) – albeit also marginally less intense (34% strongly support vs 38%) – than support for refurbishment in general. Support for refurbishment at Bruce Power is the one subject in this survey on which opinion does not vary significantly by the degree to which respondents say they understand nuclear energy.

3. Opinion is fairly evenly divided on the impact refurbishment at Bruce Power would have on electricity prices (32% good, 28% bad, 26% don’t know), but a strong majority (69%) anticipate a positive impact on jobs/the economy. Just under 3-in-10 (28%) think refurbishment at Bruce Power would be good for both electricity prices and jobs/the economy. Conversely, only 5% anticipate a negative impact on both.

4. Less than half (45%) are familiar with Bruce Power, but a plurality of those who have heard of it have a positive impression (46% say “good” or better).

5. Respondents with an opinion on the management of Bruce Power view it favourably. Bruce Power is viewed as safe (50% net agree), secure (45% net agree), responsibly managed (37% net agree) and a good corporate citizen (36% net agree). Favourable opinion is significantly higher among those who are familiar with Bruce Power. Further, response to messages regarding medical isotopes is much more positive than negative.
Methodology

- These are the results of a telephone survey of 578 randomly-selected Ontario residents, 18 years or older, between May 11\textsuperscript{th} and May 15\textsuperscript{th}, 2018.

- Only one respondent per household was eligible to complete this survey.

- The survey includes both landline and cellphone respondents in order to ensure representation of cellphone only households.

- The sample has been weighted by age, gender and region to n=500 using the latest available Statistics Canada Census data to reflect the actual demographic composition of the population.

- After weighting the data, the aggregated results are considered accurate to within ±4.4%, 19 times out of 20.

- The margin of error will be larger within each sub-grouping of the sample.

Note: Graphs and tables may not always total 100% due to rounding values rather than any error in data. Sums are added before rounding numbers.
To have a more meaningful analysis, the 9 regions are further combined into 4 regions: Toronto (Outer Toronto + Centre Toronto), Rest of GTA (the Metro Belts), South/West (South West + South Central), and North/East (East + Central + North).
Demographics: Respondent Profile

**Age-Gender**

<table>
<thead>
<tr>
<th>Age Group</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>M 18-34</td>
<td>14%</td>
</tr>
<tr>
<td>M 35-54</td>
<td>17%</td>
</tr>
<tr>
<td>M 55+</td>
<td>18%</td>
</tr>
<tr>
<td>F 18-34</td>
<td>14%</td>
</tr>
<tr>
<td>F 35-54</td>
<td>18%</td>
</tr>
<tr>
<td>F 55+</td>
<td>18%</td>
</tr>
</tbody>
</table>

**Gender Distribution**

- Male = 48%
- Female = 52%

**Region**

<table>
<thead>
<tr>
<th>Region</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Toronto</td>
<td>21%</td>
</tr>
<tr>
<td>Rest of GTA</td>
<td>26%</td>
</tr>
<tr>
<td>South/West</td>
<td>26%</td>
</tr>
<tr>
<td>North/East</td>
<td>27%</td>
</tr>
</tbody>
</table>
Support for Refurbishment
I am now going to read you a list of several ways to produce electricity. For each of these ways of producing energy, please tell me if ...

[asked of all respondents]

- Hydroelectric Power
  - You understand the details of that way of generating electricity works: 39%
  - You have a general understanding but don’t know the details: 35%
  - You know a little, but not much: 18%
  - You don’t know anything at all about how it works: 7%

- Solar Power
  - You understand the details of that way of generating electricity works: 37%
  - You have a general understanding but don’t know the details: 36%
  - You know a little, but not much: 21%
  - You don’t know anything at all about how it works: 5%

- Wind Power
  - You understand the details of that way of generating electricity works: 34%
  - You have a general understanding but don’t know the details: 34%
  - You know a little, but not much: 23%
  - You don’t know anything at all about how it works: 8%

- Natural Gas
  - You understand the details of that way of generating electricity works: 33%
  - You have a general understanding but don’t know the details: 34%
  - You know a little, but not much: 20%
  - You don’t know anything at all about how it works: 12%

- Nuclear Energy
  - You understand the details of that way of generating electricity works: 28%
  - You have a general understanding but don’t know the details: 26%
  - You know a little, but not much: 24%
  - You don’t know anything at all about how it works: 21%
Familiarity w/ Nuclear Energy: Reported familiarity significantly higher among men than women, and in Toronto

I am now going to read you a list of several ways to produce electricity. For each of these ways of producing energy, please tell me if ... [Nuclear Energy]
[asked of all respondents]

**Familiar: 55%**

- 28% You understand the details of that way of generating electricity works
- 26% You have a general understanding but don't know the details
- 24% You know a little, but not much
- 21% You don't know anything at all about how it works

**Sample Breakdown**
*Those who have at least a general understanding*

**Region**
- Toronto: 61%
- GTA: 50%
- South/West: 54%
- North/East: 56%

**Age/Gender**
- M18-34: 69%
- M35-54: 71%
- M55+: 70%
- F18-34: 34%
- F35-54: 45%
- F55+: 42%
Many large power-generating plants in Ontario with various fuel sources will have to be replaced over the next 10 years or so because they are aging. In Ontario 80% of the plants will have to be replaced. In order to help meet Ontario future electricity demand, would you strongly support, somewhat support, somewhat oppose or strongly oppose upgrading and refurbishing existing nuclear power plants? [asked of all respondents]

**Support: 76%**

- Strongly support: 38%
- Somewhat support: 38%
- Somewhat oppose: 13%
- Strongly oppose: 11%

### Sample Breakdown

**Those who say “support”**

**Region**

- Toronto: 74%
- GTA: 82%
- South/West: 72%
- North/East: 75%

**Age/Gender**

- M18-34: 88%
- M35-54: 75%
- M55+: 81%
- F18-34: 84%
- F35-54: 64%
- F55+: 68%

**Familiarity w/ Nuclear Energy**

- Understand details: 82%
- General understanding: 74%
- Know a little/nothing: 72%

**NOTE:** the results have been recalculated to exclude those who said “Don’t know”
One of these older power stations is the Bruce Power station on the Bruce peninsula which has 6 nuclear plants that are nearing the end of their operating life. Together the Bruce units provide 30% of Ontario’s electricity. The plants are operated by a private company called Bruce Power but they are ultimately owned by the Province of Ontario. With a thorough upgrade, each of those generating stations can continue to operate for at least another 30 years. To what extent would you support the government refurbishing the Bruce Power station?

[asked of all respondents]

Support: 79%

- Strongly support: 45%
- Somewhat support: 34%
- Somewhat oppose: 10%
- Strongly oppose: 11%

**NOTE:** the results have been recalculated to exclude those who said “Don’t know”
Why Support/Oppose?: 26% of supporters say “need to/best option”; 25% of opponents prefer (renewable) alternatives

And can you please tell me why?
[asked of those who either support or oppose refurbishing Bruce Power, n=405]

Support: n=306
- Good/need it/best option: 26%
- Efficient/reliable/safe record: 11%
- Cleaner/less environmental impact: 11%
- Already in place/makes sense to refurbish short term: 7%
- Cheaper alternative/cheaper to refurbish: 7%
- Don't have all the facts/don't know what alternatives are: 7%
- Better than alternatives/no alternatives: 7%
- Maintain/create jobs/economy: 4%
- Government/private corporation issues - negative: 3%
- Prefer alternatives - should invest in renewable energy (ie solar, wind): 3%
- Should own our own power (should be owned by the government): 2%
- Not cost effective: 2%
- Safety hazards/dangers/risk of nuclear catastrophes: 2%
- Other: 7%

Oppose: n=98
- Prefer alternatives - should invest in renewable energy (ie solar, wind): 25%
- Safety hazards/dangers/risk of nuclear catastrophes: 15%
- Good/need it/best option: 13%
- Bad for environment/pollution from toxic waste disposal: 9%
- Not cost effective: 7%
- Bad idea/don't support it: 6%
- Already in place/makes sense to refurbish short term: 5%
- Cheaper alternative/cheaper to refurbish: 5%
- Don't have all the facts/don't know what alternatives are: 4%
- Better than alternatives/no alternatives: 3%
- Maintain/create jobs/economy: 3%
- Government/private corporation issues - negative: 2%
- Efficient/reliable/safe record: 1%
- Other: 5%

Note: “Refused” (<1% for Support; 0% for Oppose) not shown.
Impact of Bruce Power Refurb: While uncertain about electricity prices, a positive outlook for the economic benefit

If the Ontario Government chose to refurbish existing nuclear power units at Bruce Power, do you think this would be...
[asked of all respondents]

- 32% Good for electricity prices
- 28% Neutral/no opinion
- 13% Bad for electricity prices
- 26% Don’t know

NOTE: “Refused” (1%) not shown
Impact of Bruce Power Refurb – Prices: Price expectations more positive with understanding of nuclear energy

If the Ontario Government chose to refurbish existing nuclear power units at Bruce Power, do you think this would be...?
[asked of all respondents]

Sample Breakdown

**Those who say “good for electricity prices”**

**Region**
- Toronto: 29%
- GTA: 33%
- South/West: 36%
- North/East: 30%

**Age/Gender**
- M18-34: 37%
- M35-54: 32%
- M55+: 43%
- F18-34: 19%
- F35-54: 36%
- F55+: 24%

**Familiarity w/ Nuclear Energy**
- Understand details: 46%
- General understanding: 32%
- Know a little/nothing: 23%

**General Support for Refurbishment**
- Strongly support: 51%
- Somewhat support: 26%
- Oppose: 17%
- Don’t know: 20%

NOTE: “Refused” (1%) not shown
Impact of Bruce Power Refurb – Jobs/Economy: Strong anticipation that refurbishment at Bruce Power will be good for jobs

Q If the Ontario Government chose to refurbish existing nuclear power units at Bruce Power, do you think this would be...?
[asked of all respondents]

Sample Breakdown
Those who say “good for jobs/the economy”

Region
- Toronto: 62%
- GTA: 74%
- South/West: 72%
- North/East: 69%

Age/Gender
- M18-34: 74%
- M35-54: 54%
- M55+: 76%
- F18-34: 78%
- F35-54: 68%
- F55+: 69%

Familiarity w/ Nuclear Energy
- Understand details: 70%
- General understanding: 71%
- Know a little/nothing: 68%

General Support for Refurbishment
- Strongly support: 84%
- Somewhat support: 76%
- Oppose: 47%
- Don’t know: 51%
Impact of Bruce Power Refurb: Only 5% of respondents believe the refurbishment will have a negative impact on prices and economy

If the Ontario Government chose to refurbish existing nuclear power units at Bruce Power, do you think this would be...?

[asked of all respondents]

<table>
<thead>
<tr>
<th>Percentage out of the entire sample</th>
<th>Good for electricity prices</th>
<th>Neutral/ no opinion</th>
<th>Bad for electricity prices</th>
<th>Don’t know</th>
</tr>
</thead>
<tbody>
<tr>
<td>Good for jobs/the economy</td>
<td>28%</td>
<td>8%</td>
<td>17%</td>
<td>16%</td>
</tr>
<tr>
<td>Neutral/no opinion</td>
<td>2%</td>
<td>5%</td>
<td>3%</td>
<td>2%</td>
</tr>
<tr>
<td>Bad for jobs/the economy</td>
<td>1%</td>
<td>0%</td>
<td>5%</td>
<td>1%</td>
</tr>
<tr>
<td>Don’t know</td>
<td>1%</td>
<td>0%</td>
<td>2%</td>
<td>8%</td>
</tr>
</tbody>
</table>
Familiarity w/ Bruce Power: Almost half (45%) are at least somewhat familiar, highest among most familiar with nuclear

How familiar are you with Bruce Power? [asked of all respondents]

Familiar: 45%

- Very familiar: 7%
- Somewhat familiar: 38%
- Not very familiar: 21%
- Not at all familiar/ Never heard of it: 34%

Sample Breakdown

**Those who say “familiar”**

**Region**
- Toronto: 41%
- GTA: 48%
- South/West: 50%
- North/East: 40%

**Age/Gender**
- M18-34: 39%
- M35-54: 59%
- M55+: 58%
- F18-34: 24%
- F35-54: 40%
- F55+: 43%

**Familiarity w/ Nuclear Energy**
- Understand details: 76%
- General understanding: 47%
- Know a little/nothing: 23%

**General Support for Refurbishment**
- Strongly support: 57%
- Somewhat support: 45%
- Oppose: 40%
- Don’t know*: 14%

*NOTE: Results should be interpreted with caution due to small sample size (n=56)*
Impression of Bruce Power: A plurality have a good or better impression. Impression improves with nuclear familiarity.

And, what is your overall impression of Bruce Power? [asked of those who have heard of Bruce Power, n=410]

<table>
<thead>
<tr>
<th>Impression</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Excellent</td>
<td>6%</td>
</tr>
<tr>
<td>Very good</td>
<td>10%</td>
</tr>
<tr>
<td>Good</td>
<td>30%</td>
</tr>
<tr>
<td>Fair</td>
<td>17%</td>
</tr>
<tr>
<td>Poor</td>
<td>3%</td>
</tr>
<tr>
<td>Very poor</td>
<td>1%</td>
</tr>
<tr>
<td>Don’t know</td>
<td>33%</td>
</tr>
</tbody>
</table>

**Good or better: 46%**

**Sample Breakdown**

*Those who say “good” or better*

**Region**

- Toronto: 41%
- GTA: 39%
- South/West: 56%
- North/East: 49%

**Age/Gender**

- M18-34: 58%
- M35-54: 49%
- M55+: 53%
- F18-34: 29%
- F35-54: 39%
- F55+: 45%

**Familiarity w/ Nuclear Energy**

- Understand details: 63%
- General understanding: 46%
- Know a little/nothing: 33%

**General Support for Refurbishment**

- Strongly support: 62%
- Somewhat support: 41%
- Oppose: 32%
- Don’t know*: 29%

*NOTE: Results should be interpreted with caution due to small sample size (n=29)*
Opinion of Bruce Power: Among those with an opinion, impressions of Bruce Power are strongly favourable

I am now going to read you a few statements about Bruce Power. Please tell me to what extent you agree or disagree with each one.
[asked of all respondents]

Q

<table>
<thead>
<tr>
<th>Statement</th>
<th>Strongly agree</th>
<th>Somewhat agree</th>
<th>Somewhat disagree</th>
<th>Strongly disagree</th>
<th>Don’t know</th>
<th>Net Agree</th>
</tr>
</thead>
<tbody>
<tr>
<td>I have confidence that the Bruce Nuclear Facility operates safely</td>
<td>28%</td>
<td>32%</td>
<td>6%</td>
<td>3%</td>
<td>31%</td>
<td>50%</td>
</tr>
<tr>
<td>I have confidence in the security measures at the Bruce Nuclear Facility</td>
<td>23%</td>
<td>31%</td>
<td>6%</td>
<td>3%</td>
<td>37%</td>
<td>45%</td>
</tr>
<tr>
<td>Bruce Power is responsibly managed</td>
<td>14%</td>
<td>30%</td>
<td>5%</td>
<td>2%</td>
<td>48%</td>
<td>37%</td>
</tr>
<tr>
<td>Bruce Power is a good corporate citizen</td>
<td>13%</td>
<td>31%</td>
<td>6%</td>
<td>2%</td>
<td>48%</td>
<td>36%</td>
</tr>
</tbody>
</table>

NOTE: “Refused” (1% or less) not shown.
I am now going to read you a few statements about Bruce Power. Please tell me to what extent you agree or disagree with each one.

[asked of all respondents]

<table>
<thead>
<tr>
<th>Net Agree with Statement</th>
<th>Familiar with Bruce Power</th>
<th>Not familiar with Bruce Power</th>
</tr>
</thead>
<tbody>
<tr>
<td>I have confidence that the Bruce Nuclear Facility operates safely</td>
<td>73%</td>
<td>32%</td>
</tr>
<tr>
<td>I have confidence in the security measures at the Bruce Nuclear Facility</td>
<td>67%</td>
<td>27%</td>
</tr>
<tr>
<td>Bruce Power is responsibly managed</td>
<td>55%</td>
<td>22%</td>
</tr>
<tr>
<td>Bruce Power is a good corporate citizen</td>
<td>54%</td>
<td>21%</td>
</tr>
</tbody>
</table>
I am now going to read you a few statements about Bruce Power. Please tell me to what extent you agree or disagree with each one.

[asked of all respondents]

<table>
<thead>
<tr>
<th>Net Agree with Statement</th>
<th>Strongly Support</th>
<th>Somewhat Support</th>
<th>Oppose</th>
</tr>
</thead>
<tbody>
<tr>
<td>I have confidence that the Bruce Nuclear Facility operates safely</td>
<td>81%</td>
<td>51%</td>
<td>20%</td>
</tr>
<tr>
<td>I have confidence in the security measures at the Bruce Nuclear Facility</td>
<td>75%</td>
<td>46%</td>
<td>9%</td>
</tr>
<tr>
<td>Bruce Power is responsibly managed</td>
<td>67%</td>
<td>32%</td>
<td>13%</td>
</tr>
<tr>
<td>Bruce Power is a good corporate citizen</td>
<td>59%</td>
<td>36%</td>
<td>6%</td>
</tr>
</tbody>
</table>
The Bruce Power plant is one of a limited number of nuclear reactors in the world that produces a medical isotope called Cobalt-60 that is used in radiation to treat cancer and other diseases, like Zika, around the world.

Ontario’s Bruce nuclear power plant is a leading global supplier of Cobalt60 a radioactive isotope used to sterilize 40 per cent of the world’s single-use medical equipment.
I am going to read you a couple of statements regarding Ontario’s Bruce nuclear power plant, which is located in Kincardine. For each one, I’d like you to tell me if it leaves you more likely to support or oppose nuclear as a way of producing energy. If it makes no difference, please say so.
[asked of all respondents]

<table>
<thead>
<tr>
<th>Net “More Likely to Support”</th>
<th>Familiar with Bruce Power</th>
<th>Not familiar with Bruce Power</th>
</tr>
</thead>
<tbody>
<tr>
<td>The Bruce Power plant is one of a limited number of nuclear reactors in the world that produces a medical isotope called Cobalt-60 that is used in radiation to treat cancer and other diseases, like Zika, around the world.</td>
<td>68%</td>
<td>60%</td>
</tr>
<tr>
<td>Ontario’s Bruce nuclear power plant is a leading global supplier of Cobalt60, a radioactive isotope used to sterilize 40 per cent of the world’s single-use medical equipment.</td>
<td>60%</td>
<td>47%</td>
</tr>
</tbody>
</table>
I am going to read you a couple of statements regarding Ontario’s Bruce nuclear power plant, which is located in Kincardine. For each one, I’d like you to tell me if it leaves you more likely to support or oppose nuclear as a way of producing energy. If it makes no difference, please say so.

[asked of all respondents]

<table>
<thead>
<tr>
<th>Statement</th>
<th>Strongly Support</th>
<th>Somewhat Support</th>
<th>Oppose</th>
</tr>
</thead>
<tbody>
<tr>
<td>The Bruce Power plant is one of a limited number of nuclear reactors in the world that produces a medical isotope called Cobalt-60 that is used in radiation to treat cancer and other diseases, like Zika, around the world.</td>
<td>80%</td>
<td>69%</td>
<td>29%</td>
</tr>
<tr>
<td>Ontario’s Bruce nuclear power plant is a leading global supplier of Cobalt60, a radioactive isotope used to sterilize 40 per cent of the world’s single-use medical equipment.</td>
<td>72%</td>
<td>60%</td>
<td>13%</td>
</tr>
</tbody>
</table>
Building Understanding.

*Personalized research to connect you and your audiences.*

For more information, please contact:

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