IPAC CO2 Research Inc.

Public Awareness and Acceptance of Carbon Capture and Storage in Canada

November 2011

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Executive Summary

Introduction

In September 2011, IPAC CO2 Research Inc. contracted Insightrix Research, Inc. to conduct an online survey of Canadian residents. Overarching objectives of this research include:

- To measure the awareness and knowledge levels of Carbon Capture and Sequestration technologies,
- To understand Canadian residents' opinions on various aspects of climate change and policy, and,
- To compare the results from the survey from the European Eurobarometer study conducted in early 2011.

Responses were collected between September 27th and October 28th, 2011. Additional survey completions were sought in Saskatchewan so that differences in opinion of residents of the province could be compared with those of residents of other parts of the country. Throughout the report, a random, representative sample of Canadian residents is used for the Canadian results (total of 1548 responses) but the full dataset is used for regional comparisons. The sample distribution is as follows:

	Representative Sample		Population	Additional Completions
	Count	Percent		
British Columbia	203	13%	13%	0
Alberta	162	10%	10%	0
Saskatchewan	47	3%	3%	849
Manitoba	54	3%	4%	0
Ontario	594	38%	38%	0
Quebec	372	24%	24%	0
Atlantic Canada	116	7%	7%	0
Total	1548	100%	100%	0

Study Results

Climate Change

Canadians commonly believe that they are at fairly or very informed about the different causes of climate change (71%) the different consequences of climate change (72%) and the different ways in which we can fight climate change (67%). Just more than one in ten in each case believe that they are very well informed about each of these areas (13%, 13% and 12% respectively). Perceived knowledge levels are fairly consistent across the country, with the exception of the self-assessed knowledge level of the ways in which we can fight climate change, which is much lower in Quebec (61% believe they are fairly or very informed). The results are quite different from the Eurobarometer study, where only about one half of Europeans believe they are as informed about these three factors (49%, 49% and 46%, respectively feel they are fairly or very informed). Demographically, men, younger respondents and those who have completed university are the most likely to believe they are very well informed compared to their counterparts.

Overall, most (57%) Canadians believe that climate change is occurring partially due to human activity and partially due to natural climate variation and three in ten (31%) believe that climate change is occurring as a result of human activity. About one in ten (8%) believe that climate change is occurring due to natural climate variation and 1% that climate change is not occurring at all. The remaining 4% of Canadians are unsure. Regionally, residents of Alberta (15%) and Saskatchewan (14%) are most likely to believe that climate change is occurring due to natural climate variation, while respondents in of Ontario (6%), Quebec (6%) and Atlantic Canada (3%) are least likely to hold this belief.

As in Europe, television is also the most commonly cited source of information about climate change among Canadians (79% in Canada, 81% in Europe). Many Canadians also mention online sources (63%), newspapers (56%), radio (31%) and magazines (30%). Demographically, younger respondents most often cited the Internet as a source for information about climate change (76%), slightly higher than the proportion who mention television as a source (73%) and are much less likely to cite newspapers (51%) as a source. Respondents aged 55 or older most commonly indicated that television is a major information source about climate change for them (84%) and two thirds mention newspapers (64%) as a source. About one half (54%) indicate that the Internet is a source of information.

When asked to choose two priorities from a list of eight potential actions that they believe should be prioritized in Canada in order to fight climate change, respondents are divided, which is consistent with the results from the Eurobarometer study. While the most common selected priority is to promote cleaner cars running on electricity or low-carbon fuels (38%), the next four priorities are chosen by nearly the same proportion of respondents. A total of 29% believe that stimulating the development of industries that supply environmentally friendly technologies and services should be a priority, 28% raising the energy efficiency or industrial processes, 25% encouraging the building of energy efficient homes and the insulation of existing homes, and 24% securing a reliable energy supply for Canada. Less commonly chosen are the priorities to reduce CO2 emissions from electricity generation (15%), taxing CO2 emissions across the whole economy (11%) and

reducing greenhouse gas emissions from the agricultural sector (11%). Generally, the proportion who chose each as a priority was very different across the country; however, this said, no priority was chosen by a majority of respondents in any province, indicating that the division in beliefs is prevalent across the nation.

Carbon Dioxide

More than half (58%) of respondents are able to correctly identify CO2 as carbon dioxide. When asked which of a list of statements apply to carbon dioxide, two thirds (65%) indicated that they believe that it is unhealthy. These results mirror those of the Eurobarometer study (50% and 74%, respectively).

When asked which of a list of five sources they believe produces the most carbon dioxide globally, respondents are divided in their opinions. A total of 29% believe that power plants that burn fossil fuels produce the most carbon dioxide, while 26% chose passenger or freight transport and 23% chose factories. Less commonly chosen are farming (8%) and heating or cooling homes (3%). Respondents in the Eurobarometer study were also divided in their opinions. A higher proportion of European respondents believe that the most CO2 comes from factories (35% vs. 23%), while a lower proportion believe that passenger or freight transport (15% vs. 26%) produce the most carbon dioxide.

Many (30%) respondents believe that carbon dioxide has a very high impact on climate change, while a further five in ten (51%) believe that it has a fairly high impact, mirroring the results from the Eurobarometer study (35% and 48%, respectively) Respondents in the prairies, including Alberta (17%), Saskatchewan (19%) and Manitoba (15%), are least likely to believe that carbon dioxide has a very high impact while those in Atlantic Canada (46%) and Quebec (38%) are most likely.

CCS and Energy Sources

Overall, 14% of Canadians have heard of CCS and know what it is, while a further 30% have heard of CCS but don't know what it is. These results are much higher than in the Eurobarometer results which found that 10% have heard of CCS and know what it is while a further 18% have heard of it but aren't sure what it is. Provincially, respondents from Saskatchewan (40%) and Alberta (27%) are the most likely to have heard of CCS and know what it is, while respondents from Atlantic Canada (10%) and Ontario (9%) are least likely.

Respondents were asked whether or not they have heard of each of a list of ten different energy sources. Nearly all respondents have heard of solar energy (93%) and nuclear energy (87%), and a majority have heard of geothermal energy (65%), biogas/biodiesel (58%) and ocean energy (51%). Generally, Canadian respondents are more likely than European respondents to have heard of many of the different energy sources especially solar energy (93% vs. 58%), nuclear energy (87% vs. 51%), geothermal energy (65% vs. 47%) and hydrogen energy (50% vs. 32%). When asked whether they are in favour of the different energy sources, respondents commonly indicated that they favour solar (95%), wind (95%) and hydroelectric (90%) energy. Coal is the least favoured (19%) energy source. Canadians tend to be slightly less likely to favour natural gas (71% vs. 80%), biomass energy (45% vs. 60%) and coal (18% vs. 35%) compared to Europeans.

Respondents are in disagreement with how effective they believe that CCS could be in fighting climate change. Overall, 42% believe it could be fairly (35%) or very (7%) effective, while 34% believe it would be not very (26%)

or not at all effective (8%). A total of one quarter (24%) are unsure. Despite differences in knowledge levels about CCS, about the same proportion (39%) of European respondents believe that CCS would be fairly (33%) or very (6%) effective in fighting climate change. In line with this finding, respondents are also divided on whether they believe that they would (32%) or would not (26%) benefit if carbon capture and storage technology was used in their province. Respondents in the Eurobarometer study were also divided in this area, with one quarter (23%) believing that they would benefit while four in ten (38%) do not believe that they would benefit. Improvement in air quality (62%) is by far the most common reason that respondents believe that CCS would benefit them, while the most common mention that CCS would not benefit them is potential adverse effects on the environment (36%). Three in ten (30%) are aware of other chemicals that are injected or stored in the ground and the most commonly mentioned is nuclear or radioactive waste (25%).

When directly asked how worried they would be if a CO2 storage site between 1.5 and 3 kilometers below the ground was located within 5 kilometers of their home, 28% responded that they would be very worried and 35% indicated that they would be fairly worried. A minority would be not very worried (20%) or not at all worried (5%). Respondents in Ontario (29%) and Quebec (36%) are most likely to be very worried while those in Saskatchewan (19%), Manitoba (17%) and British Columbia (22%) are least likely. Looking at the results by demographics revealed several distinct differences. Women (33% vs. 23% of men) and those between the ages of 35 and 54 (32% vs. 24% of those between the ages of 18 and 34) are significantly more likely to indicate that they would be very worried at the prospect at having a CO2 storage facility near them. Respondents who have children under 18 in the household are more likely to be fairly worried (41% vs. 33%) but are not more likely to be very worried (30% vs. 28%) than those who do not have children under 18 in their household. Results are quite close to the Eurobarometer results, where 24% indicated that they would be very worried and 37% that they would be fairly worried. Most commonly, the reasons for concern are the possible negative effects on the environment, groundwater, wildlife and health (52%), followed by risk of leaks (33%), the two most common concerns in the Eurobarometer study.

If an underground CO2 storage site were to be proposed 5 kilometers from their home, respondents generally agree that they would like to be directly consulted (83%) and participate in the decision-making process, that they would like non-governmental organizations to be consulted and to participate in the decision-making process (83%) and that they would like the government to be consulted and to participate in the decision-making process (80%).

Respondents were asked to indicate which of three different storage options they prefer, and approximately the same percentage of respondents favoured each: 20% prefer that it be stored underground and onshore, but near the power plant or industrial plant which generates CO2, 16% prefer it be stored underground and onshore, but only where human population is very low and 15% prefer it be stored offshore under the seabed. These results are similar to the Eurobarometer results, where respondents were also divided.

The most trusted source of information about CCS is from scientists and researchers (71%), which was rated by a much higher percentage of respondents than any other source. Non-governmental sources are trusted by 46% and 21% trust information from journalists about CCS.

Respondents were asked their level of agreement on each of eight different statements regarding various aspects of CCS and power generation. A large majority (80%) of respondents agree that public authorities should be able to monitor carbon capture and storage operations. Many also agree that harmonized and consistent methodologies should be developed within Canada to manage the capture and storage of CO2 (67%) and that capturing and storing CO2 should be compulsory when building a new natural gas (57%) or coal-fired (60%) power plant. Agreement is also fairly common that the storage of CO2 will help to combat climate change (49%). However, respondents were also in disagreement that CCS will ensure lower and more stable energy prices (29%) and many (56%) also believe that the storage of CO2 represents a safety risk in the future. About one half (51%) of respondents believe that fossil fuels will still be used after the year 2050 for electricity production in Canada.

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Introduction and Methodology

In September 2011, IPAC CO2 Research Inc. contracted Insightrix Research, Inc. to conduct an online survey of Canadian residents. Overarching objectives of this research include:

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- To understand Canadian residents' opinions on various aspects of climate change and policy, and,
- To compare the results of the Canadian survey with the European Eurobarometer study conducted in early 2011.

METHODOLOGY

Development of Survey Instrument

The questionnaire used in the study was based on the questionnaire used in the Eurobarometer study. Insightrix, in consultation with IPAC CO2, developed the survey instrument. Insightrix worked closely with IPAC CO2 throughout the instrument design phase to finalize the questionnaire by ensuring proper wording and flow of survey questions and suggesting survey improvements for data collection. The survey was programmed into an online survey system.

Quantitative Data Collection

To conduct the online study, Insightrix utilized an online survey panel of Canadian residents who have agreed to participate in ongoing research. Panel members are compensated with points which can be accumulated and redeemed for cash. The survey was available in both French and English so that respondents could choose to participate in either official language.

Invitations were sent to panel members requesting their participation in the study. Quotas were set by demographic variables including age, gender and region to ensure the sample of respondents who completed the survey closely matched the general population. Results were monitored by education to ensure that respondents with varying levels of education participated in the research. The following table shows the characteristics of the survey respondents for these relevant demographics:

		Count	Percent	Population
Age	18 to 34	397	26%	28%
	35 to 54	623	40%	37%
	55+	528	34%	36%
Gender	Male	742	48%	49%
	Female	806	52%	51%
Education	Some PSE, high school or less	744	48%	57%
	Completed technical or college	205	13%	26%
	Completed university	599	39%	17%
Total		1548	100 %	100%

Additional survey completions were sought in the province of Saskatchewan to improve the accuracy of the results when comparing this province to the remainder of the country. The following table shows the sample breakdown by region:

	Representative Sample		Population	Booster Sample
	Count	Percent		
British Columbia	203	13%	13%	0
Alberta	162	10%	10%	0
Saskatchewan	47	3%	3%	849
Manitoba	54	3%	4%	0
Ontario	594	38%	38%	0
Quebec	372	24%	24%	0
Atlantic Canada	116	7%	7%	0
Total	1548	100%	100%	0

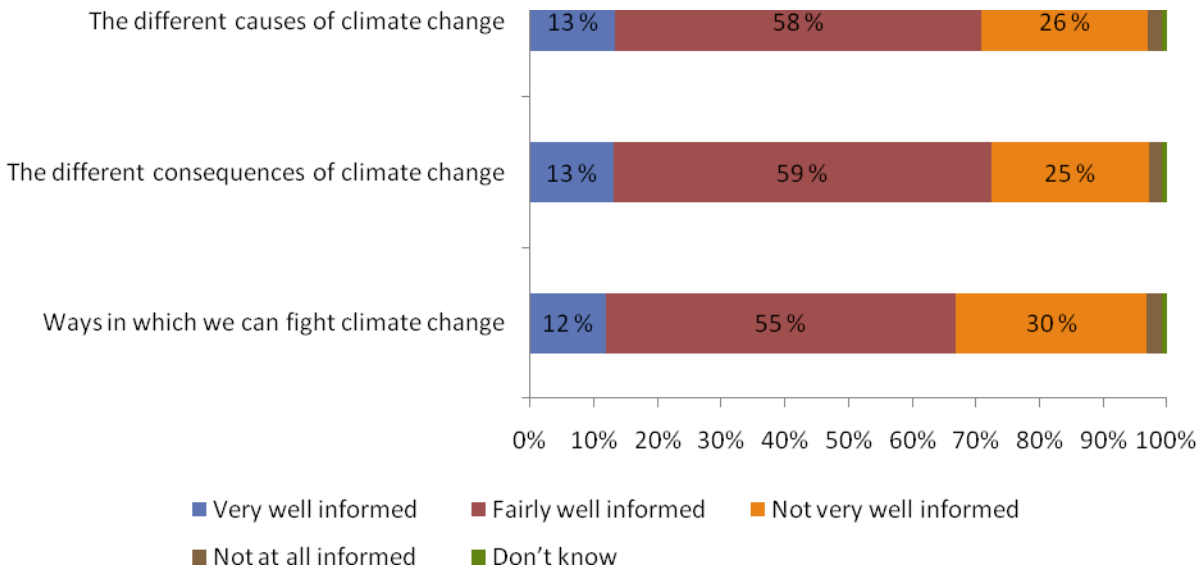
REPORTING NOTES

Each question on the survey was analyzed by the appropriate demographic variables including age, gender, education, income, beliefs about climate change and voting. Due to the volume of statistically significant results, not all significant differences have been included in the report only those relevant to the research objectives are presented. A standard alpha value of less than 0.05 is considered statistically significant. This means that there is less than a 5% chance that the results would have occurred by chance. Regional comparisons have been included for each question, and all results have been compared to the Eurobarometer study.

Study Results

Perceived Information

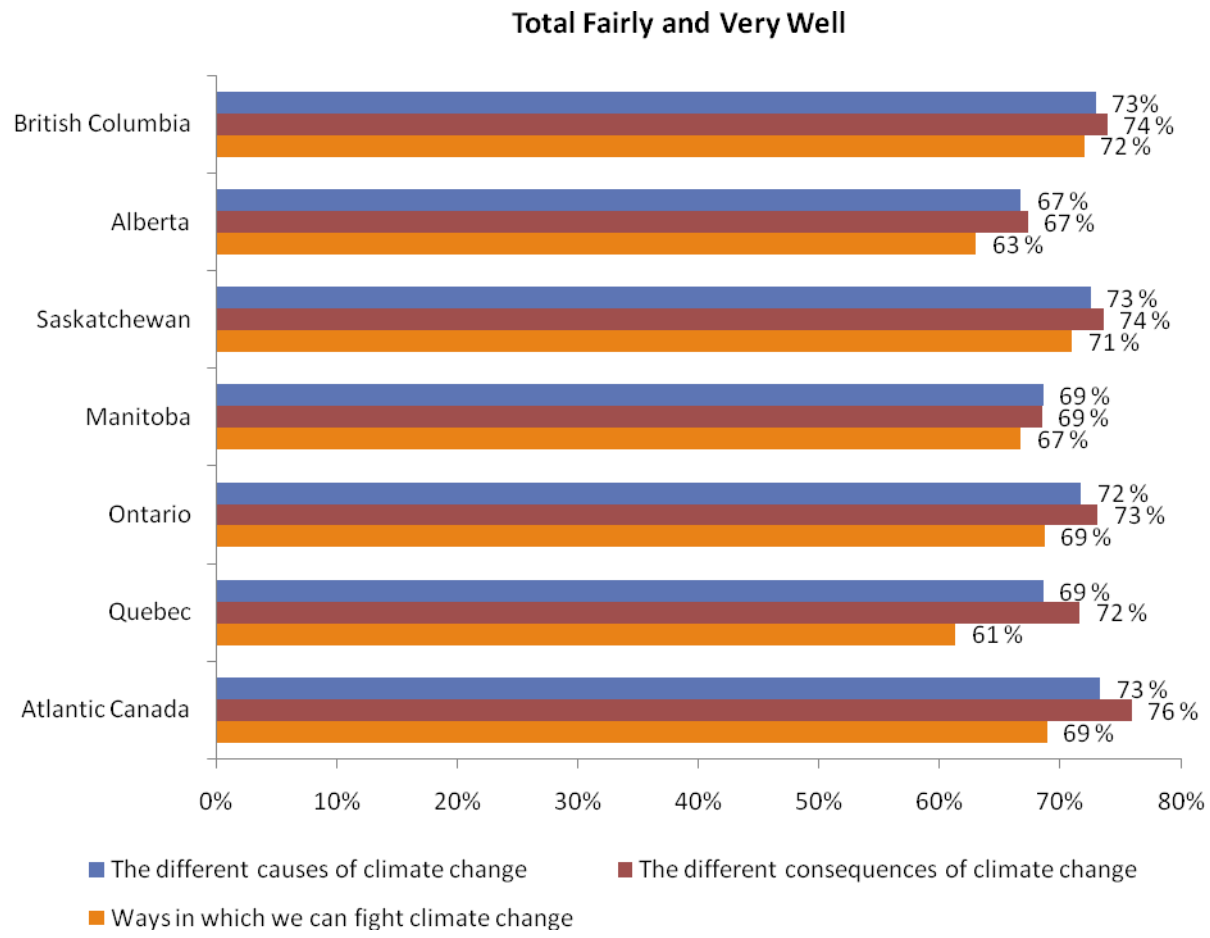
A majority of Canadians feel that they are at least fairly well informed about the different causes of climate change (71%), the different consequences of climate change (72%) and the different ways in which we can fight climate change (67%).



Q4 Personally, do you think that you are well informed or not about...? (Base: n=1548)

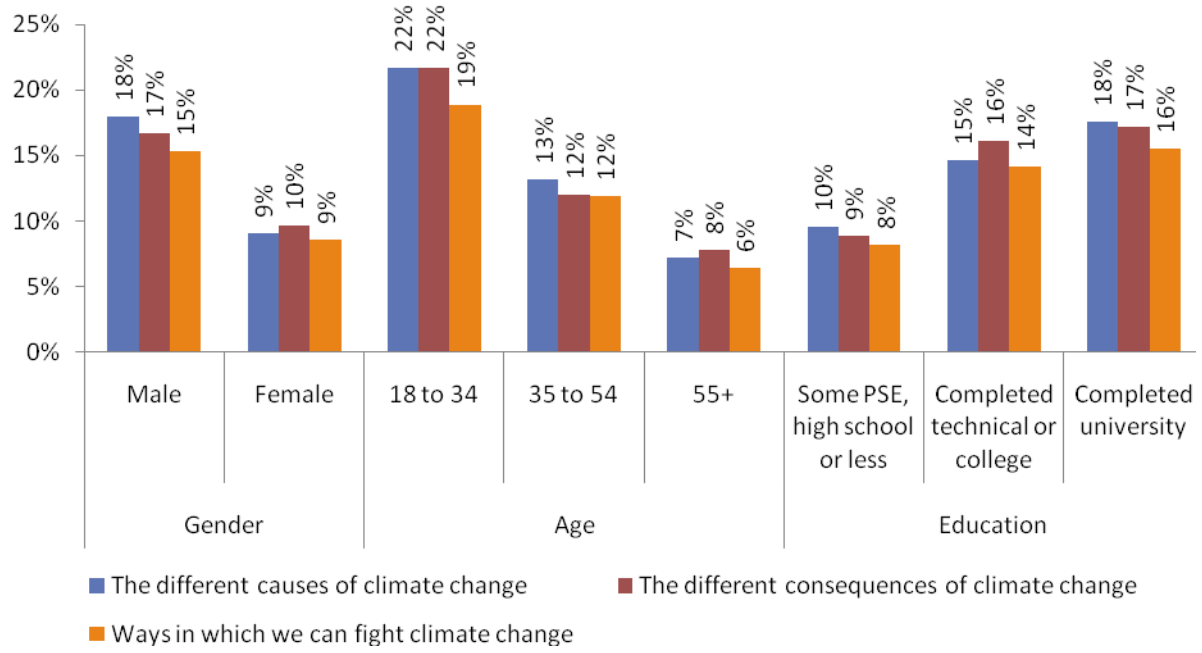
Perceived Information – Regional Analysis

Perceived information levels are similar across the provinces. Quebec respondents (61%) tend to rate their knowledge levels for the way in which we can fight climate change notably lower than respondents in Saskatchewan (71%).



Sources of Information – Demographic Analysis

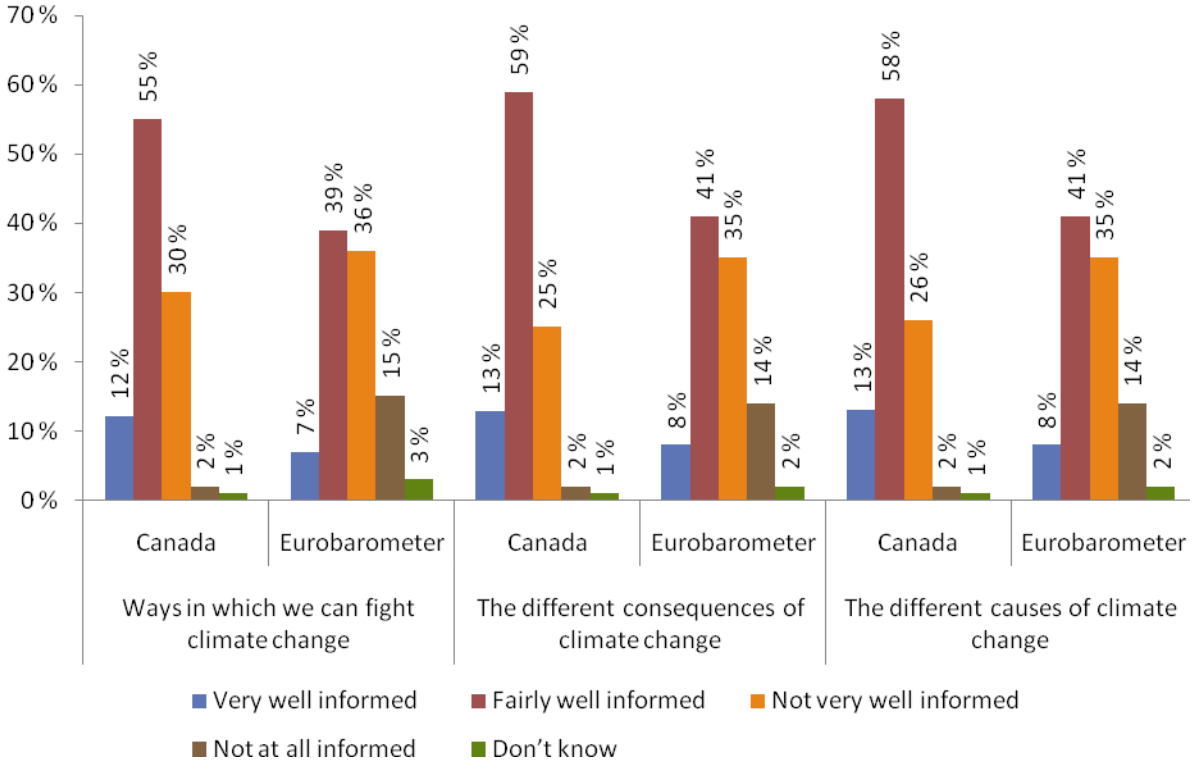
Many differences exist by demographics in terms of how well informed respondents believe they are in the three listed areas. Men are nearly twice as likely as women to believe that they are very well informed on these topics. By age, those between the ages of 18 and 34 are also more likely to consider themselves very well informed while those aged 55 or older are least likely to believe this. The likelihood of believing one is very well informed in these three areas increases with educational attainment. Those who have completed university are most likely to believe that they are very well informed on these topics.



% who believe they are very well informed	Gender		Age			Education		
	Male	Female	18 to 34	35 to 54	55+	Some PSE, high school or less	Completed technical or college	Completed university
The different causes of climate change	18%▲	9%▼	22%▲	13%▲	7%▼	10%▼	15%	18%▲
The different consequences of climate change	17%▲	10%▼	22%▲	12%▲	8%▼	9%▼	16%▲	17%▲
Ways in which we can fight climate change	15%▲	9%▼	19%▲	12%▲	6%▼	8%▼	14%▲	16%▲

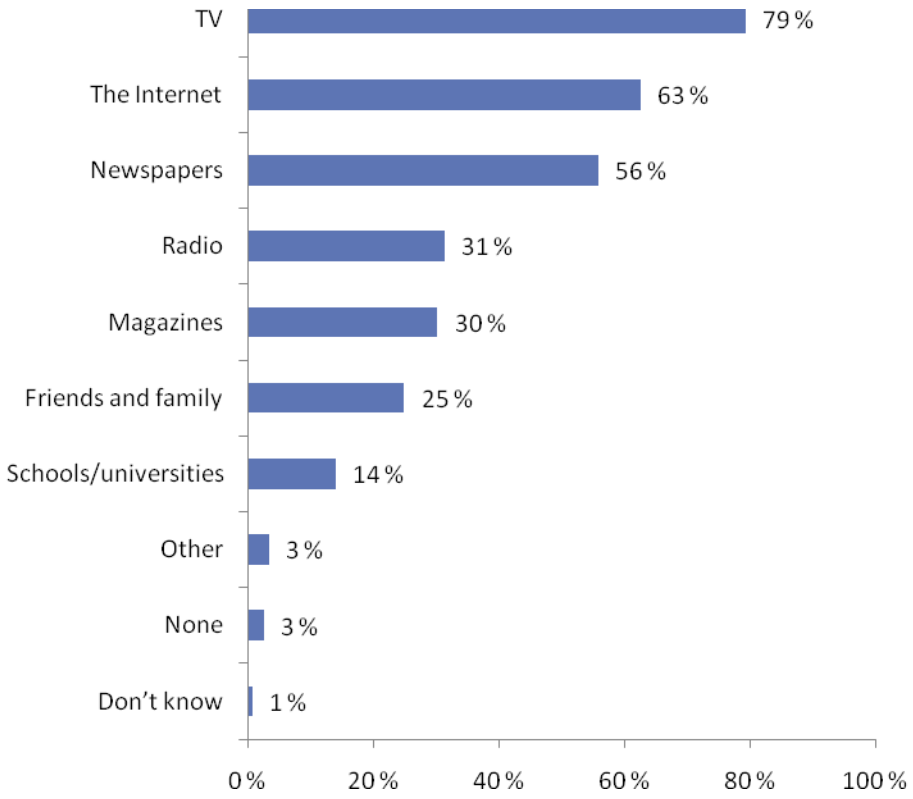
Perceived Information - Comparison with European Results

Canadians tend to believe that they are much better informed about the causes (71% vs. 49%), the consequences (72% vs. 49%) and ways in which we can fight climate change (67% vs. 46%) compared to respondents in Europe.



Sources of Information on Climate Change

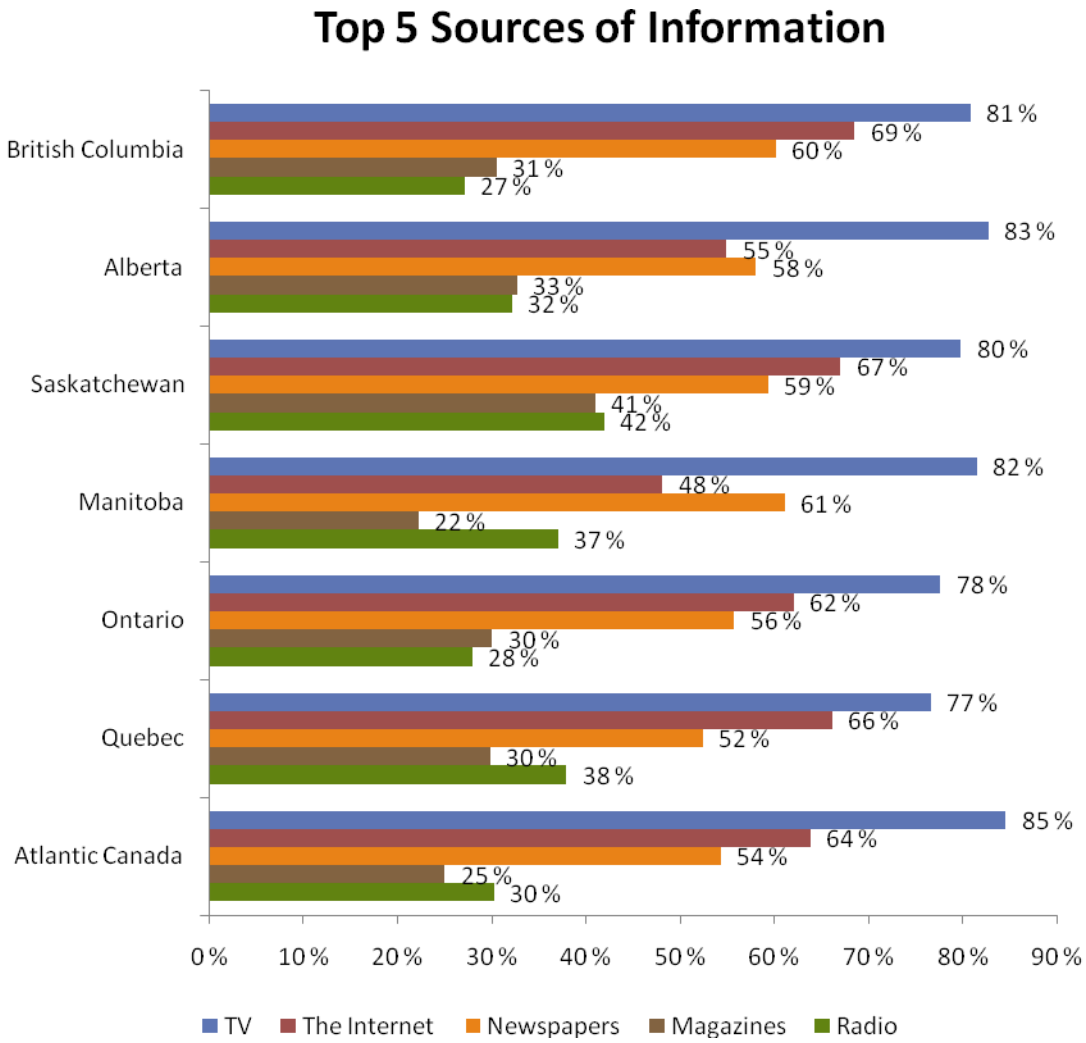
Among Canadians, television is the most commonly mentioned source (70%) for information about climate change. A majority also mentioned the Internet (63%) and newspapers (56%) as an information source. Radio (31%), magazines (30%), friends and family (25%) and schools/universities (14%) are mentioned by a minority.



Q5. From which of the following information sources do you usually get information on climate change? (Base: n=1548)

Sources of Information – Regional Analysis

Generally the top used sources of information are consistent across the provinces. Notably, respondents in Eastern Canada are less likely to mention magazines (25% in Atlantic Canada, 30% in Quebec and 30% in Ontario) compared with Saskatchewan (41%) respondents. Radio is also much more commonly mentioned by respondents in Quebec (38%) and Saskatchewan (42%) than those in British Columbia (27%) and Ontario (28%).



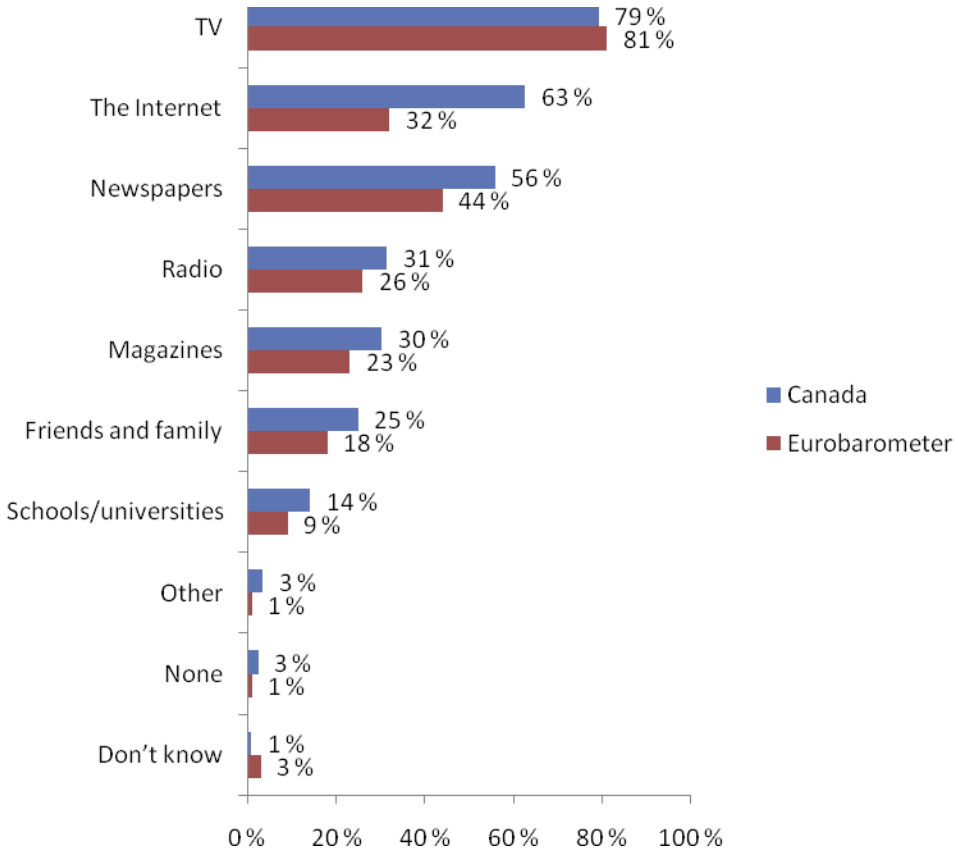
Perceived Information – Analysis by Demographics

Information sources about climate change varied considerably by age. Older respondents were more likely to consider television as a main information source (84% of those aged 55+ compared to 79% of those between the ages of 35 and 54 and 73% of those between the ages of 18 and 34).

	18 to 34	35 to 54	55+
TV	73%▼	79%▼	84%▲
The Internet	76%▲	62%▼	54%▼
Newspapers	51%▼	51%▼	64%▲
Radio	33%	30%	32%
Magazines	29%	30%	31%
Friends and family	35%▲	23%▼	19%▼
Schools/universities	32%▲	10%▼	5%▼
Other	4%	3%	3%
None	4%▲	2%	1%▼
Don't know	1%	1%	1%

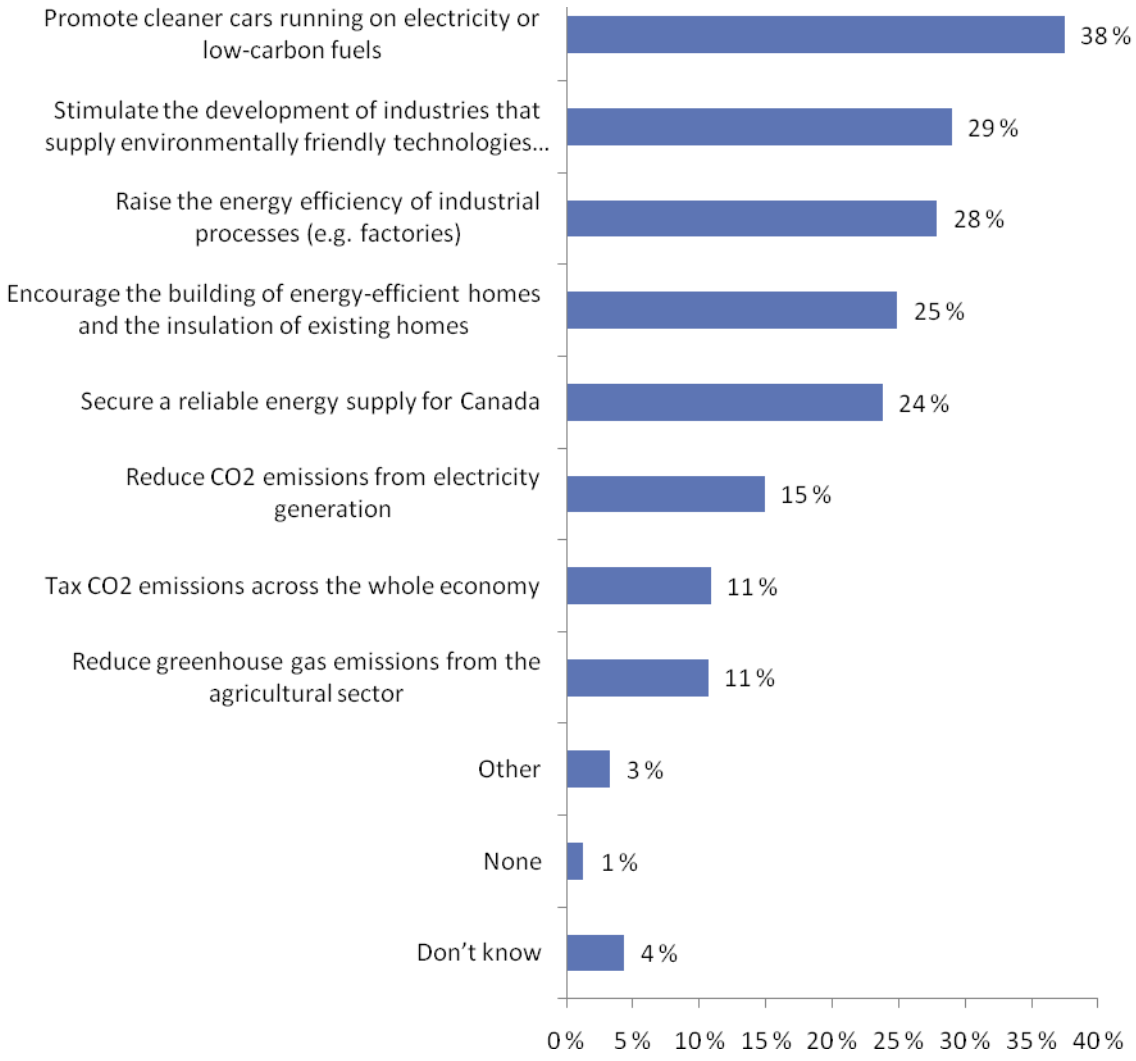
Sources of Information – Comparison with European Results

Among both European and Canadian respondents, television (79% in Canada, 81% in Europe) is the top-mentioned information source about climate change. In the Canadian study, about twice the proportion (63% vs. 32%) cited the Internet as a source of information about climate change, an inconsistency that may be due to the difference in methodology.



Priorities to Fight Climate Change

Respondents were asked to indicate a maximum of two from a list of eight priorities they believe should be prioritized in Canada in order to fight climate change. The results show no strong preference among Canadians for any of the listed priorities. About four in ten (38%) chose promoting cleaner cars running on low-carbon fuels, while between two and three in ten chose stimulating the development of industries that supply environmentally friendly technologies and services (29%), raising the energy efficiency or industrial processes (28%), encouraging the building of energy efficient homes and the insulation of existing homes (25%), and, finally, securing a reliable energy supply for Canada (24%). Relatively fewer respondents supported the reduction of CO2 emissions from electricity generation (15%), taxing CO2 emissions across the whole economy (11%) and reducing greenhouse gas emissions from the agricultural sector (11%).



6. In order to fight climate change, which of the following aspects should be prioritized in Canada? Respondents were able to select a maximum of two answers. (Base: n=1548) Totals exceed 100% because multiple responses are possible.

Priorities to Fight Climate Change – Regional Analysis

Many differences by region were found in terms of the different priorities to fight climate change. However, even so, respondents within each province are divided on what they believe should be a priority to fight climate change. In all provinces, less than one half of residents prioritized any of the suggestions.

In British Columbia, the promotion of cleaner cars running on electricity or low-carbon fuels (42%) was the top priority, while securing a reliable energy supply for Canada (30%) was chosen by the next highest proportion of respondents.

Respondents in Alberta are least likely (27%) to indicate that promoting cleaner cars running on electricity or low-carbon fuels should be a priority, and are among the most divided of all the provinces, with the difference between the top four priorities within five percentage points.

Among Saskatchewan and Manitoba residents, raising the energy efficiency of industrial processes is the top priority. Residents of both provinces are also the most likely to have chosen encouraging the building of energy efficient homes and the insulation of existing homes as a priority.

In Ontario, the most frequently chosen priority is to promote cleaner cars running on electricity or low-carbon fuels, and the next four priorities were quite close to each other. A higher proportion of Ontario residents prioritized securing a reliable energy supply for Canada (27%) and encouraging the building of energy efficient homes and the insulation of existing homes (27%) compared to the average, while a lower proportion (26%) than average are in favour of raising the energy efficiency of industrial processes.

The top priority among Quebec residents is the promotion of cleaner cars running on electricity or low-carbon fuels (43%). Quebec residents are much more likely to prioritize taxing CO2 emissions across the whole economy (19%), and reducing greenhouse gas emissions from the agricultural sector (14%), although even so, less than one in five prioritize these items in their top two choices. Quebec residents are also among the least likely to prioritize raising the energy efficiency of industrial processes (26%), encouraging the building of energy efficient homes and the insulation of existing homes (19%) and securing a reliable energy supply for Canada (16%).

Residents of Atlantic Canada are most likely to prioritize securing a reliable energy supply for Canada (30%), putting this area in the top three priorities in this region. Atlantic Canadians are also more likely to prioritize the reduction of greenhouse gas emissions from the agricultural sector (11%), although the proportion who do so are a fairly small minority.

The following table summarizes the differences between provinces in terms of their priorities.

	British Columbia	Alberta	Saskatchewan	Manitoba	Ontario	Quebec	Atlantic Canada
Raise the energy efficiency of industrial processes (e.g. factories)	26 %	31 %	36 %▲	43 %	26 %▼	26 %▼	28 %
Stimulate the development of industries that supply environmentally friendly technologies and services	28 %	32 %	30 %	24 %	29 %	29 %	24 %
Encourage the building of energy-efficient homes and the insulation of existing homes	21 %	26 %	30 %▲	39 %▲	27 %▲	19 %▼	30 %
Promote cleaner cars running on electricity or low-carbon fuels	42 %▲	27 %▼	29 %▼	41 %	36 %	43 %▲	35 %
Secure a reliable energy supply for Canada	30 %▲	20 %	21 %	17 %	27 %▲	16 %▼	30 %▲
Reduce CO2 emissions from electricity generation	14 %	14 %	15 %	13 %	15 %	14 %	18 %
Tax CO2 emissions across the whole economy	8 %▼	9 %	10 %▼	6 %	8 %▼	19 %▲	13 %
Reduce greenhouse gas emissions from the agricultural sector	9 %	11 %▲	4 %▼	2 %	11 %▲	14 %▲	11 %▲
Other	3 %	4 %	8 %▲	0 %	3 %▼	4 %	2 %
None	1 %	2 %	1 %	2 %	1 %	2 %	0 %
Don't know	5 %	7 %	4 %	2 %	4 %	4 %	3 %

*Totals exceed 100% because multiple responses are possible.
Symbols "▲" and "▼" denote a statistically significant difference between columns at the 95% level.

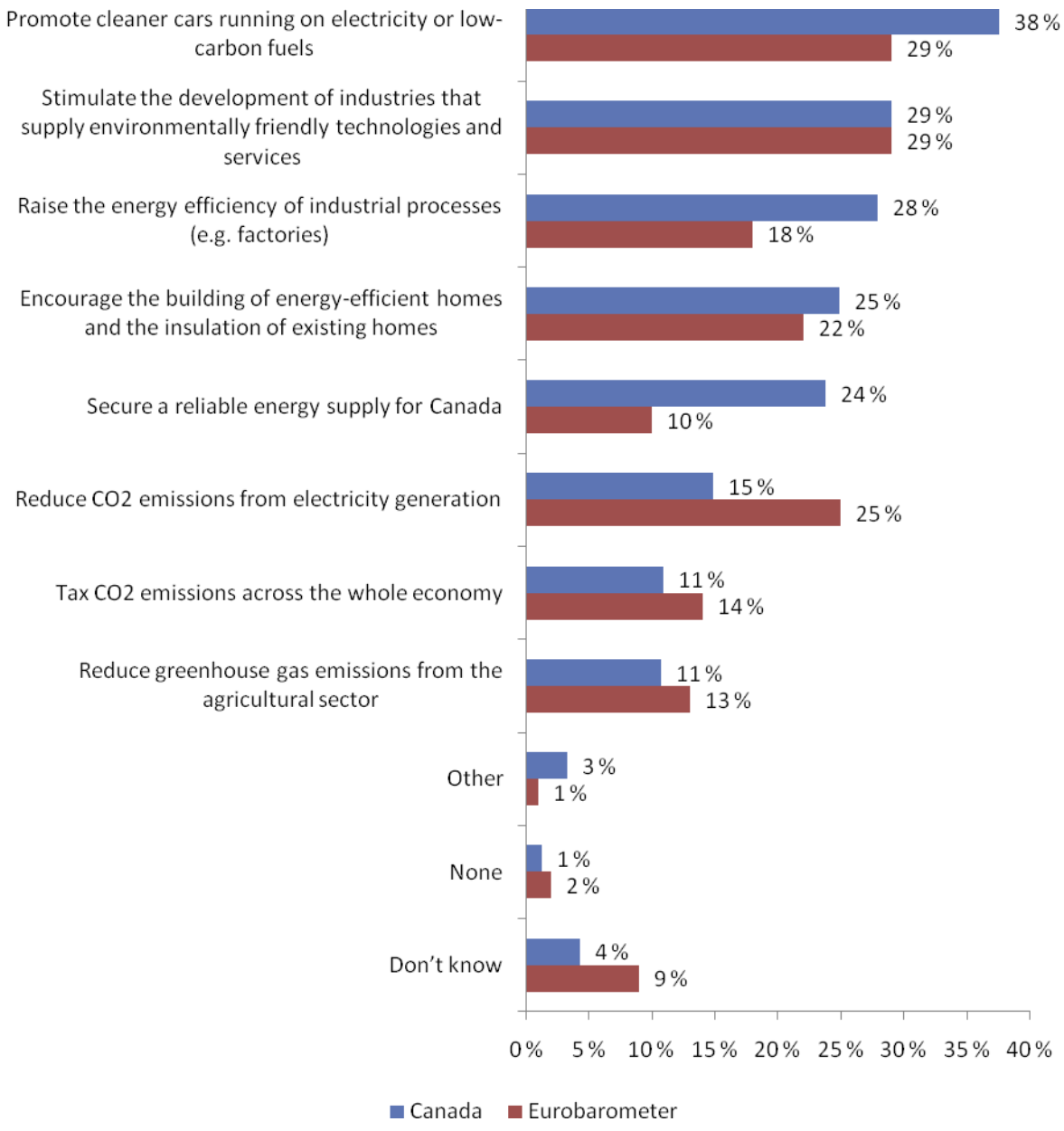
Priorities to Fight Climate Change – Demographic Analysis

Although both genders are divided on the priorities they would choose to fight climate change, women are more likely to prioritize stimulating the development of industries that supply environmentally friendly technologies and services (32% vs. 26%) and raising the energy efficiency of industrial processes (30% vs. 25%). On the other hand, men are most likely to be prioritize reducing CO2 emissions from electricity generation (17% vs. 13%) or taxing CO2 emissions across the whole economy (14% vs. 8%).

	Male	Female
Promote cleaner cars running on electricity or low-carbon fuels	38%	37%
Stimulate the development of industries that supply environmentally friendly technologies and services	26%▼	32%▲
Raise the energy efficiency of industrial processes (e.g. factories)	25%▼	30%▲
Encourage the building of energy-efficient homes and the insulation of existing homes	24%	26%
Secure a reliable energy supply for Canada	23%	25%
Reduce CO2 emissions from electricity generation	17%▲	13%▼
Reduce greenhouse gas emissions from the agricultural sector	11%	10%
Tax CO2 emissions across the whole economy	14%▲	8%▼
Other:	5%▲	2%▼
None	2%▲	1%▼
Don't know	3%▼	6%▲

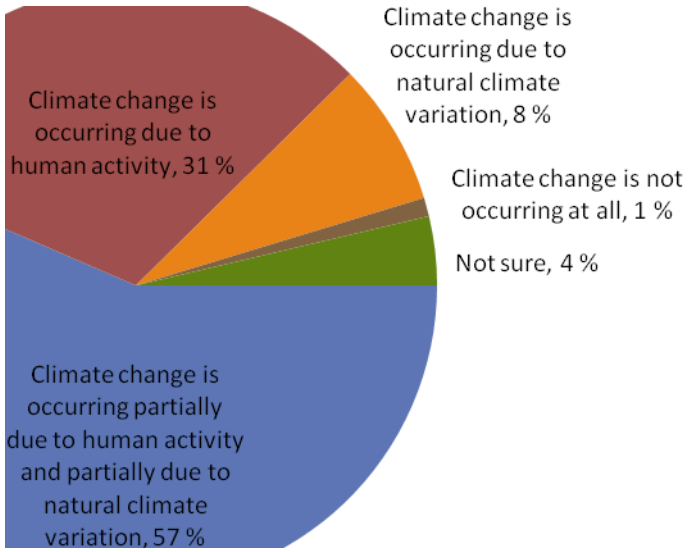
Priorities to Fight Climate Change – Comparison to European Results

Respondents in the European study were also divided with respect to their priorities for fighting climate change and many differences in priorities were found between Canadian and European respondents. In the Eurobarometer study, about one quarter (25%) chose the reduction of CO2 emissions from electricity generation as a priority, a much higher proportion than among Canadian respondents (15%). Canadian respondents, by contrast, are much more likely to consider the promotion of cleaner cars running on electricity or low-carbon fuels (38% vs. 29%), raising the efficiency of industrial processes (28% vs. 18%) and securing a reliable energy source for the county (24% vs. 10%) a priority.


Promote cleaner cars running on electricity or low-carbon fuels
38 %
29 %
Stimulate the development of industries that supply environmentally friendly technologies and services
29 %
29 %
Raise the energy efficiency of industrial processes (e.g. factories)
28 %
18 %
Encourage the building of energy-efficient homes and the insulation of existing homes
25 %
22 %
Secure a reliable energy supply for Canada
24 %
10 %
Reduce CO2 emissions from electricity generation
15 %
25 %
Tax CO2 emissions across the whole economy
11 %
14 %
Reduce greenhouse gas emissions from the agricultural sector
11 %
13 %
Other
3 %
1 %
None
1 %
2 %
Don't know
4 %
9 %
0 % 5 % 10 % 15 % 20 % 25 % 30 % 35 % 40 %
Canada
Eurobarometer

Perception of Climate Change

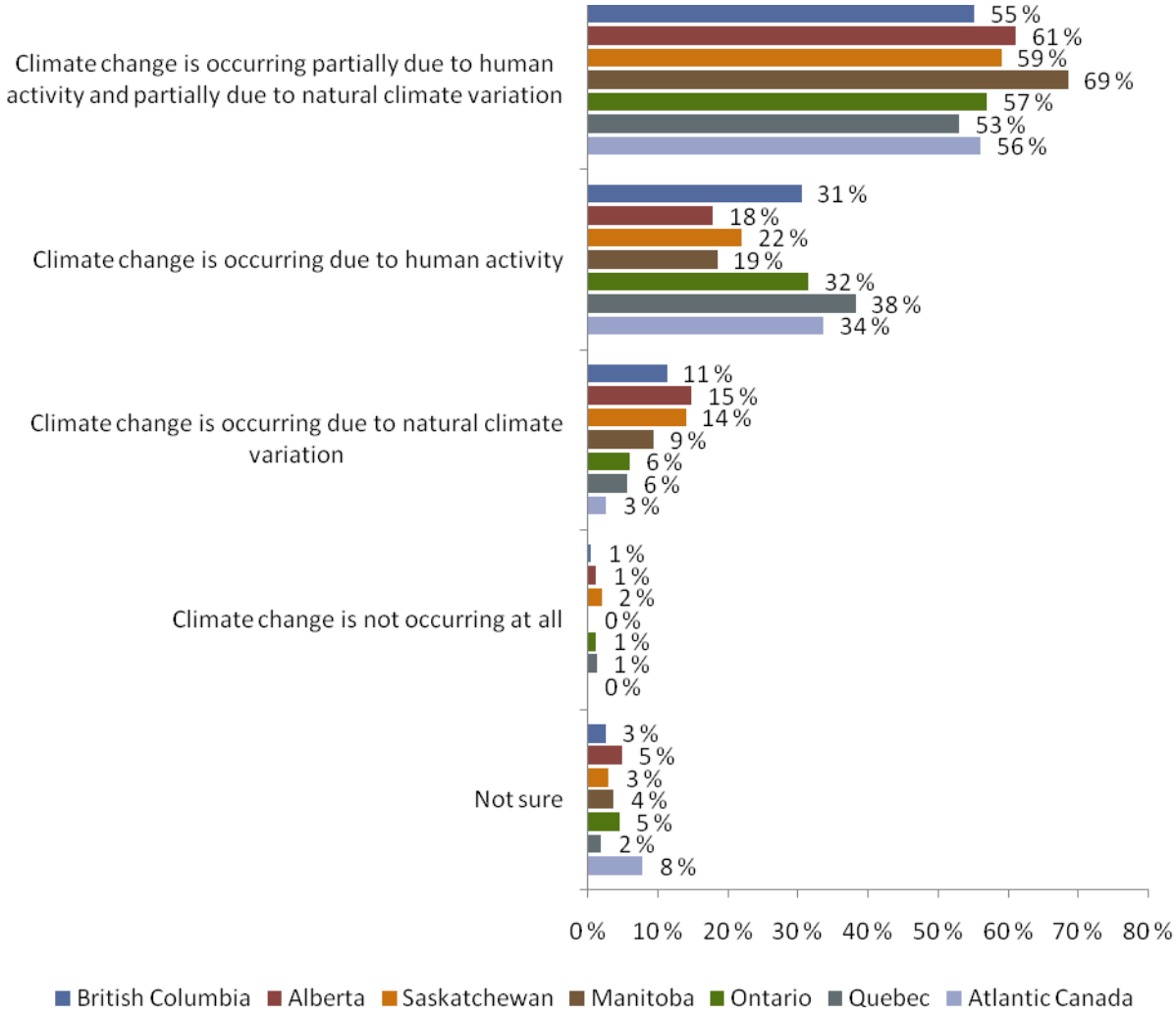
In Canada, about three in ten (31%) believe that climate change is occurring due to human activity and slightly more than one half (57%) believe that climate change is occurring partially due to human activity and partially due to natural climate variation. A minority believe that climate change is occurring due to natural climate variation (8%) and very few (1%) believe that climate change is not occurring at all.



Q7. Where do you stand on the issue of climate change? (Base: n=1548)

Perception of Climate Change – Regional Analysis

Residents of Alberta (15%) and Saskatchewan (14%) are among the most likely to believe that climate change is occurring due to natural climate variation while residents of Ontario (6%), Quebec (6%) and Atlantic Canada (3%) are least likely. Additionally, residents of Ontario (32%) and Quebec (38%) are more likely to believe that climate change is occurring due to human activity compared to residents of Alberta (18%) and Saskatchewan (22%).



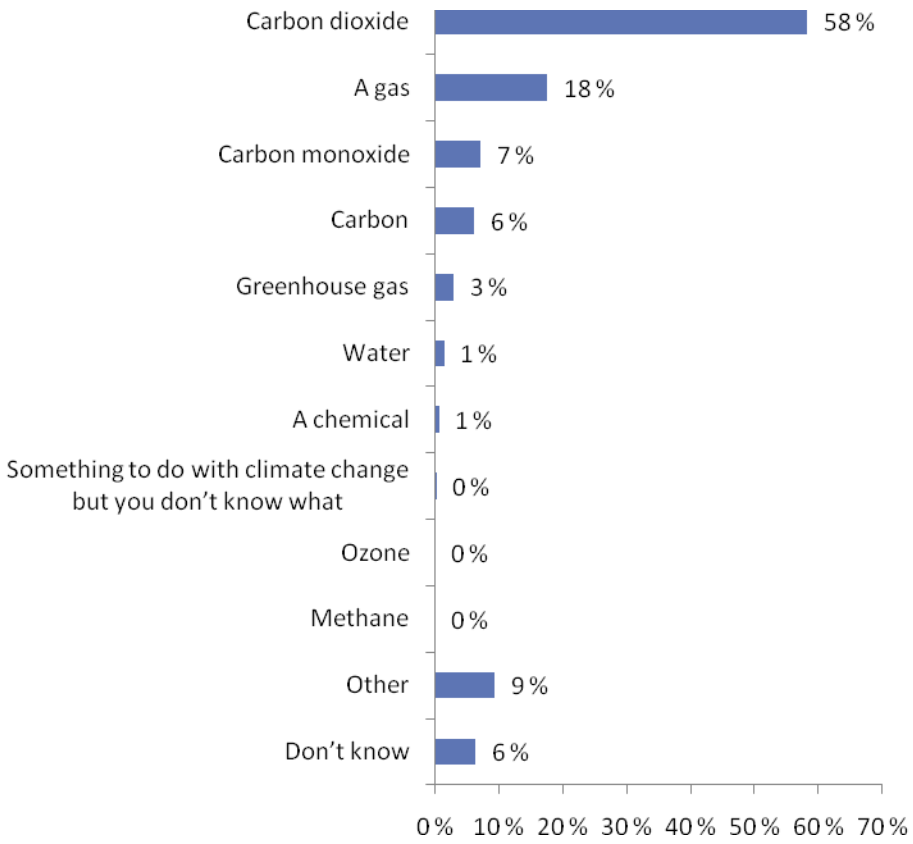
Perception of Climate Change –Analysis by Demographics

Generally, respondents in those demographics that believe that they are well informed about climate change are also more likely to believe that climate change is occurring due to human activity. Men (34%), those between the ages of 18 and 34 (36%) and those who have completed university (36%) are most likely to believe that climate change is occurring due to human activity.

	Gender		Age			Education		
	Male	Female	18 to 34	35 to 54	55+	Some PSE, high school or less	Completed technical or college	Completed university
Climate change is not occurring at all	1%▲	0%	2%	1%	0%	1%	1%	1%
Climate change is occurring due to natural climate variation	9%	6%	6%▼	7%	10%▲	9%	7%	6%
Climate change is occurring partially due to human activity and partially due to natural climate variation	52%▼	60%▲	53%▼	53%▼	63%▲	56%	63%	55%
Climate change is occurring due to human activity	34%▲	28%▼	36%▲	35%▲	23%▼	28%▼	26%▼	36%▲
Not sure	3%▼	5%▲	5%	4%	3%	6%	2%	2%

What is CO2

Most (58%) respondents are able to correctly identify CO2 as carbon dioxide. One in six (18%) indicate that it is a gas and 7% think it is carbon monoxide.



Q8. What do you think CO_2 is? (Base: n=1548)

What is CO2 – Regional Analysis

Regionally, Saskatchewan residents are most likely to correctly identify CO2 as carbon dioxide (74%).

	British Columbia	Alberta	Saskatchewan	Manitoba	Ontario	Quebec	Atlantic Canada
Carbon dioxide	64 %	61 %▼	74 %▲	54 %▼	57 %▼	53 %▼	60 %▼
A gas	16 %	18 %	21 %	22 %	16 %	20 %	18 %
Carbon monoxide	7 %	6 %	5 %	11 %	9 %	6 %	7 %
Carbon	4 %	6 %	4 %	7 %	7 %	7 %	5 %
Greenhouse gas	2 %	4 %	3 %	0 %	2 %	6 %	3 %
A chemical	2 %	1 %	1 %	0 %	0 %	1 %	2 %
Water	0 %	3 %	1 %	6 %	1 %	1 %	3 %
Other	8 %	7 %	5 %	13 %	10 %	11 %	7 %
Don't know	6 %	6 %	3 %	2 %	8 %	5 %	7 %

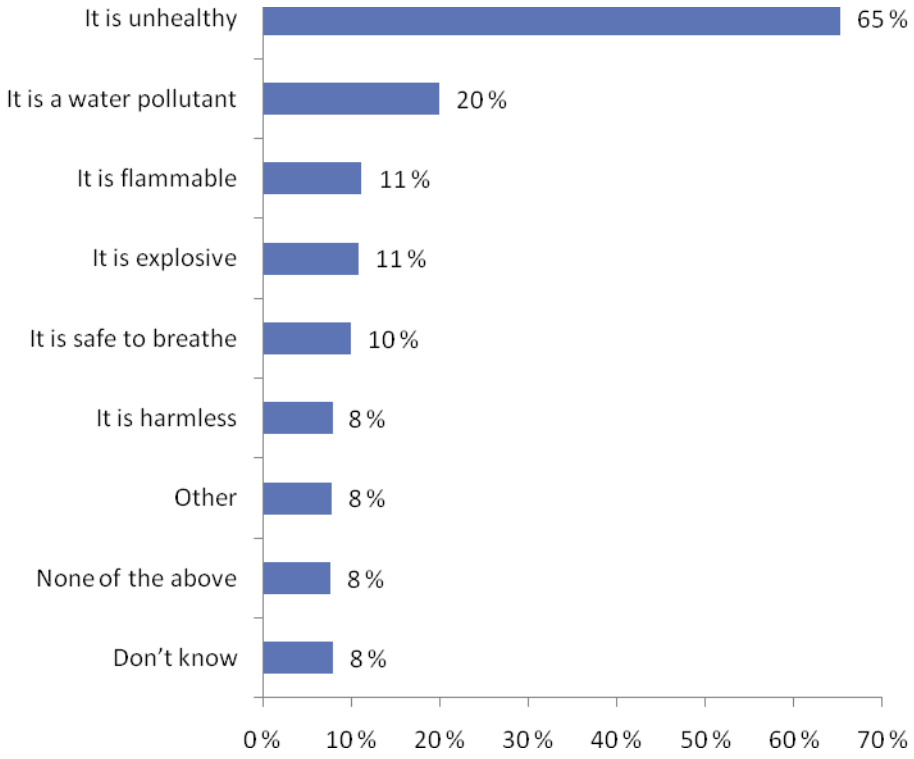
What is CO2 – Comparison with Eurobarometer Results

Results of the Canadian study generally mirror those from the Eurobarometer study. Respondents in both studies were mostly likely to identify CO2 as carbon dioxide.

	Canada	Eurobarometer
Carbon dioxide	58 %	50 %
A gas	18 %	10 %
Carbon monoxide	7 %	11 %
Carbon	6 %	3 %
Greenhouse gas	3 %	5 %
A chemical	1 %	1 %
Water	1 %	-
Ozone	0 %	-
Something to do with climate change but you don't know what	0 %	4 %
Other	9 %	3 %
Don't know	6 %	13 %

Carbon Dioxide (CO_2) Perception

Most (65%) respondents believe that CO2 is unhealthy and 20% believe that it is a water pollutant.



Q9. Which of the following statements do you think apply to carbon dioxide (CO2)? (Base: n=1548)

Carbon Dioxide (CO_2) Perception – Regional Analysis

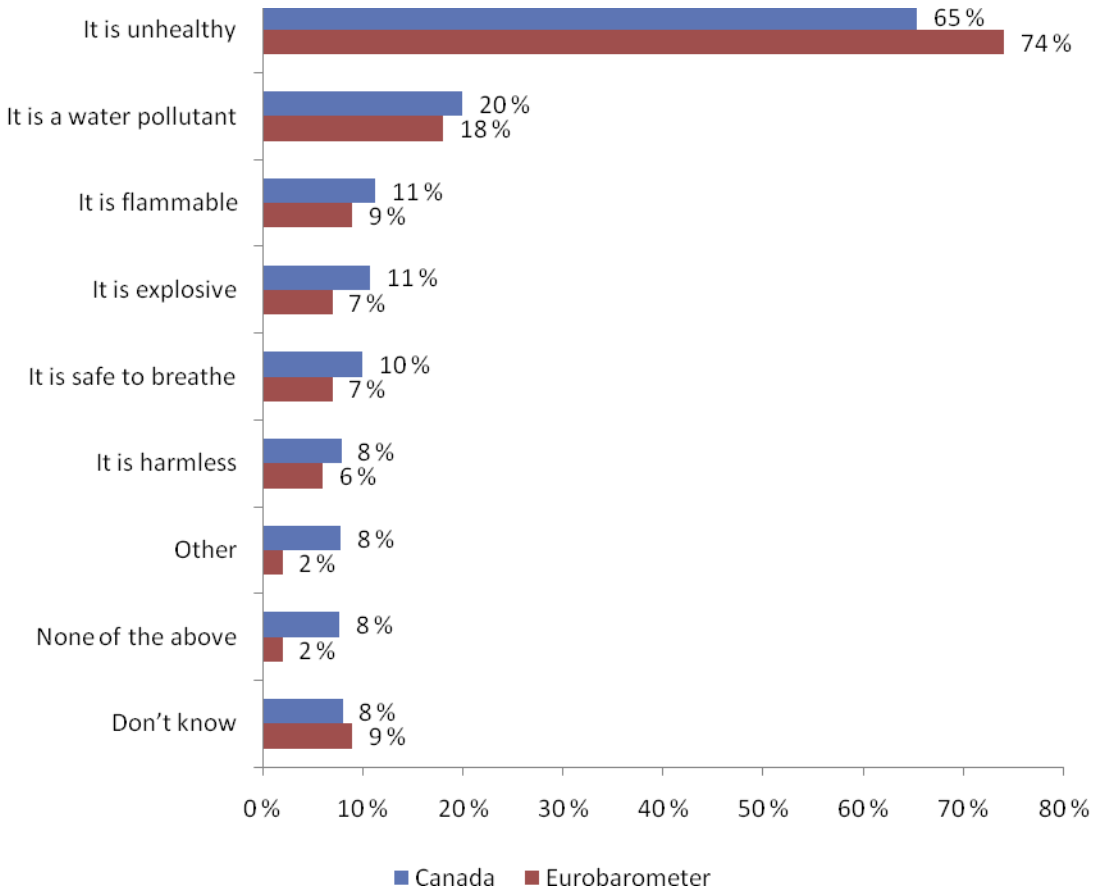
The belief that CO2 is unhealthy is most prevalent in Atlantic Canada (78%). Perceptions in other regions are quite similar.

	British Columbia	Alberta	Saskatchewan	Manitoba	Ontario	Quebec	Atlantic Canada
It is unhealthy	59 %▼	63 %	58 %▼	70 %	65 %	67 %	78 %▲
It is a water pollutant	16 %	15 %	19 %	20 %	21 %	19 %	29 %
It is flammable	8 %	7 %	9 %	9 %	14 %	10 %	13 %
It is explosive	9 %	9 %	8 %	9 %	12 %	8 %	16 %
It is safe to breathe	10 %	8 %	14 %	11 %	9 %	11 %	11 %
It is harmless	7 %	12 %	9 %	9 %	8 %	7 %	6 %
Other	10 %	9 %	17 %▲	6 %	7 %	8 %	7 %
None of the above	11 %	9 %	11 %	2 %	8 %	7 %	4 %
Don't know	13 %	6 %	6 %	9 %	8 %	7 %	5 %

Symbols "▲" and "▼" denote a statistically significant difference between columns at the 95% level.

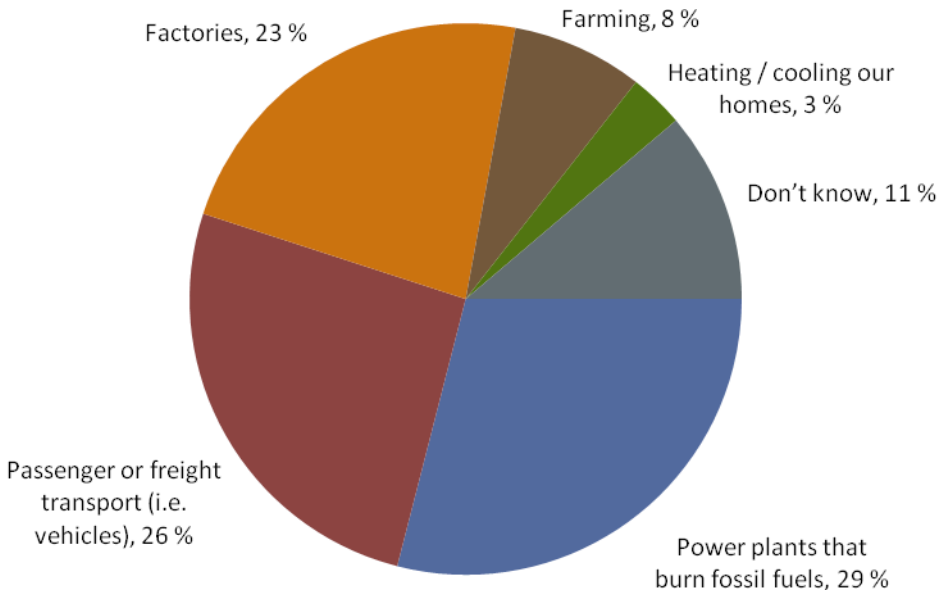
Carbon Dioxide (CO_2) Perception – Comparison to European Results

A majority of both Canadian (65%) and European (74%) respondents believe that CO2 is unhealthy.



Carbon Dioxide Sources

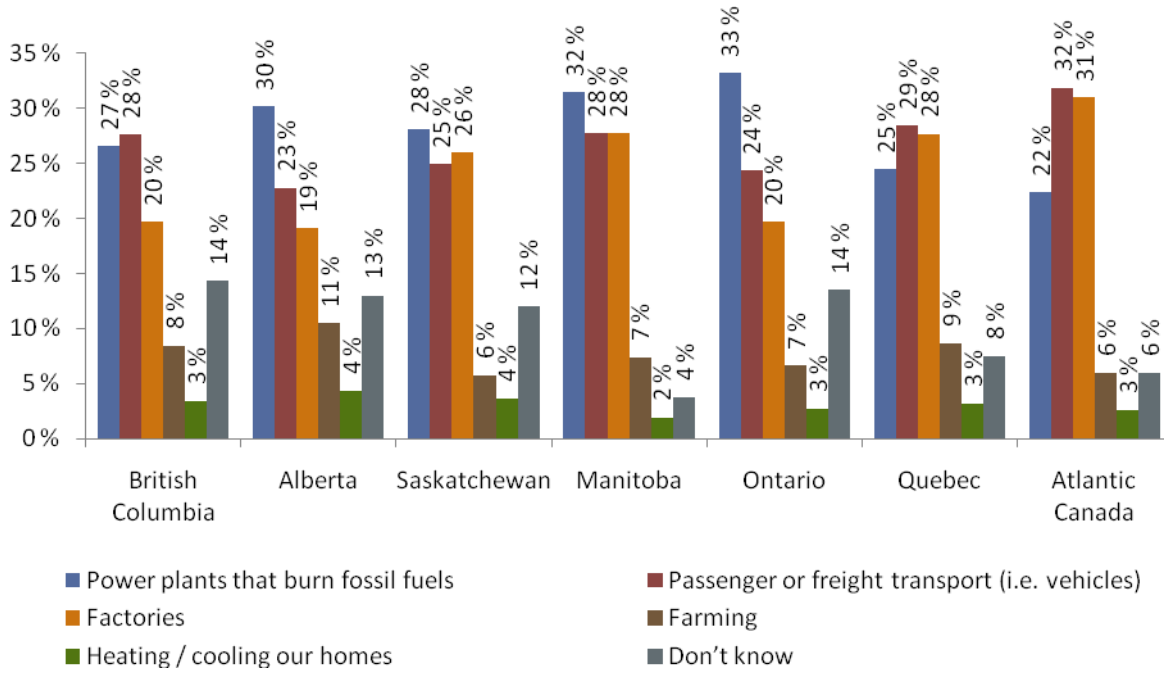
Respondents were asked to indicate which of a list of five sources they believe produces the most carbon dioxide globally. About the same proportion chose power plants that burn fossil fuels (29%), passenger or freight transport (26%) and factories (23%), indicating a lack of consensus among Canadians.



Q10. In your opinion, which of the following produces the most carbon dioxide (CO2) globally? (Base: n=1548)

Carbon Dioxide Sources – Regional Analysis

Within each province, respondents are divided with regards to which of the listed factors produce the most carbon dioxide globally. No significant differences between provinces were found.



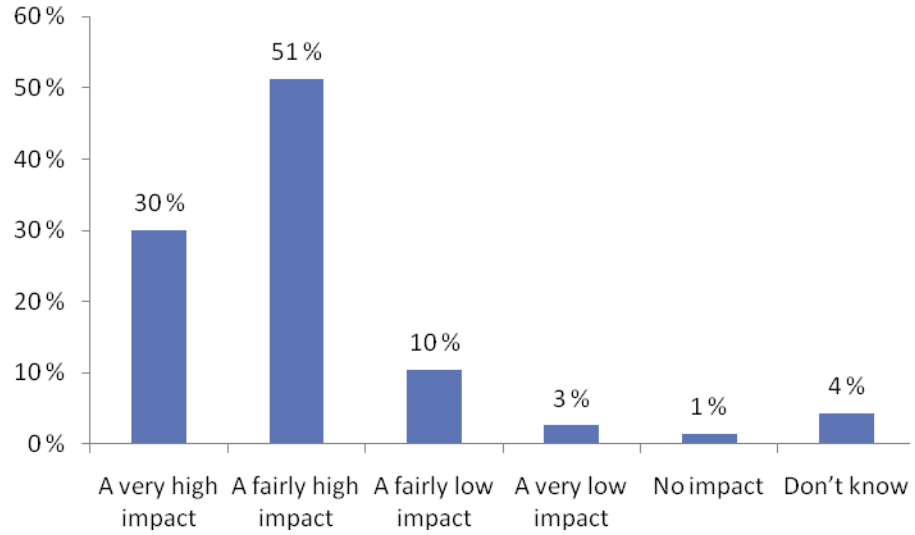
Carbon Dioxide Sources – Comparison with European Results

About the same proportion of respondents in Canada and Europe (29% vs. 28%) believe that power plants that burn fossil fuels produce the most CO2 globally. However, opinions of Canadians and Europeans differed notably with regards to passenger or freight transport and factories. In Canada, 23% believe that factories produce the most CO2 globally, a much lower proportion compared to respondents in Europe (35%). In addition to this, Canadian respondents are much more likely to believe that passenger or freight transport (26% vs. 15%) produce the most CO2 globally.

	Canada	Eurobarometer
Power plants that burn fossil fuels	29 %	28 %
Passenger or freight transport (i.e. vehicles)	26 %	15 %
Factories	23 %	35 %
Farming	8 %	7 %
Heating / cooling our homes	3 %	6 %
Don't know	11 %	9 %

Impact of Carbon Dioxide on the Environment

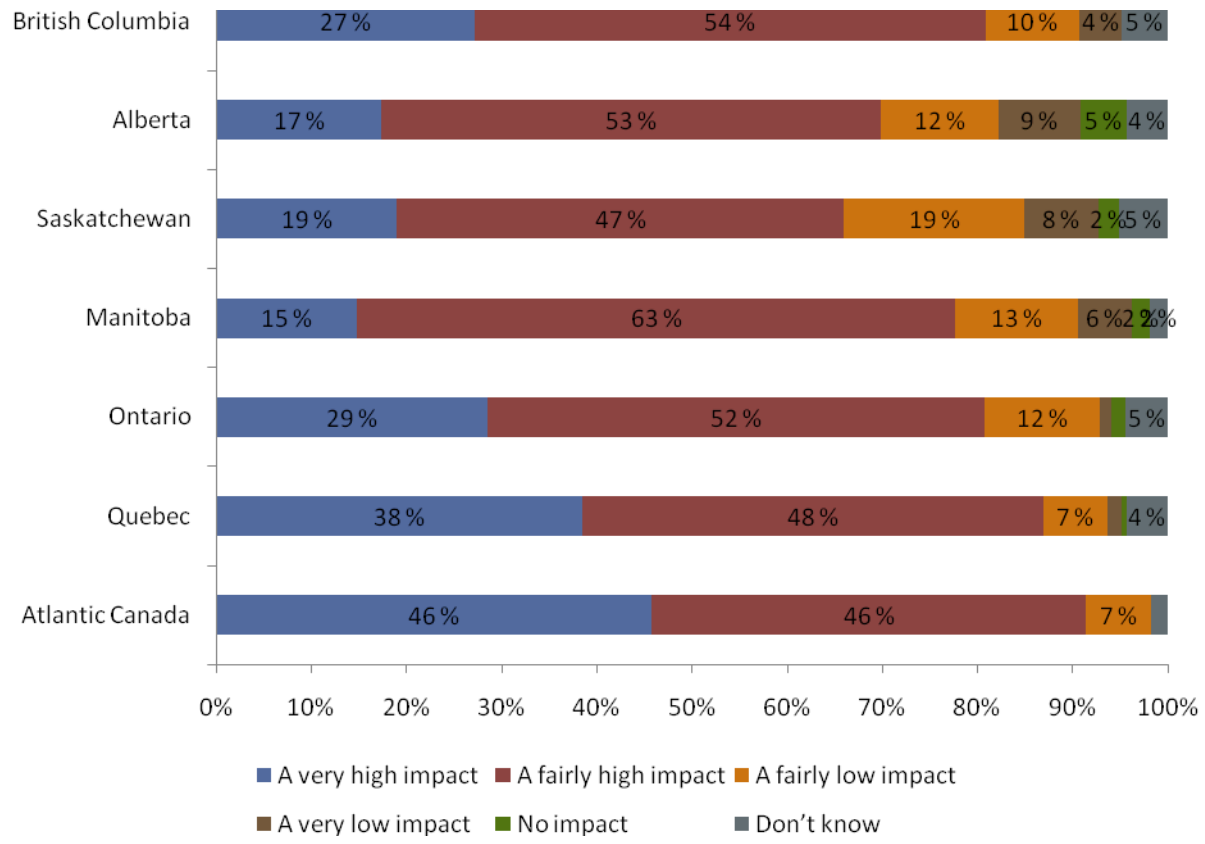
Eight in ten (81%) Canadians believe that carbon dioxide has a very (30%) or fairly (51%) high impact on climate change.



Q11. What impact do you think CO2 emissions have on climate change? Do you think it has…?(Base: n=1548)

Impact of Carbon Dioxide on the Environment – Regional Analysis

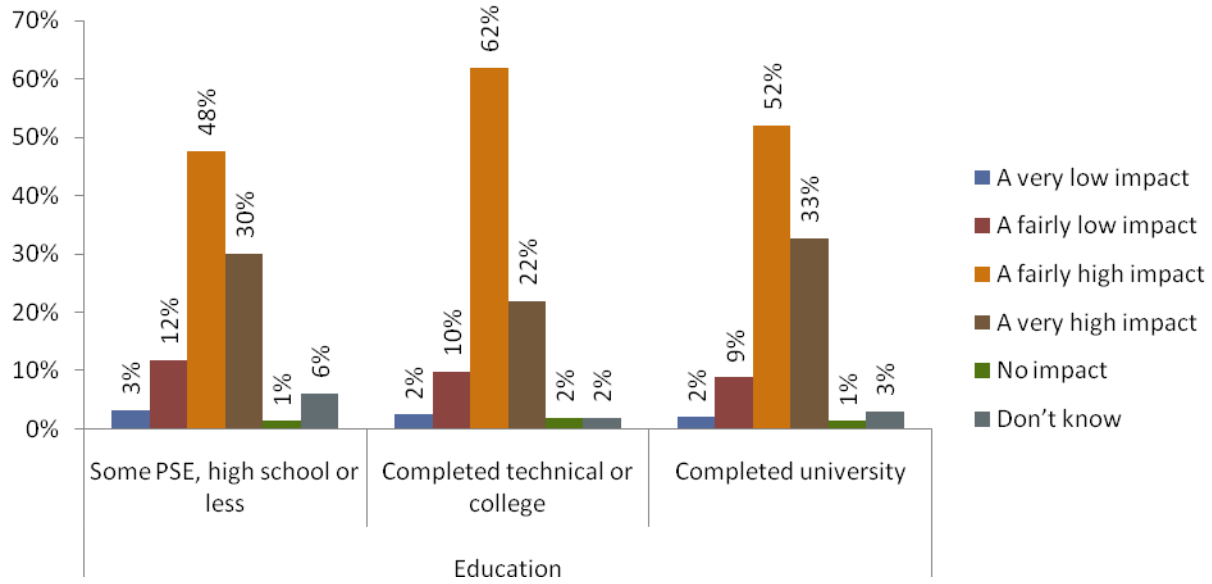
Respondents from Atlantic Canada (46%) and Quebec (38%) are much more likely to believe that carbon dioxide has a very high impact compared to residents of other provinces. Residents of Alberta (9%) and Saskatchewan (8%) are most likely to believe that carbon dioxide has a very low impact.



	British Columbia	Alberta	Saskatchewan	Manitoba	Ontario	Quebec	Atlantic Canada
A very high impact	27 %▼	17 %▼	19 %▼	15 %▼	29 %▼	38 %▲	46 %▲
A fairly high impact	54 %	53 %	47 %	63 %	52 %	48 %	46 %
A fairly low impact	10 %	12 %	19 %▲	13 %	12 %▼	7 %▼	7 %▼
A very low impact	4 %	9 %▲	8 %▲	6 %	1 %▼	2 %▼	0 %
No impact	0 %	5 %▲	2 %	2 %	2 %	1 %▼	0 %
Don't know	5 %	4 %	5 %	2 %	5 %	4 %	2 %

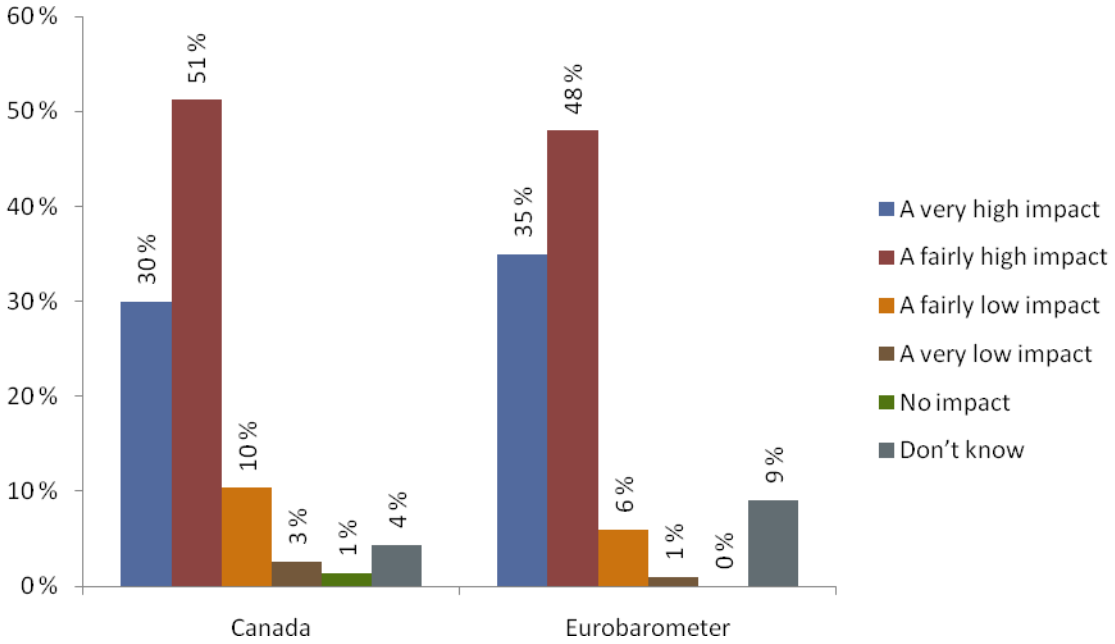
Impact of Carbon Dioxide on the Environment –Analysis by Demographics

Those who have completed university are the most likely (33%) to believe that carbon dioxide has a very high impact while those who have completed technical school or college are least likely (22%).



Impact of Carbon Dioxide on the Environment – Comparison with European Results

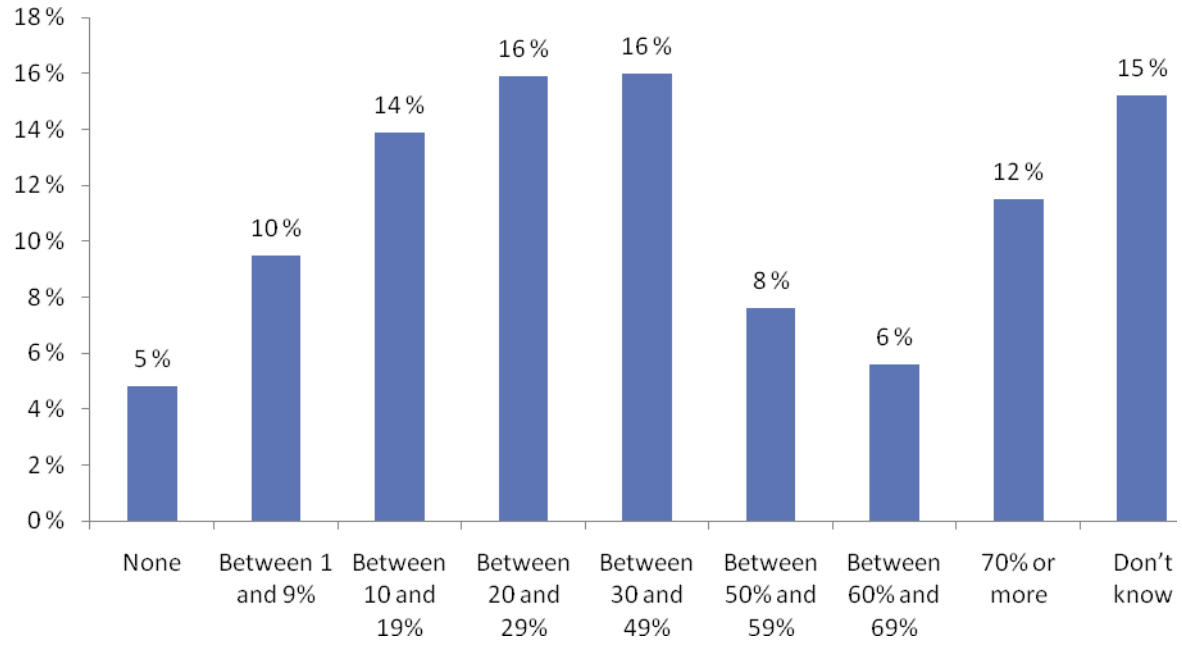
About the same proportion of respondents in the Eurobarometer study (83% vs. 81%) believe that carbon dioxide has a very or fairly high impact on the environment.



Awareness and Opinions about Electricity Production

Electricity from Coal

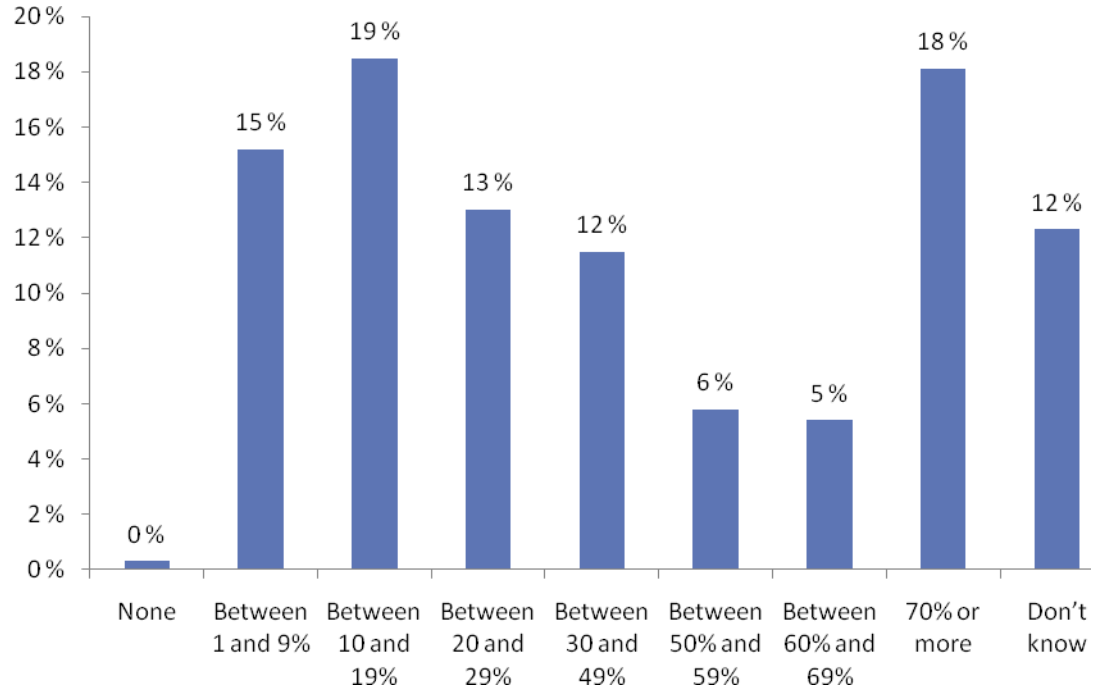
Nationally, respondents are diverse in their opinions about how much of their provincial energy source comes from coal, which is not a surprising result since the proportion varies by province.



12a. According to you, what proportion of total electricity produced in [province] currently comes from coal? [Open text] Could you estimate it into the following ranges? (Responses combined) (Base: n=1548)

Electricity from Renewable Sources

While one in six (18%) believe that 70% or more of their provincial energy comes from renewable resources,.



Q12a. And what proportion of electricity produced in [pipe in respondent's province] currently comes from renewable energy sources such as wind, water, and sun? Base: (n=849)

Electricity from Coal – Regional Comparison

Regionally, Saskatchewan and Alberta residents tend to believe that a greater proportion of their province's energy comes from coal.

Electricity from Coal	British Columbia	Alberta	Sask.	Manitoba	Ontario	Quebec	Atlantic Canada
Less than 10%	15 %▲	5 %▼	2 %▼	33 %▲	6 %▼	34 %▲	4 %▼
Between 10 and 29%	37%▲	17%▼	14%▼	26%▲	32%▲	32%▲	29%▲
Between 30 and 49%	15 %	12 %	14 %	15 %	21 %	9 %	16 %
Between 50 and 69%	9 %▼	21 %▲	24 %▲	7 %	17 %	6 %▼	13 %
70% or more	4 %▼	29 %▲	36 %▲	6 %▼	8 %▼	5 %▼	27 %▲
Don't know	19 %	16 %	10 %	13 %	16 %	15 %	11 %

Symbols "▼" and "▲" denote statistical significance at the 95% level.

Electricity from Renewable Sources – Regional Comparison

The proportion of electricity that respondents believe comes from renewable sources also differs from province to province. In Quebec (45%) and Manitoba (46%) nearly one half believes that in excess of 70% of their province's energy comes from renewable sources.

Electricity from renewable energy	British Columbia	Alberta	Sask.	Manitoba	Ontario	Quebec	Atlantic Canada
Less than 10%	7 %▼	26 %▲	20 %▲	13 %	17 %▲	11 %▼	18 %
Between 10 and 29%	24 %▼	37 %▲	44 %▲	9 %▼	39 %▲	18 %▼	45 %▲
Between 30 and 49%	9 %	10 %	15 %▲	9 %	16 %▲	6 %▼	12 %
Between 50 and 69%	20 %▲	10 %	7 %▼	11 %	11 %▼	8 %▼	11 %
70% or more	26 %▲	3 %▼	3 %▼	46 %▲	5 %▼	45 %▲	4 %
Don't know	14%	15%	9%	11%	13%	12%	10%

Symbols "▲" and "▼" denote a statistically significant difference between columns at the 95% level.

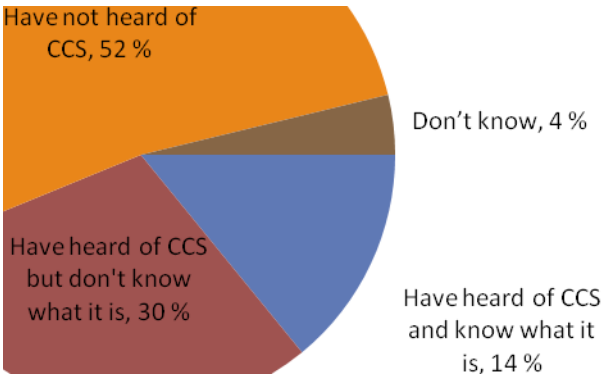
Awareness and Opinions about Electricity Production – Comparison with European Results

The following table shows the difference in the proportion of respondents in each region who believe that less than 10% or more than 10% of their electricity comes from coal or from renewable sources.

	Coal		Renewable Sources	
	Canada	Eurobarometer	Canada	Eurobarometer
Total "Less than 10%"	15%	18%	15%	37%
Total "More than 10%"	70%	54%	73%	37%
Don't Know	15%	28%	12%	26%

Awareness of CCS

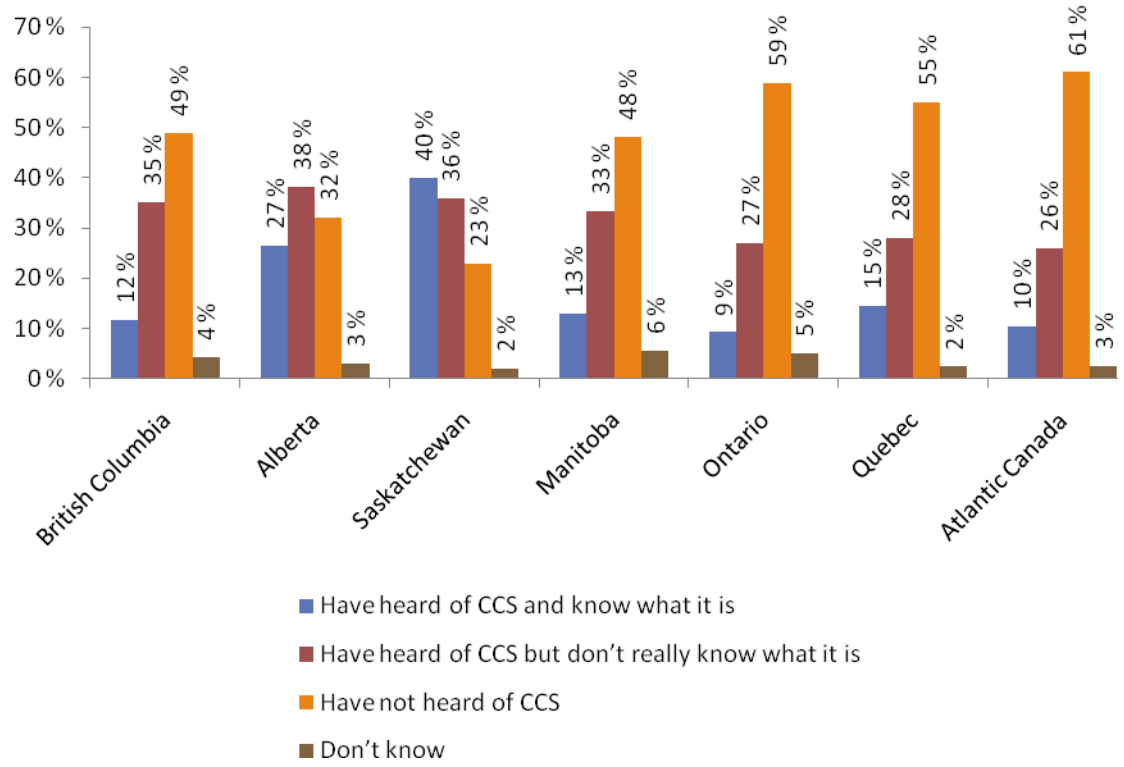
In Canada, awareness of CCS is moderate. About one in six (14%) respondents have heard of CCS and know what it is and three in ten (30%) have heard of it but do not know what it is. A majority (52%) have not heard of CCS.



Q13. Have you ever heard of CO2 capture and storage, also known as carbon capture and storage or carbon capture and sequestration (CCS)? (Base: n=1548)

Awareness of CCS – Regional Analysis

Knowledge of CCS is highest in Saskatchewan (40%) and Alberta (27%) and lowest in Ontario (9%) and Atlantic Canada (10%).

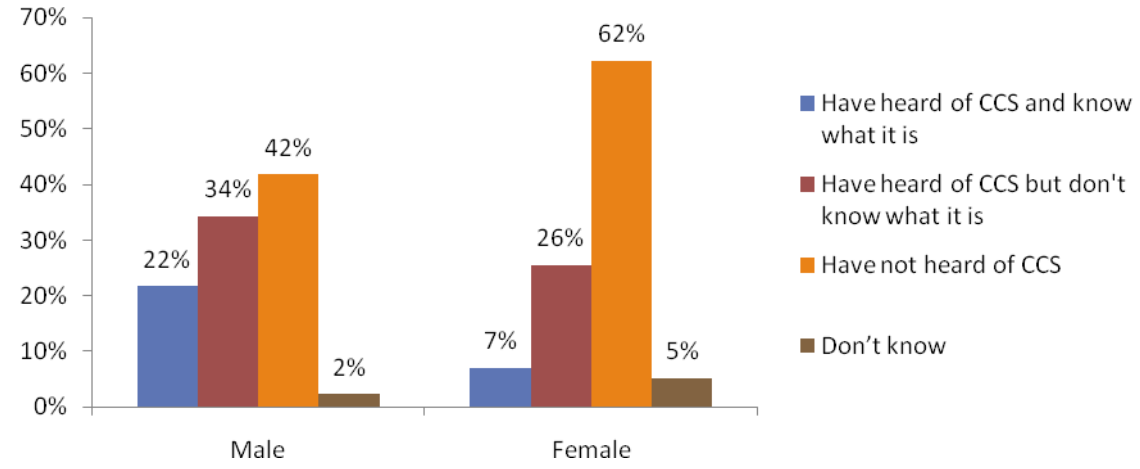


	British Columbia	Alberta	Saskatchewan	Manitoba	Ontario	Quebec	Atlantic Canada
Have heard of CCS and know what it is	12%▼	27%▲	40%▲	13%▼	9%▼	15%▼	10%▼
Have heard of CCS but don't really know what it is	35%	38%	36%▲	33%	27%▼	28%	26%
Have not heard of CCS	49%▲	32%▼	23%▼	48%▲	59%▲	55%▲	61%▲
Don't know	4%	3%	2%▼	6%	5%▲	2%	3%

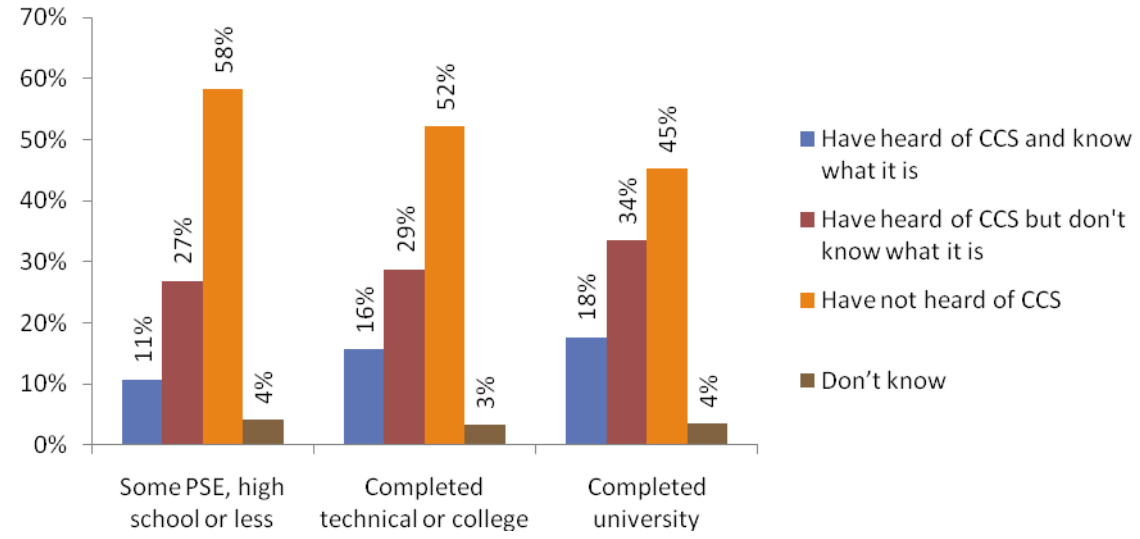
Symbols "▲" and "▼" denote a statistically significant difference between columns at the 95% level.

Awareness of CCS – Demographic Analysis

Men (22%) are about three times as likely as women (7%) to indicate that they have heard of CCS and know what it is.



University graduates (18%) are more likely than those who have some post-secondary education, a high school education or less (11%) to have heard of CCS and know what it is.



Symbols "▲" and "▼" denote a statistically significant difference between columns at the 95% level.

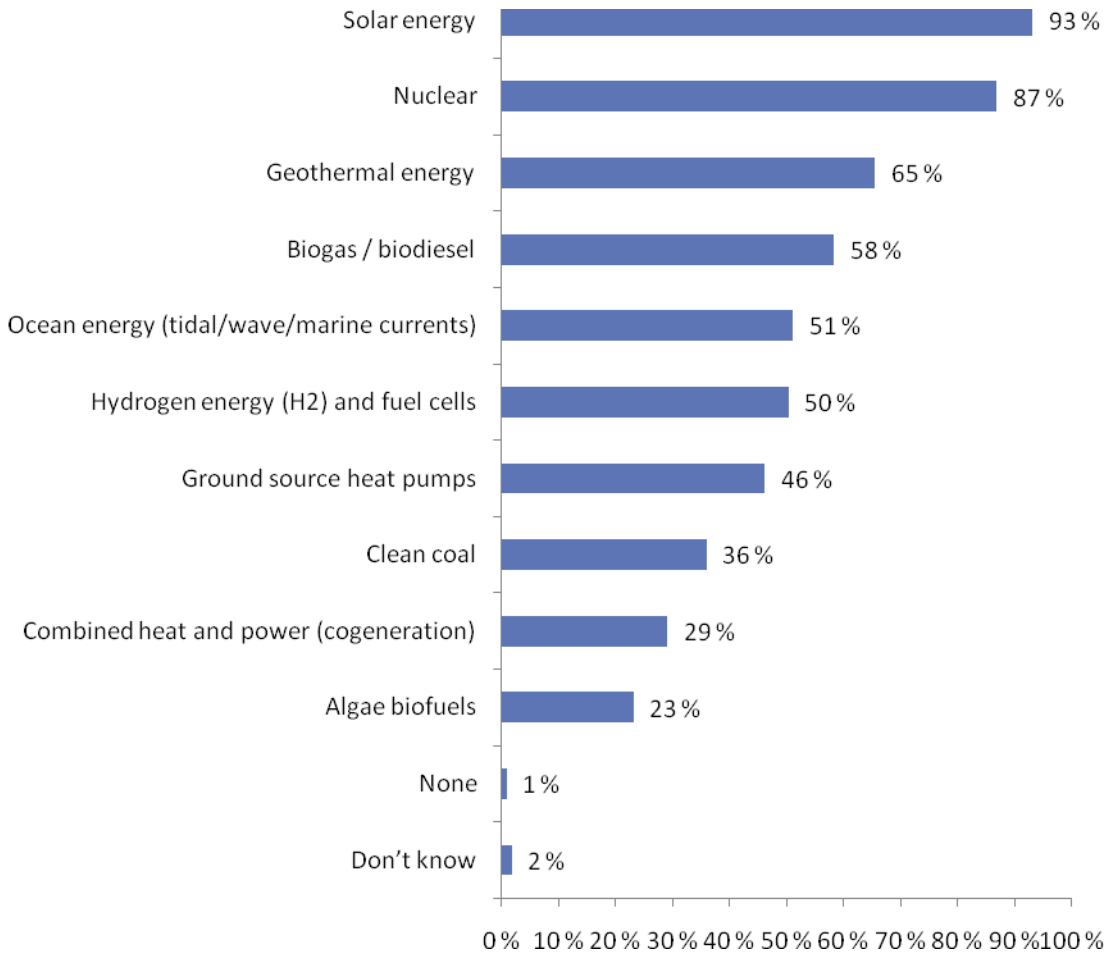
Awareness of CCS – Comparison with European Results

Compared to the European results, awareness levels in Canada are slightly higher. A total of 44% of Canadians have heard of CCS, whether or not they claim to know what it is, compared to 28% of Europeans.

	Canada	Eurobarometer
Total have heard of CCS	44%	28%
Have heard of CCS and know what it is	14%	10%
Have heard of CCS but don't know what it is	30%	18%
Have not heard of CCS	52%	67%
Don't know	4%	5%

Awareness about Energy production

About nine in ten are aware of solar (93%) or nuclear (87%) energy. One half or more have also heard of geothermal energy (65%), biogas or biodiesel (58%), ocean energy (51%) and hydrogen energy (50%).



Q14. In the context of energy production, which of the following have you heard of? (Select all that apply.) Multiple Answers possible. (Base: n=1548)

Awareness of Energy Production – Regional Analysis

Many differences in awareness levels of the different generation methods were found across the country. Nuclear and solar energy had high levels of awareness across the country but especially so in Saskatchewan where 97% are aware of solar energy and 92% indicated they are aware of nuclear energy. Awareness levels for these two generation methods are lowest in Quebec with 91% indicating they are aware of solar energy and 85% indicating they are aware of nuclear energy. Even though there are differences in awareness by province for these two methods, a very strong majority are aware of them across all provinces.

About nine in ten respondents from Saskatchewan (88%) and Manitoba (93%) are aware of geothermal energy, a notably higher proportion than in Ontario (60%), Quebec (62%) and Atlantic Canada (58%).

Respondents living in the coastal provinces are much more likely to have heard of ocean energy (69% of residents of Atlantic Canada and 65% of British Columbia residents) than those living in the interior.

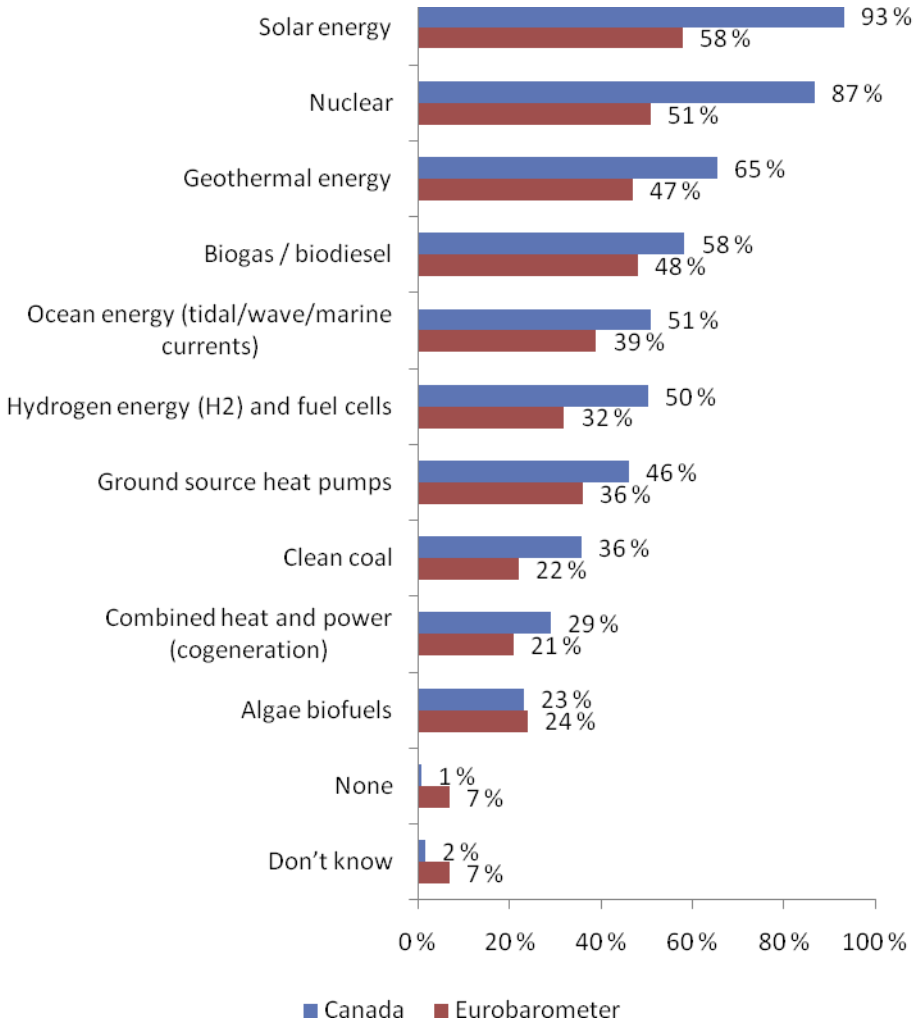
Awareness of clean coal is much higher in Saskatchewan (68%), Alberta (51%) and Atlantic Canada (49%) compared to the rest of the country.

	British Columbia	Alberta	Saskatchewan	Manitoba	Ontario	Quebec	Atlantic Canada
Solar energy	95 %	93 %	97 %▲	96 %	93 %▼	91 %▼	97 %
Nuclear	85 %	86 %	92 %▲	94 %	87 %	85 %▼	88 %
Geothermal energy	75 %▲	71 %▼	88 %▲	93 %▲	60 %▼	62 %▼	58 %▼
Biogas / biodiesel	64 %	61 %	75 %▲	56 %	50 %▼	66 %	55 %
Hydrogen energy (H2) and fuel cells	62 %▲	53 %	62 %▲	56 %	48 %	47 %	45 %
Ocean energy	65 %▲	50 %▼	50 %▼	48 %	47 %▼	48 %▼	69 %▲
Ground source heat pumps	48 %	36 %▼	53 %▲	65 %▲	41 %▼	50 %▼	55 %▲
Clean coal	35 %▼	51 %▲	68 %▲	30 %▼	35 %▼	24 %▼	49 %▲
Combined heat and power (cogeneration)	31 %	30 %	46 %▲	13 %	27 %	31 %	26 %
Algae biofuels	24 %	27 %	28 %	13 %	21 %	24 %	30 %
None	1 %	1 %	1 %	0 %	1 %	1 %	0 %
Don't know	2 %	2 %	1 %	0 %	2 %	2 %	2 %

Symbols "▲" and "▼" denote a statistically significant difference between columns at the 95% level.

Awareness about Energy production – Comparison with European Results

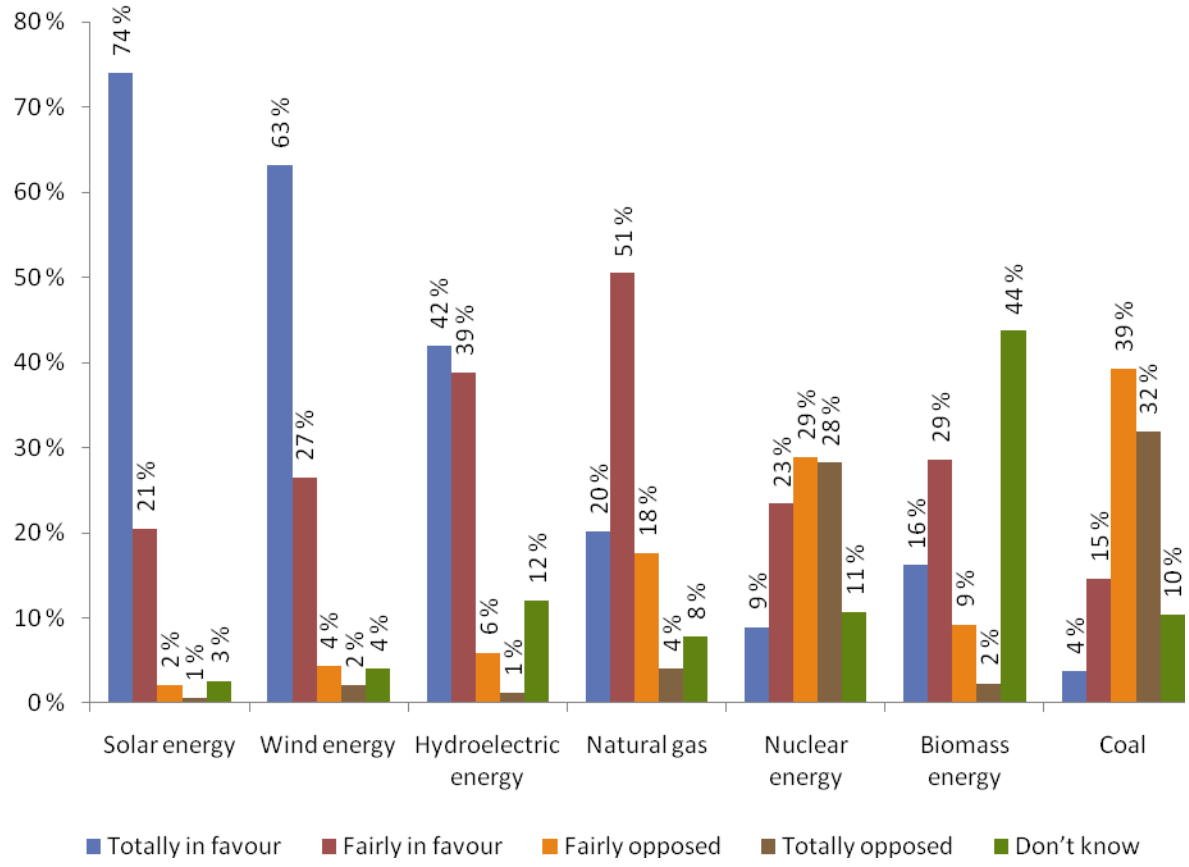
Compared to the European results, Canadian respondents tend to have a higher level of familiarity with many of the energy sources, especially solar energy (93% vs. 58%), nuclear energy (87% vs. 51%), geothermal energy (65% vs. 47%) and hydrogen energy (50% vs. 32%).



*In the Eurobarometer study, "solar energy" was presented as "solar voltaic energy"
**In the Eurobarometer study, "Nuclear" was divided into "Nuclear fusion" and "Nuclear fission". Results for "Nuclear fusion", the highest of the two, are used as a comparative.

Opinions about Use of Different Sources of Energy

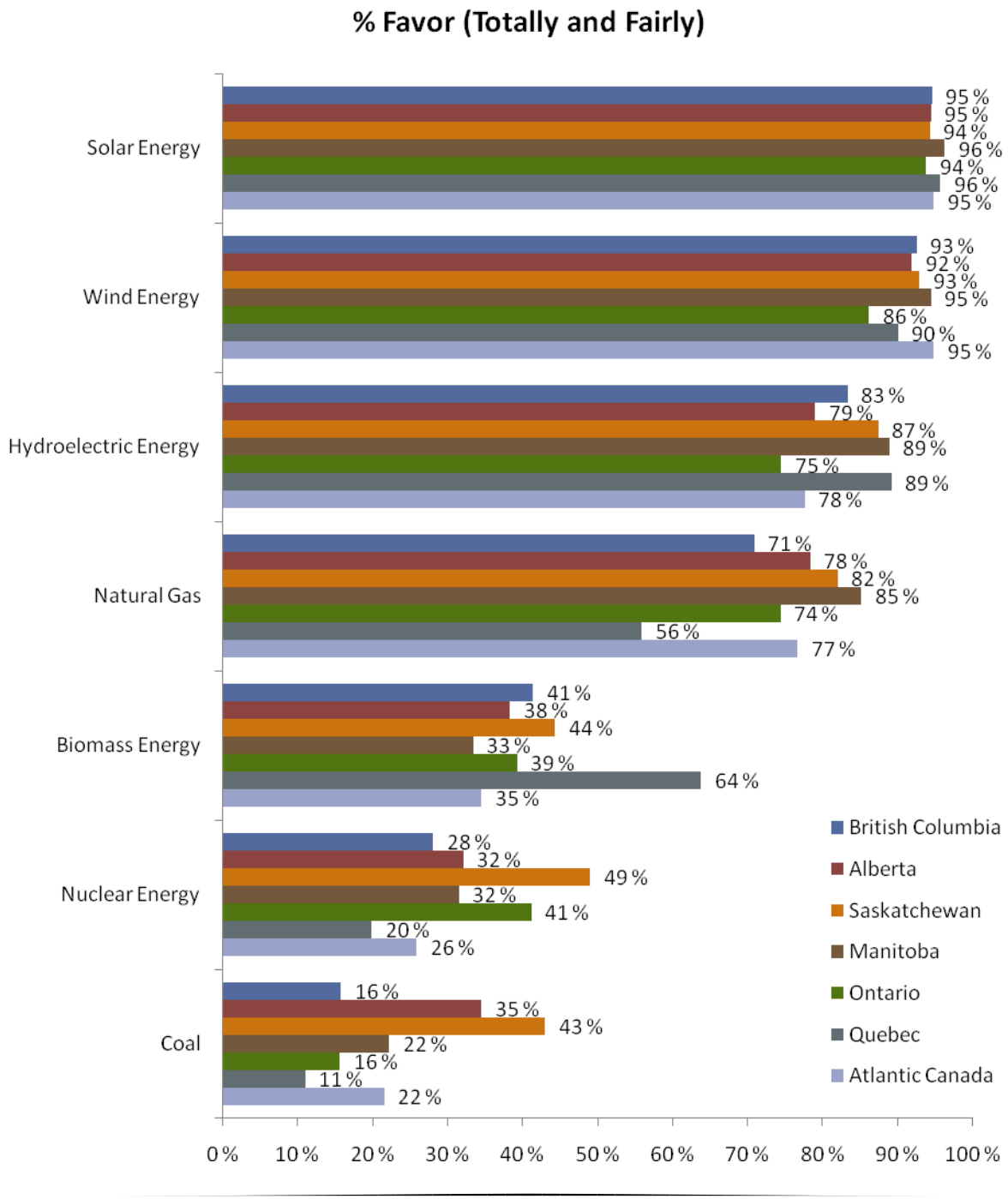
Solar energy (95% are totally or fairly in favour) and wind energy (90%) are both highly favoured by Canadian respondents. A majority also are totally or fairly in favour of hydroelectric energy (81%) and natural gas (71%). Least favoured is coal (19%).



15. To what extent are you in favor of or opposed to the use of the following sources of energy in Canada? (Base: n=1548)

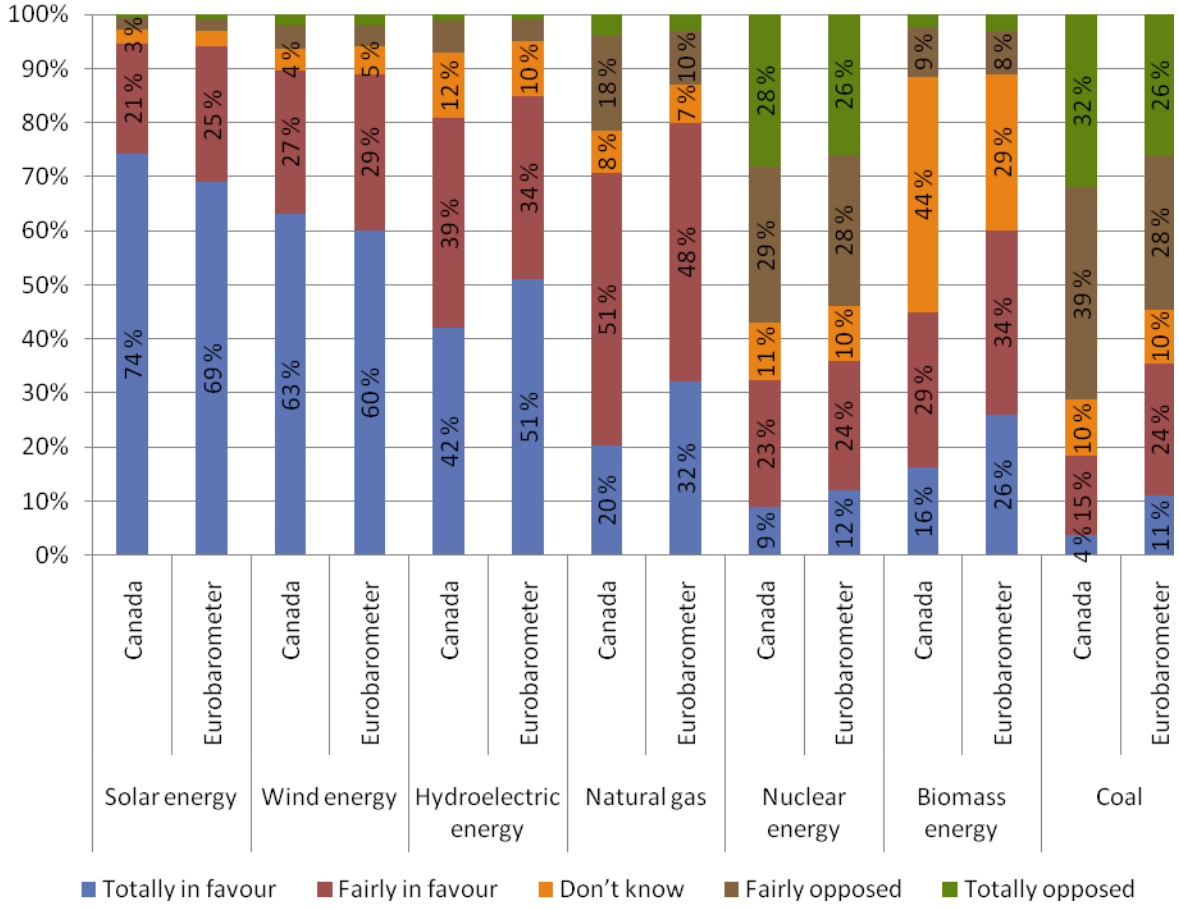
Opinions about Energy Sources – Regional Analysis

While a strong majority of respondents in all provinces favour solar energy and wind energy, several differences exist in terms of the favourability of the remaining energy sources. Most notably, residents of Quebec are most likely to favour Biomass energy and least likely to favour natural gas. As well, nuclear energy is highly favoured in Saskatchewan and Ontario, and coal is most favoured in Saskatchewan and Alberta.



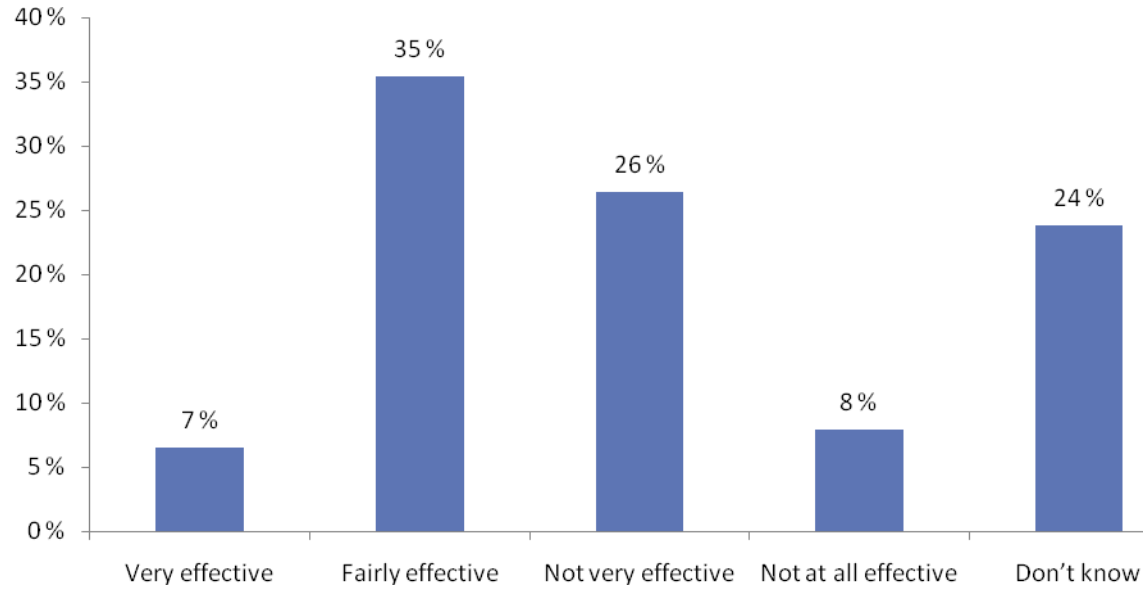
Opinions about Energy Sources – Comparison to European Results

Generally, the same energy sources are highly favoured in both Europe and Canada. Respondents from the Eurobarometer study are slightly more likely to be in favour of natural gas (80% vs. 71%), biomass energy (60% vs. 45%) and coal (35% vs. 18%).



Opinions about CCS

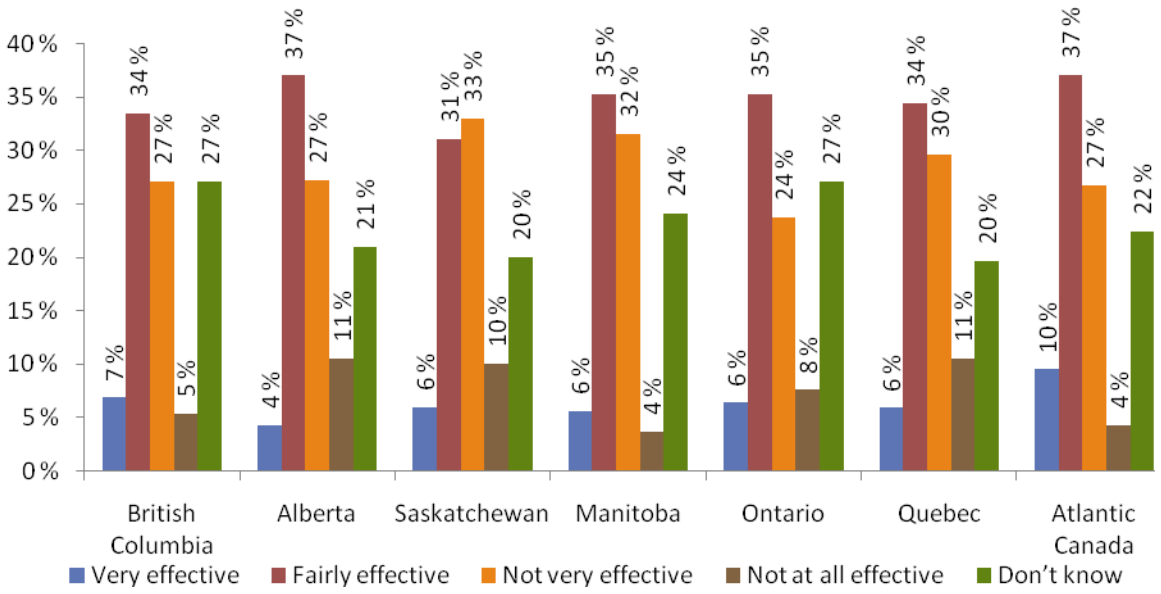
Overall, Canadians are divided on how effective they think CCS could be in fighting climate change. Few (7%) think it could be very effective and a further one third (35%) believe that it could be fairly effective. One quarter (26%) think it would be not very effective and 8% that it would be not at all effective. One quarter (24%) are unsure of its potential effectiveness.



Q16. In your opinion, taking into account all you know about CCS or carbon capture and storage, do you think it could be effective or not in fighting climate change? (Base: n=1548)

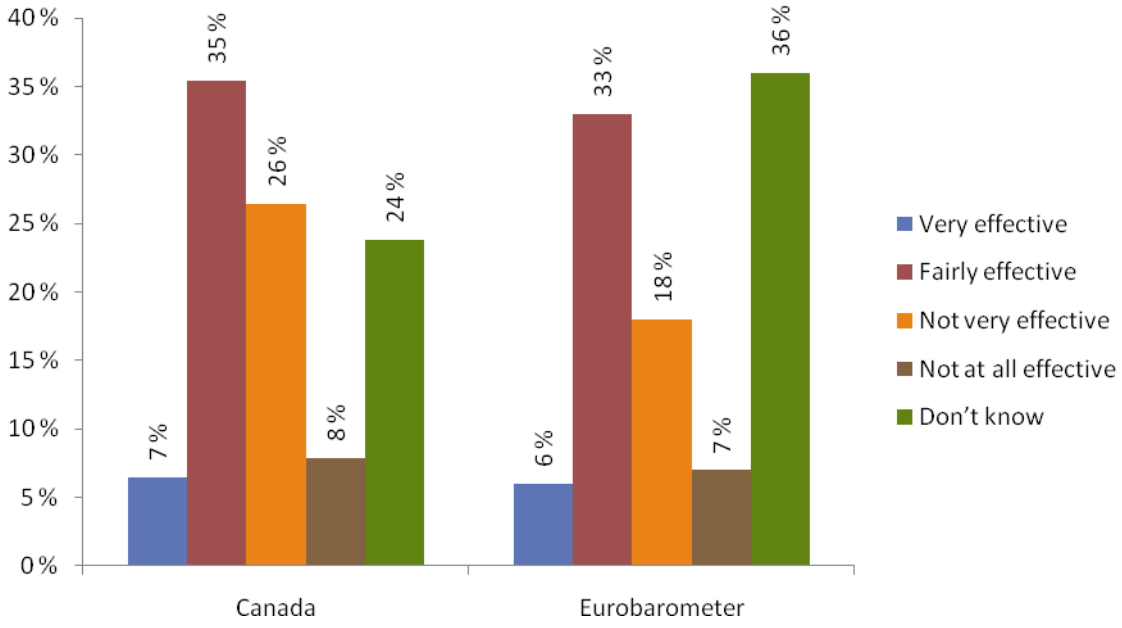
Opinions about CCS – Regional Analysis

Regionally, few differences exist in terms of the perceived effectiveness of CCS to fight climate change. In each province, respondents are divided on its effectiveness.



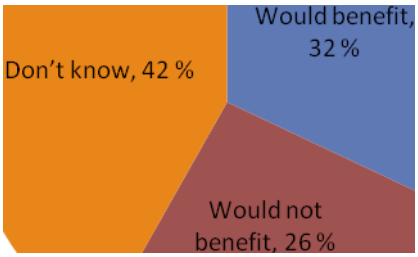
Opinions about CCS – Comparison with the European Study

About the same proportion of respondents in Europe and Canada believe that CCS could be very (6% vs. 7%) or fairly (33% vs. 35%) effective in fighting climate change. A higher proportion of respondents in the European study are unsure (36% vs. 24%) of its effectiveness.



Perceived Benefits from CCS Technology

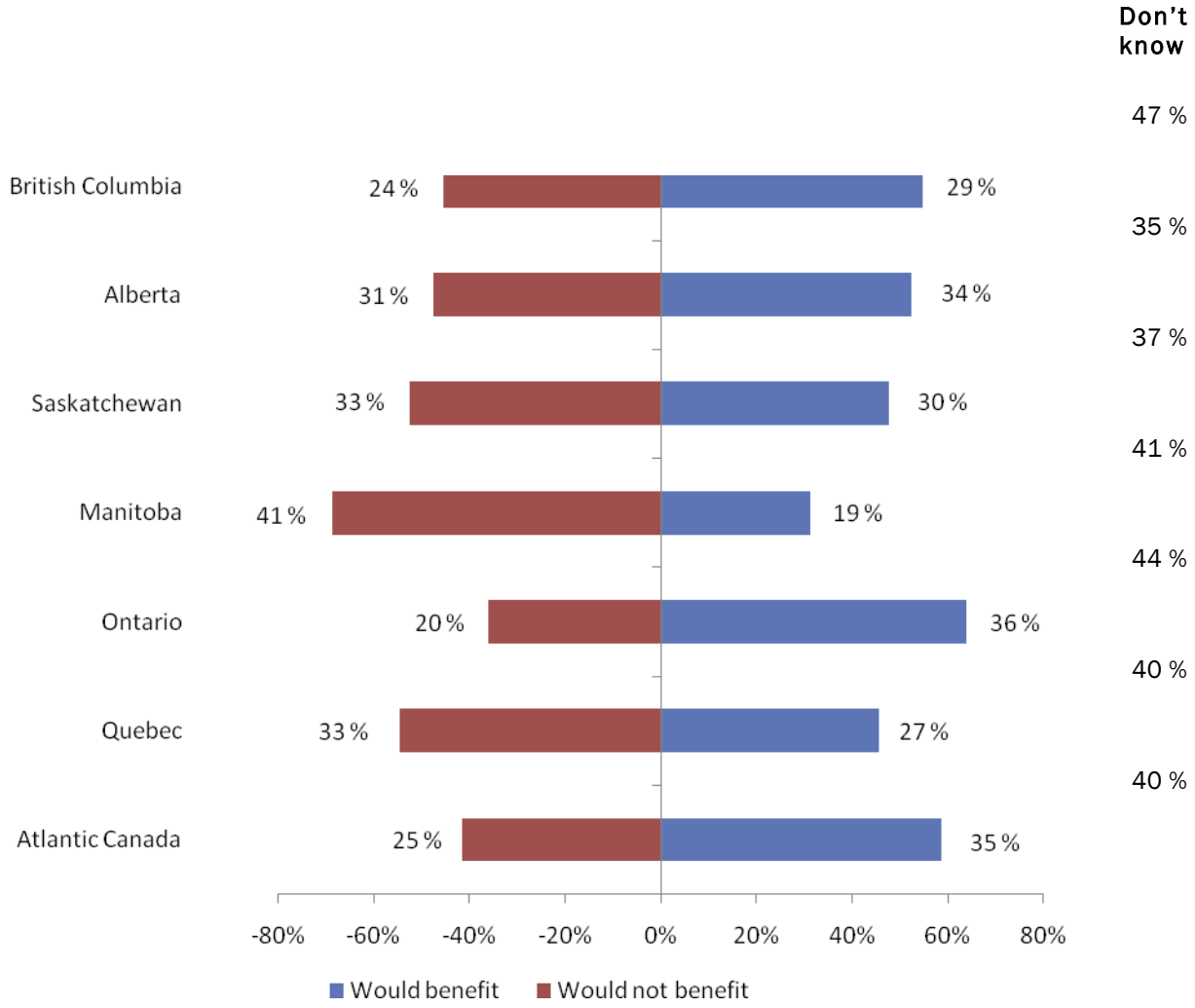
Respondents are divided on whether they believe they would (32%) or would not (26%) benefit if carbon capture and storage technology was used in their province. A large proportion (42%) is unsure whether or not they would benefit.



Q17. If CCS or carbon capture and storage technology was used in [Province], do you think that you would benefit from it or not? (Base: n=1548)

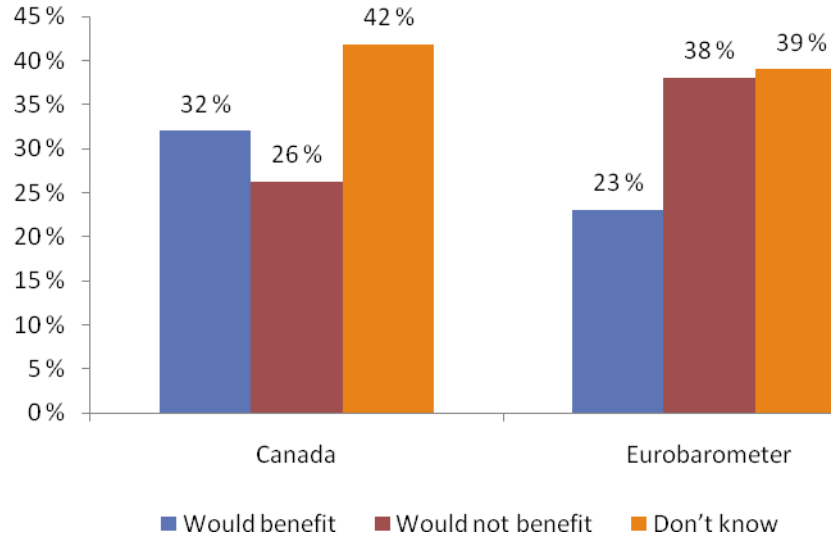
Perceived Benefits of CCS Technology – Regional Analysis

Within all provinces, respondents are divided on whether they believe they would benefit from CCS technology if it was used in their province. Ontario residents are least likely to believe that they would not benefit (20%) from CCS technology and residents of Manitoba (41%), Saskatchewan (33%) and Alberta (31%) are most likely to believe they would not benefit from CCS technology.



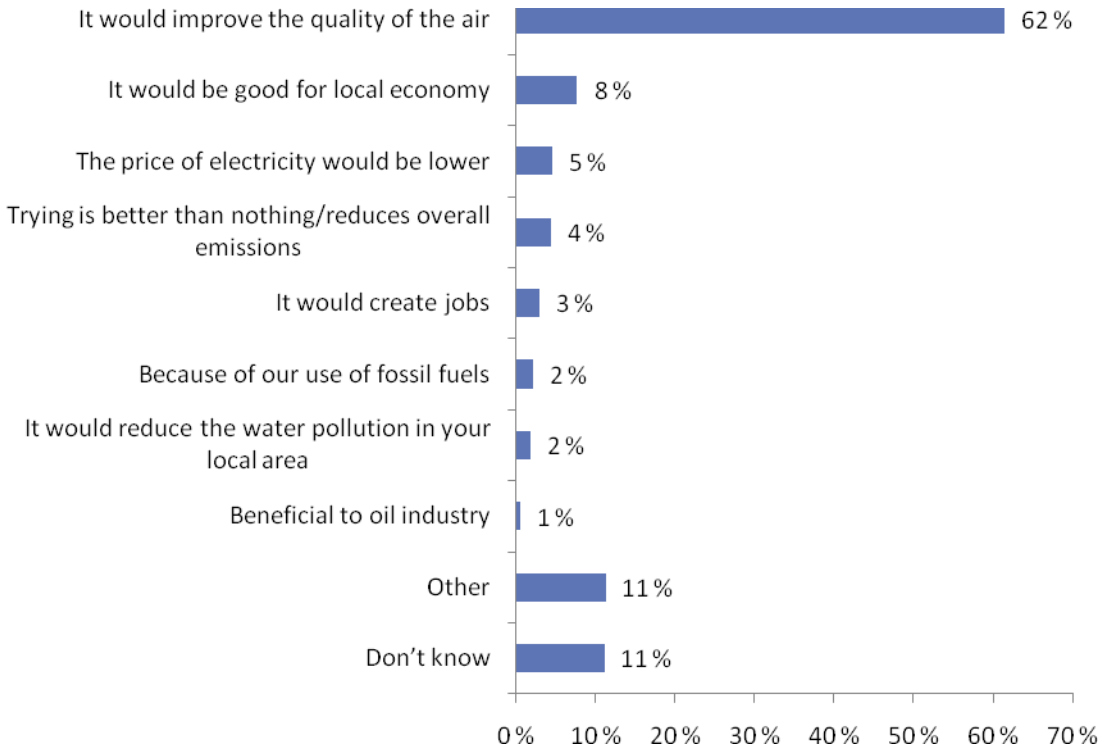
Perceived Benefits from CCS Technology – Comparison with European results

Canadians are more likely that Europeans to believe that they would benefit (32% vs. 23%) if CCS technology were used.



Reason for Benefit

Improvement in air quality (62%) is by far the most common reason given by respondents for whether or not they would benefit from CCS technology.



Q18. Why do you think that you would benefit from the use of CCS technology in [insert province]? (Select a maximum of 2 answers.)
Base: Those who believe that they would benefit (n=496)

Reason for Benefit – Regional Analysis

Respondents in Manitoba are most likely to believe that they would benefit from the attempt of reducing overall emissions, rather than doing nothing (30%); however it should be noted that the sample size is very small for this question. Saskatchewan residents are the most likely to cite the creation of jobs (12%) as a beneficial factor while Ontario residents are least likely (2%).

	British Columbia	Alberta	Saskatchewan	Manitoba*	Ontario	Quebec	Atlantic Canada
It would improve the quality of the air	70 %	71 %	58 %	50 %	57 %	57 %	68 %
It would be good for local economy	3 %	6 %	12 %	0 %	9 %	11 %	2 %
Trying is better than nothing/reduces overall emissions	3 %▼	0 %	4 %▼	30 %▲	6 %	2 %▼	5 %
The price of electricity would be lower	2 %	2 %	5 %	0 %	6 %	3 %	10 %
It would create jobs	0 %	7 %	12 %▲	10 %	2 %▼	3 %	5 %
Because of our use of fossil fuels	3 %	2 %	2 %	0 %	2 %	1 %	5 %
It would reduce the water pollution in your local area	3 %	2 %	0 %	0 %	1 %	4 %	2 %
Beneficial to oil industry	0 %	4 %	2 %	0 %	0 %	0 %	0 %
Other	7 %	7 %	12 %	20 %	14 %	12 %	10 %
Don't know	15 %	11 %	7 %	0 %	12 %	10 %	7 %
Total	59	55	349	10	211	101	41

*Very small sample size

Reason for Benefit – Comparison with Eurobarometer Study

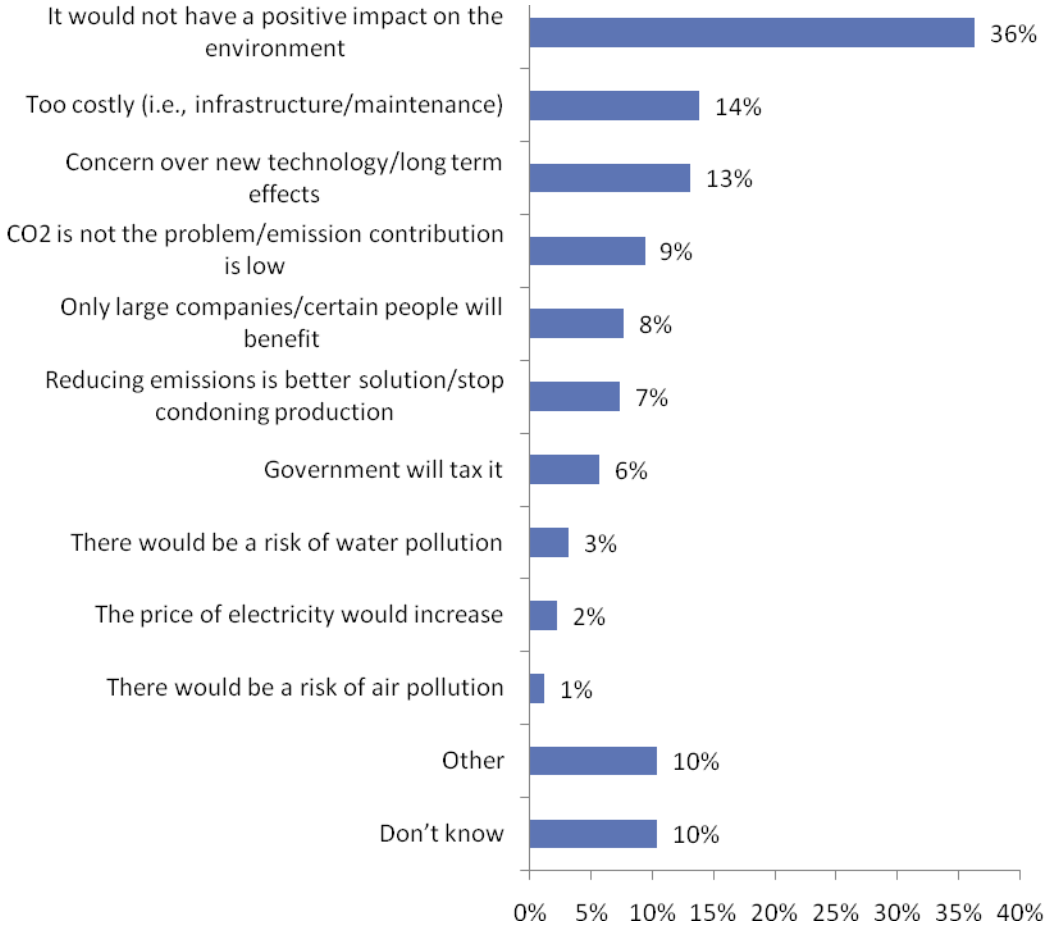
In both Europe and Canada, the most common reason given by respondents regarding why they would benefit from CCS technology is the improvement in air quality (62% in Canada vs. 53% in Europe). A much higher proportion of European respondents cited economic positives such as job creation (30% vs. 3%) and that it would be good for the local economy (21% vs. 8%). Lowering the price of electricity (24% vs. 5%) and reduction of water pollution (24% vs. 2%) was also mentioned by a much higher proportion of respondents in the Eurobarometer study.

	Canada	Eurobarometer
It would improve the quality of the air	62 %	53 %
It would be good for local economy	8 %	21 %
The price of electricity would be lower	5 %	24 %
It would create jobs	3 %	30 %
It would reduce the water pollution in your local area	2 %	24 %
Other	11 %	1 %
Trying is better than nothing/reduces overall emissions*	4 %	-
Because of our use of fossil fuels*	2 %	-
Beneficial to oil industry*	1 %	-
Don't know	11 %	3 %

*Please note that these categories were not included in the Eurobarometer study. Mentions under these themes in the Eurobarometer study may be included under "other".

Reason for Not Benefitting from CCS

Most commonly, respondents believe they would not benefit from CCS because they believe it would not have a positive impact on the environment (36%).



Q19. Why do you think you would not benefit from the use of CCS technology in [insert province]? (Select a maximum of 2 answers.)
Base: Those who believe they would not benefit (n=405)

Reason for Not Benefitting from CCS – Regional Analysis

Overall, the reasons that respondents gave for not benefitting from CCS analysis is fairly consistent province to province. The most notable exception is regarding the belief that it would not have a positive effect on the environment, which was mentioned by a much higher percentage of respondents in Alberta (56%) and much lower (22%) in Quebec.

	British Columbia	Alberta	Sask.	Manitoba	Ontario	Quebec	Atlantic Canada
It would not have a positive impact on the environment	33%	56%▲	43%▲	46%	37%	22%▼	62%▲
Concern over new technology/ long term effects	14%	10%	13%	14%	19%	8%	10%
Too costly (i.e., infrastructure/ maintenance)	12%	18%	16%	14%	13%	12%	14%
Reducing emissions is better solution/ stop condoning production	10%	0%	11%	5%	8%	8%	10%
CO2 is not the problem/ emission contribution is low	14%	12%	14%	9%	7%	9%	0%
There would be a risk of water pollution	6%	4%	2%	0%	5%	1%	3%
Only large companies/ certain people will benefit	2%	10%	12%	0%	4%	11%	14%
The price of electricity would increase	4%	0%	5%	0%	3%	3%	0%
There would be a risk of air pollution	2%	0%	0%	0%	1%	3%	0%
It would be bad for the local economy	0%	0%	1%	0%	0%	0%	0%
Government will tax it	6%	6%	3%	9%	6%	3%	10%
Other	8%	12%	9%	14%	10%	13%	3%
Don't know	16%	4%	8%	5%	11%	13%	7%

*Small sample size

Reason for Not Benefitting from CCS – Comparison with Eurobarometer Study

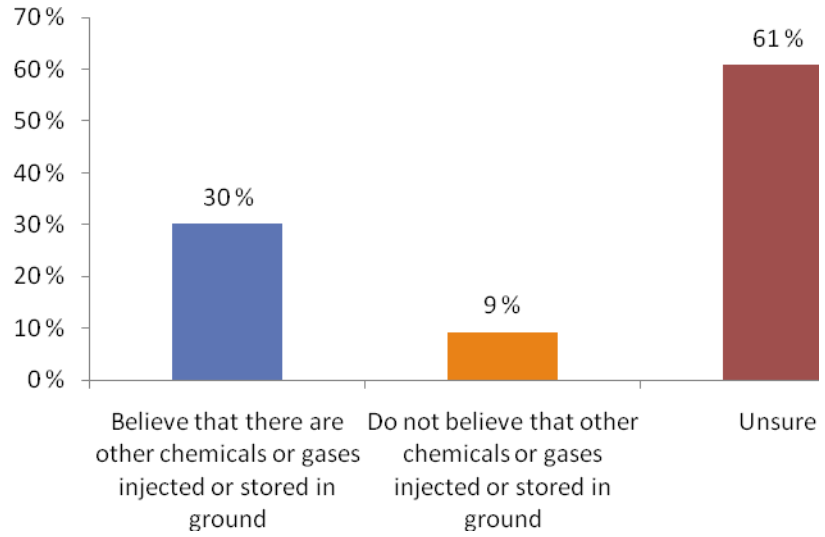
Although the same proportion of respondents in Canada (36%) and Europe (36%) believe that CCS would not benefit them due to the technology not having a positive impact on the environment, Canadian and European respondents have very divergent opinions on many of their reasons for opposing the technology. European respondents are much more likely to cite a risk of air pollution (27% vs. 1%), risk of water pollution (29% vs. 3%) and that the price of electricity would increase (21% vs. 2%). By contrast, Canadians mentioned reasons such as the costliness of CCS infrastructure (14%) and general concern over the new technology's long term effects (13%).

	Canada	Eurobarometer
It would not have a positive impact on the environment	36%	36%
There would be a risk of water pollution	3%	29%
The price of electricity would increase	2%	21%
There would be a risk of air pollution	1%	27%
Fossil fuel use will fall considerably in the coming years	0%	11%
It would be bad for the local economy	0%	9%
Other	10%	10%
Too costly (i.e., infrastructure/maintenance)	14%	-
Concern over new technology/long term effects	13%	-
CO2 is not the problem/emission contribution is low	9%	-
Only large companies/certain people will benefit	8%	-
Reducing emissions is better solution/stop condoning production	7%	-
Government will tax it	6%	-
Don't know	10%	4%

*Please note that these categories were not included in the Eurobarometer study. Mentions under these themes in the Eurobarometer study may be included under "other".

Other Chemicals and Gases Injected or Stored In Ground

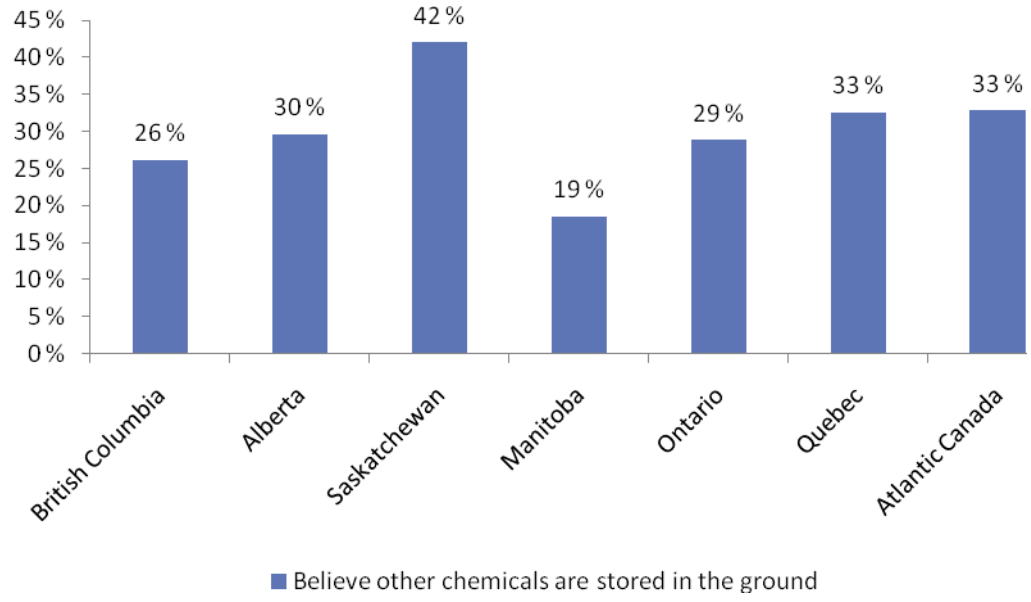
Three in ten (30%) believe there are other chemicals or gases that are injected or stored in the ground.



Q20. To the best of your knowledge, are any other chemicals or gases injected or stored in the ground? (Base: n=1548)

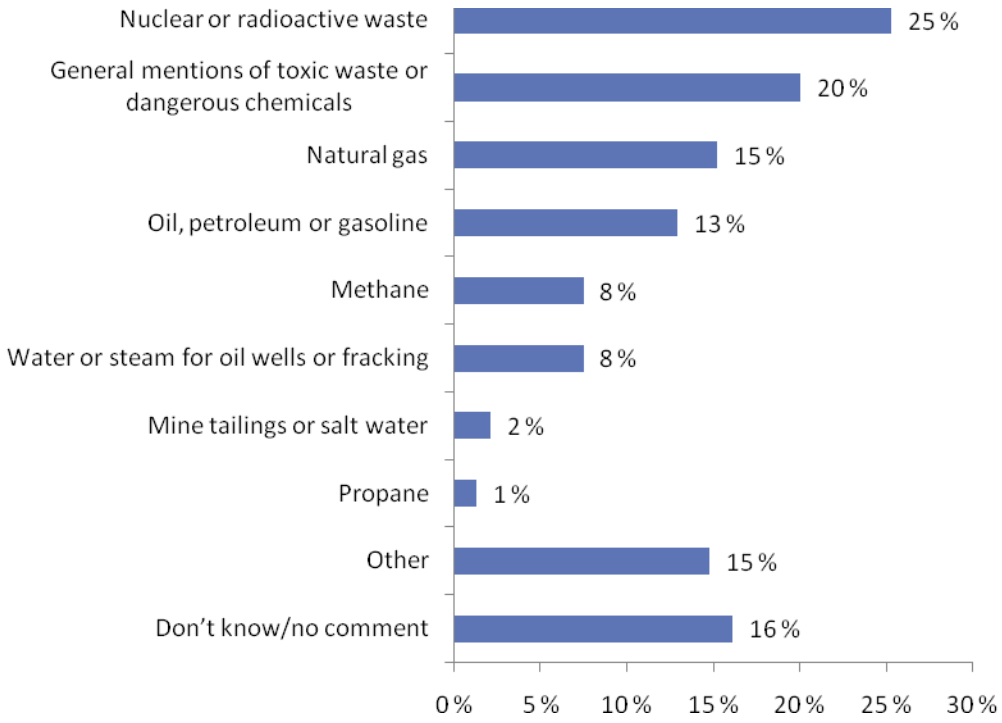
Other Chemicals and Gases Injected or Stored In Ground – Regional Analysis

Saskatchewan residents are most likely to believe other chemicals or gases are injected or stored in the ground (42%). Manitoba residents (19%) and British Columbia residents (26%) are least likely.



Other Chemicals Stored in the Ground

When asked to name chemicals that are stored or injected in the ground, respondents most commonly mentioned nuclear or radioactive waste (25%) or generally mentioned toxic waste or dangerous chemicals.



Other Chemicals Stored in the Ground – Regional Analysis

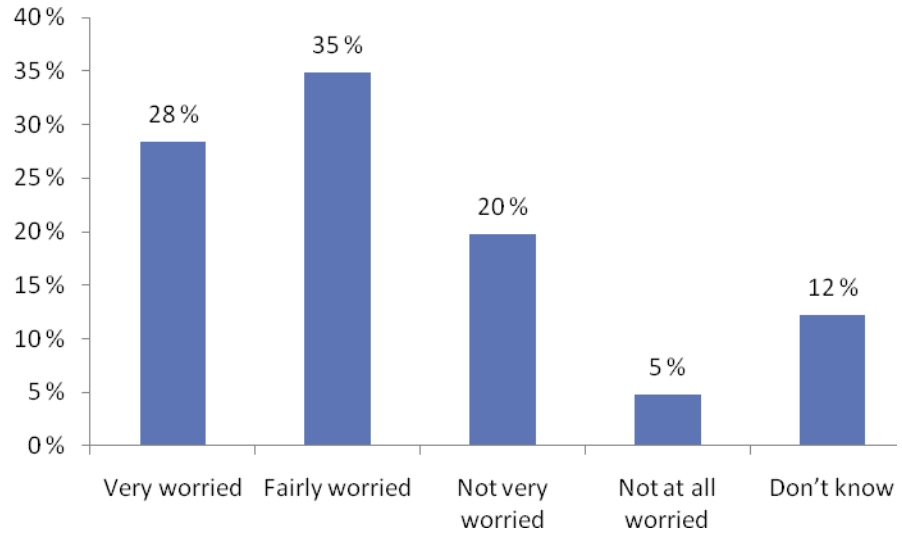
Nuclear or radioactive waste (60%) was much more commonly mentioned by Manitoba residents, and least often by British Columbia residents (13%). Respondents in the Prairie Provinces (22% of Saskatchewan residents and 30% of Manitoba residents) are more likely to mention water or steam for oil wells or fracking. As well Saskatchewan respondents are more likely to mention natural gas (37%) and mine tailings or salt water (10%).

	British Columbia	Alberta	Saskatchewan	Manitoba	Ontario	Quebec	Atlantic Canada
Nuclear or radioactive waste	13%▼	19%	20%	60%▲	26%	32%	21%
Water or steam for oil wells or fracking	4%▼	15%	22%▲	30%▲	4%▼	7%▼	8%
Oil, petroleum or gasoline	21%	8%	6%	20%	14%	10%	16%
General mentions of toxic waste or dangerous chemicals	25%	25%	11%	10%	21%	18%	18%
Natural gas	15%▼	21%	37%▲	10%	14%▼	7%▼	16%
Methane	6%	8%	3%	10%	9%	7%	11%
Propane	0%	2%	3%	0%	2%	0%	0%
Mine tailings or salt water	0%	0%	10%▲	0%	1%▼	3%	8%
Other	17%	15%	13%	10%	15%	17%	16%
Don't know/no comment	17%	8%	11%	0%	18%	17%	18%
Total	53	48	456	10	171	121	38

Symbols "▲" and "▼" denote a statistically significant difference between columns at the 95% level.

Concerns about CO2 Storage

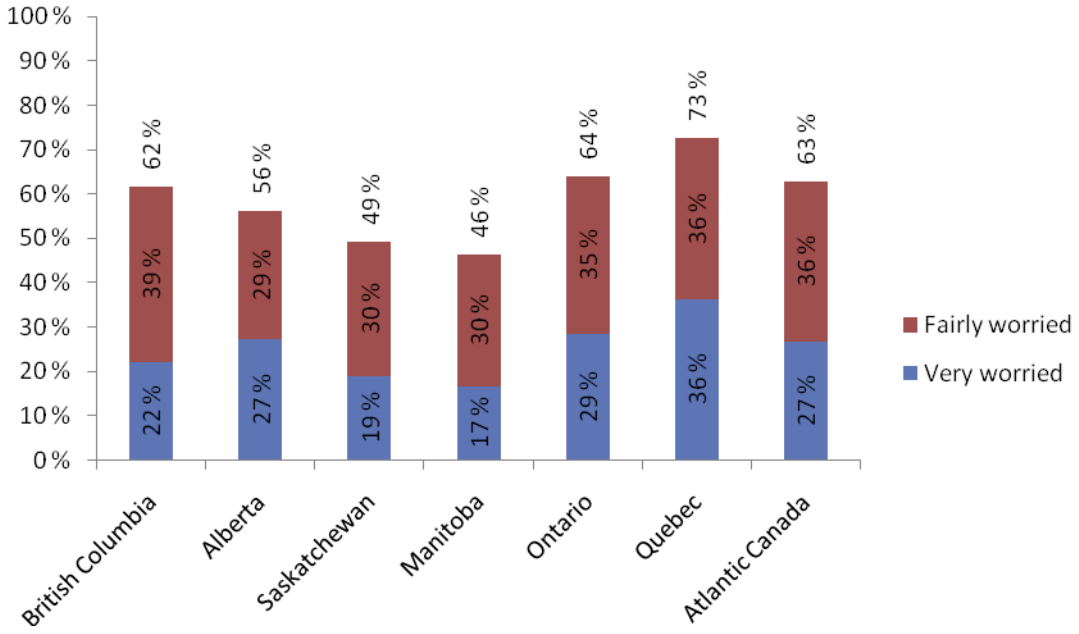
When asked how worried they would be if a CO2 storage site between 1.5 and 3 kilometers below the ground was located within 5 kilometers of their home, a strong majority indicated that they would be very (28%) or fairly (35%) worried.



Q22. If a CO2 storage site between 1.5 and 3 kilometers below the ground was located within 5 kilometers of your home, do you think that you would be…?(Base: n=1548)

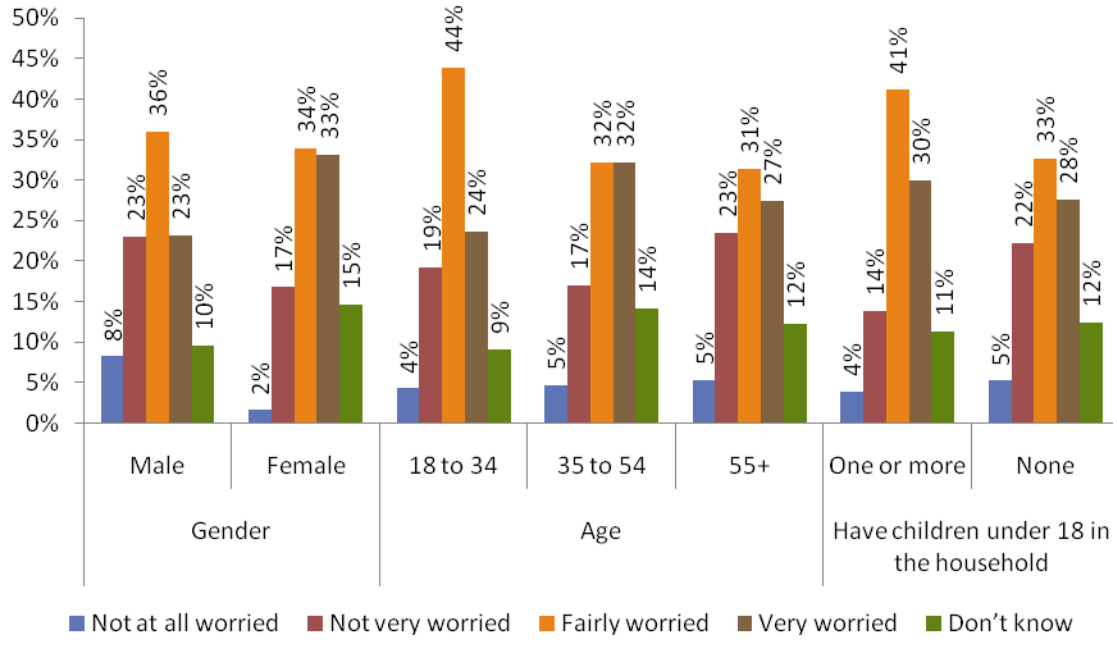
Concerns about CO2 Storage – Regional Analysis

Regionally, respondents in Ontario (29%) and Quebec (36%) are most likely to be very worried about a CO2 storage site located within 5 kilometers of their home, especially compared to respondents in Saskatchewan (19%) and British Columbia (22%).



Concerns about CO2 Storage – Demographic Analysis

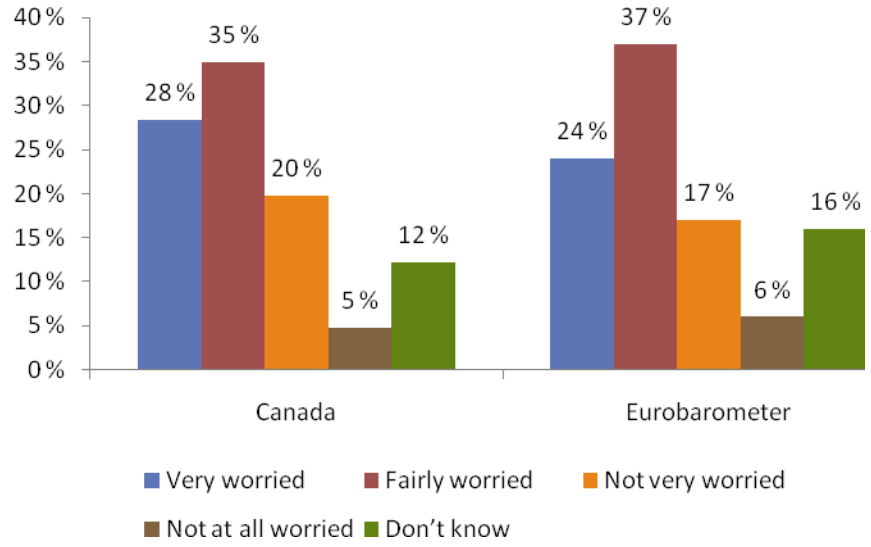
Demographically, many differences were found in terms of respondents' concerns about CO2 storage. Women (33%) are more likely than men (23%), and respondents between the ages of 35 and 54 (32%) are more likely than those between the ages of 18 and 34 (24%) to be very worried. Those who have children under 18 in the household are more likely to be fairly worried (41% vs. 33%) but are no more likely to be very worried (30% vs. 28%).



	Gender		Age			Have children under 18 in the household	
	Male	Female	18 to 34	35 to 54	55+	One or more	None
Not at all worried	8%▲	2%▼	4%	5%	5%	4%	5%
Not very worried	23%▲	17%▼	19%	17%▼	23%▲	14%▼	22%▲
Fairly worried	36%	34%	44%▲	32%▼	31%▼	41%▲	33%▼
Very worried	23%	33%▲	24%▼	32%▲	27%	30%	28%
Don't know	10%	15%▲	9%▼	14%▲	12%	11%	12%

Concerns about CO2 Storage – Comparison with the European Study

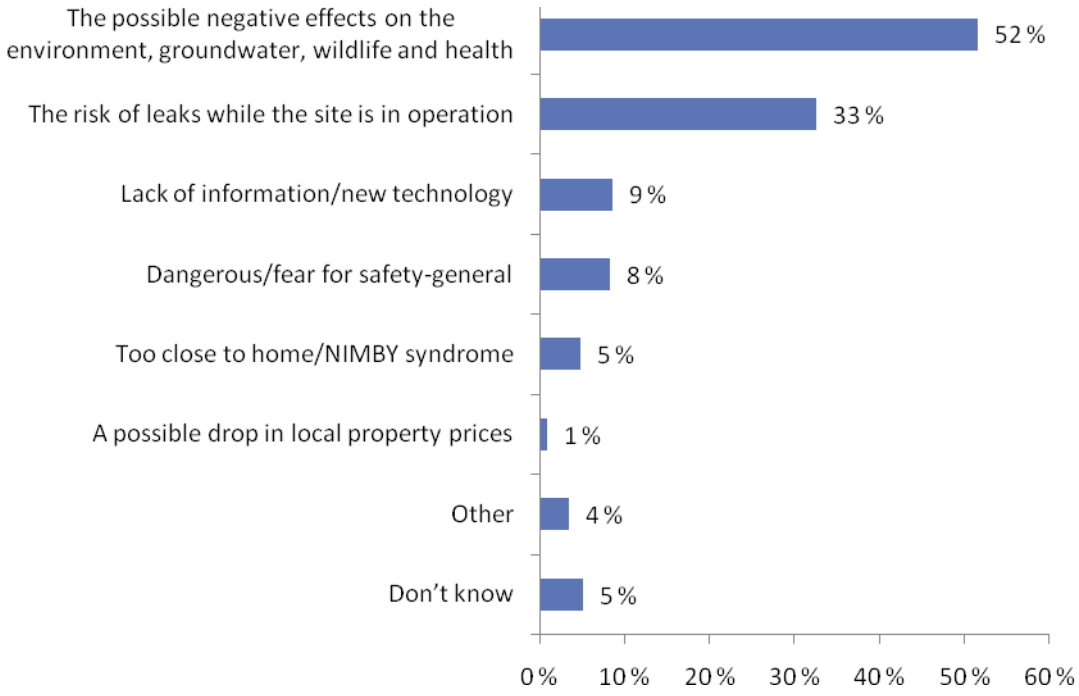
The level of concern among Canadian respondents is comparable to that of residents in Europe. Overall one quarter in each region (28% in Canada and 24% in Europe) would be very worried and one third (35% in Canada and 37% in Europe) would be fairly worried.



*Note that the wording "deep underground" was used in the European study.

Reason for Concern with a CCS Site

A majority (52%) named the possible negative effects on the environment, groundwater, wildlife and health as the main reason for concern. Many also (33%) cited the risk of leaks as a major concern.



Q23. Why would you be worried? (Base: Those who would be worried, n=979)

Reason for Concern – Regional Analysis

Regionally, the most common reason for concern is the potential negative effects on the environment, groundwater, wildlife and health; however, in Quebec, the proportion who cited the risk of leaks while the site is in operation is notably lower compared to the proportion mentioning this reason in other parts of the country.

	British Columbia	Alberta	Saskatchewan	Manitoba	Ontario	Quebec	Atlantic Canada
The possible negative effects on the environment, groundwater, wildlife and health	49%	51%	54%	48%	52%	51%	62%
The risk of leaks while the site is in operation	41%▲	41%▲	43%▲	28%	35%▲	22%▼	37%
Lack of information/new technology	4%	10%	9%	4%	8%	12%	6%
Dangerous/fear for safety-general	9%	6%	6%	12%	8%	11%	3%
Too close to home/NIMBY syndrome	4%	4%	3%	4%	5%	6%	3%
A possible drop in local property prices	1%	2%	1%	0%	2%	0%	0%
The transport of CO2 to the storage site might not be safe	0%	0%	1%	0%	0%	0%	1%
The risk of terrorist attack	0%	0%	0%	0%	0%	0%	1%
None	0%	0%	0%	0%	1%	0%	0%
Other	3%	3%	5%	4%	3%	5%	3%
Don't know	6%	3%	3%	12%	5%	5%	3%
Total	125	91	536	25	379	270	73

Reason for Concern – Comparison with European Study

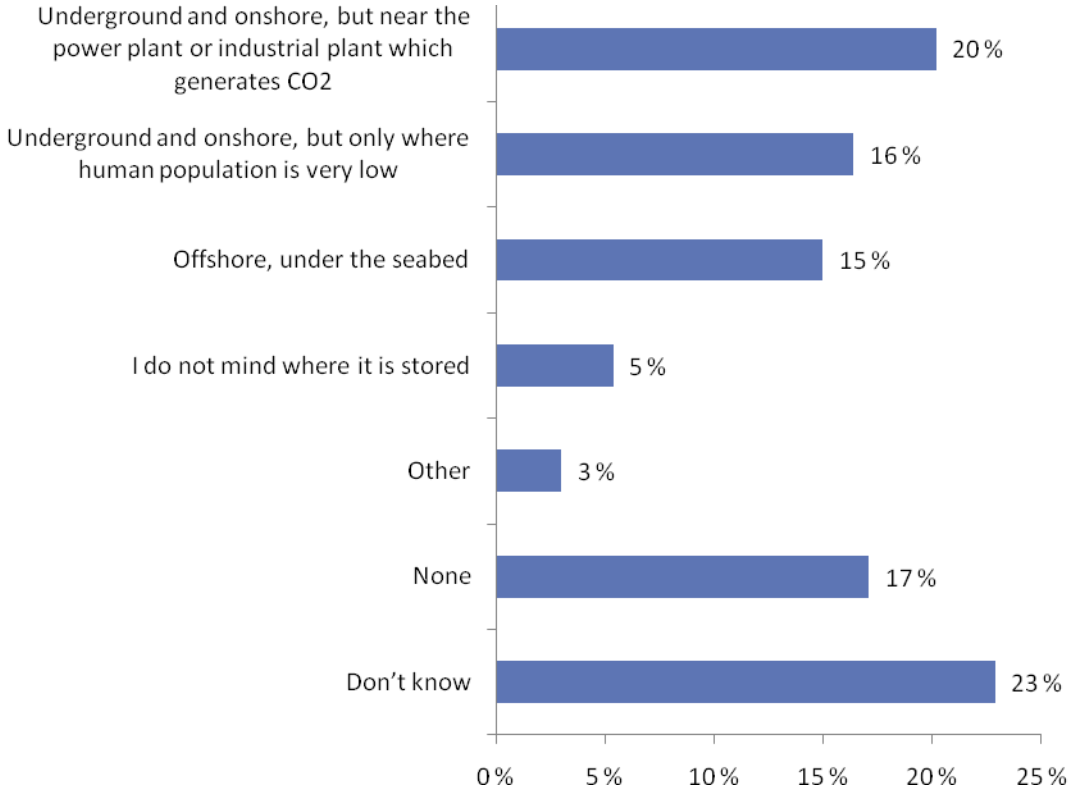
Although the top concern, the possible negative effects on the environment, groundwater, wildlife and health, is the same in both Canada and Europe, many reasons were much more commonly mentioned by respondents in the Eurobarometer study. Risk of leaks was mentioned by a majority (63%) of European respondents compared to about one third (33%) of respondents in Canada. The transport of CO2 to the site (39%), a possible drop in local property prices (16%) and the risk of terrorist attack (14%) were mentioned by more than one in ten in Europe, but were hardly mentioned at all by Canadian respondents.

	Canada	Eurobarometer
The possible negative effects on the environment, groundwater, wildlife and health	52 %	64 %
The risk of leaks while the site is in operation	33 %	63 %
The transport of CO2 to the storage site might not be safe	0 %	39 %
A possible drop in local property prices	1 %	16 %
The risk of terrorist attack	0 %	14 %
Other	4 %	1 %
Lack of information/new technology	9 %	-
Dangerous/fear for safety-general	8 %	-
Too close to home/NIMBY syndrome	5 %	-
Don't know	5 %	2 %

*Please note that these categories were not included in the Eurobarometer study. Mentions under these themes in the Eurobarometer study may be included under "other".

Storage options for CO2

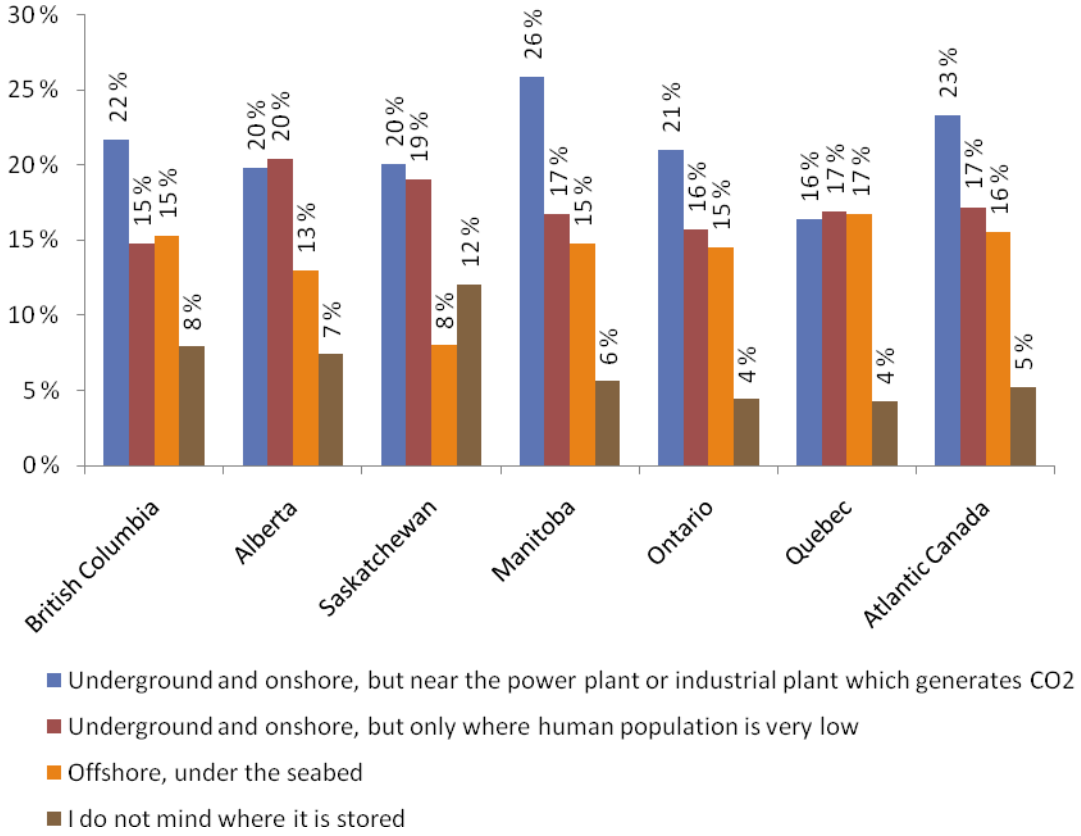
Respondents were asked which storage option of CO2 they prefer from three alternatives. About the same proportion of respondents favoured each of the options. A total of 20% prefer that it be stored underground and onshore, but near the power plant or industrial plant which generates CO2, 16% prefer it be stored underground and onshore, but only where human population is very low, and 15% prefer it be stored offshore under the seabed.



Q24. For future use of CCS in Canada, which of the following storage options of CO2 would you prefer? (Base: n=1548)

Storage Options for CO2 – Regional Analysis

Among respondents in all provinces, those in Saskatchewan are least likely to prefer that CO2 be stored offshore under the seabed (8%). Saskatchewan residents are also most likely not to mind where it is stored (12%).



	British Columbia	Alberta	Saskatchewan	Manitoba	Ontario	Quebec	Atlantic Canada
Underground and onshore, but near the power plant or industrial plant which generates CO2	22%	20%	20%	26%	21%	16%	23%
Underground and onshore, but only where human population is very low	15%	20%	19%	17%	16%	17%	17%
Offshore, under the seabed	15%▲	13%	8%▼	15%	15%▲	17%▲	16%
I do not mind where it is stored	8%	7%	12%▲	6%	4%▼	4%▼	5%
None	15%	17%	17%	15%	15%	22%	16%
Other	3%	3%	3%	0%	3%	3%	3%

Don't know	22%	19%	20%	22%	27%	20%	21%

Storage Options for CO2 – Comparison with European Results

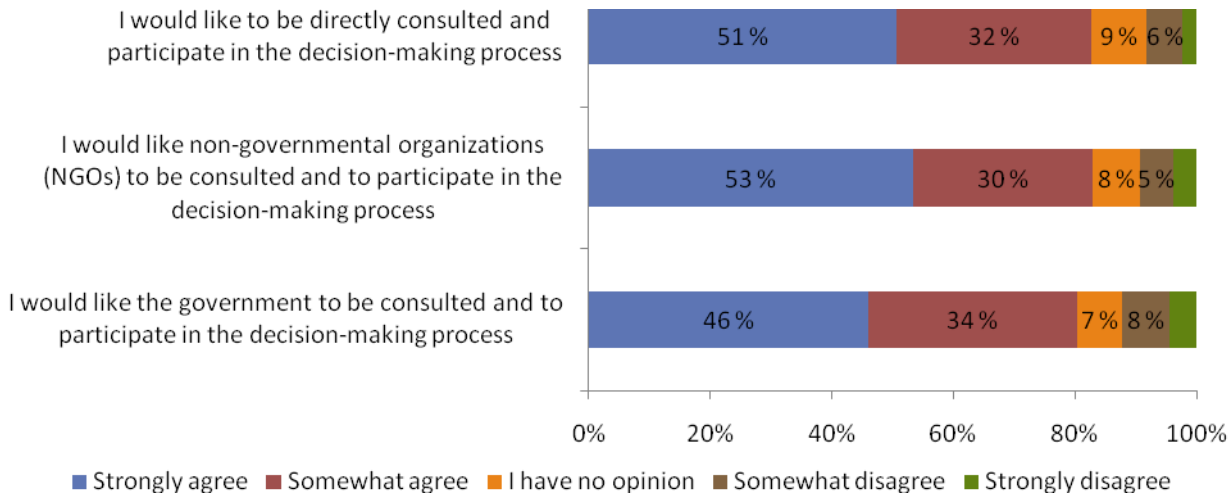
Respondents in Europe are also almost evenly divided on which of the listed options they prefer.

	Canada	Eurobarometer
Underground and onshore, but near the power plant or industrial plant which generates CO2	20 %	20 %
Underground and onshore, but only where human population is very low	16 %	23 %
Offshore, under the seabed	15 %	21 %
Other	3 %	-
None	17 %	13 %
I do not mind where it is stored	5 %	4 %
Don't know	23 %	19 %

*Note that the "other" category was not an option in the Eurobarometer study.

Desired Level of Consultation

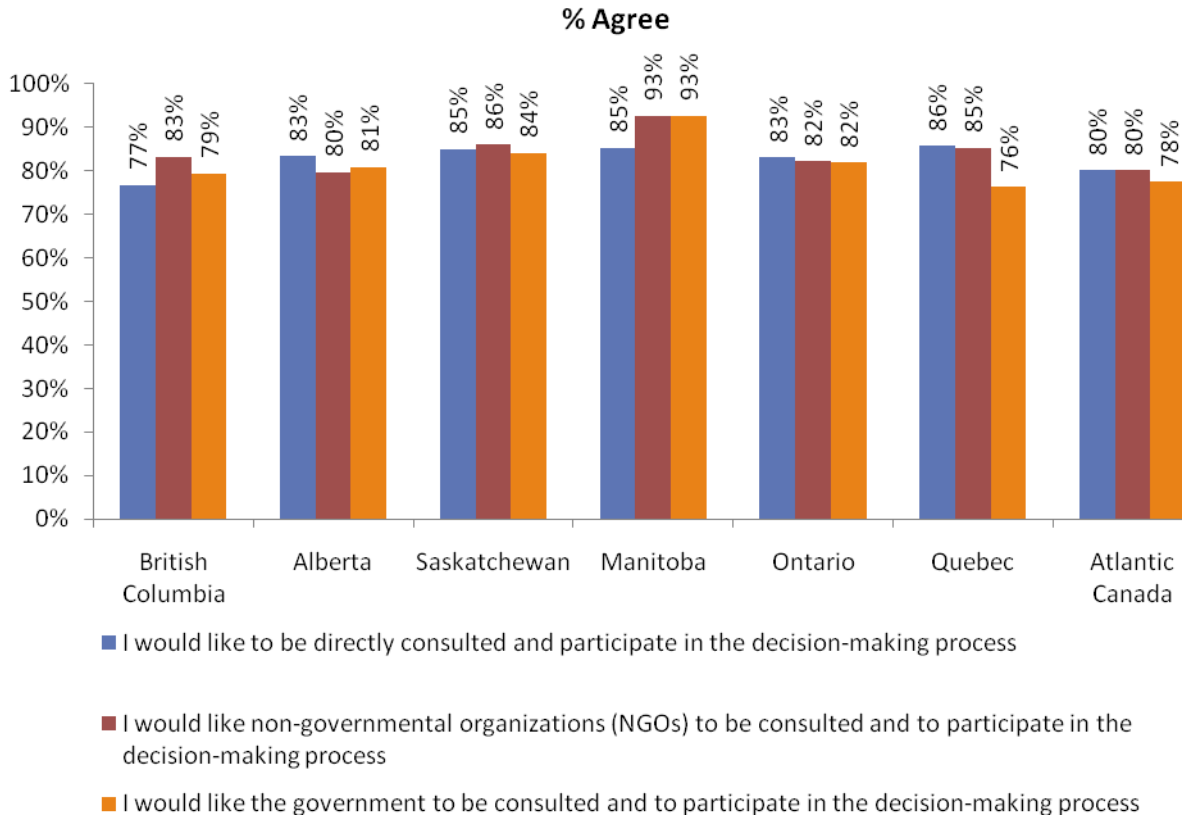
A majority of Canadians agree that they would like to be directly consulted (83%) and participate in the decision-making process, that they would like non-governmental organizations to be consulted and to participate in the decision-making process (83%), and that they would like the government to be consulted and to participate in the decision-making process (80%).



Q25. If an underground CO2 storage site were to be proposed 5 kilometers from your home, how much would you agree or disagree with each of the following statements? (Base: n=1548)

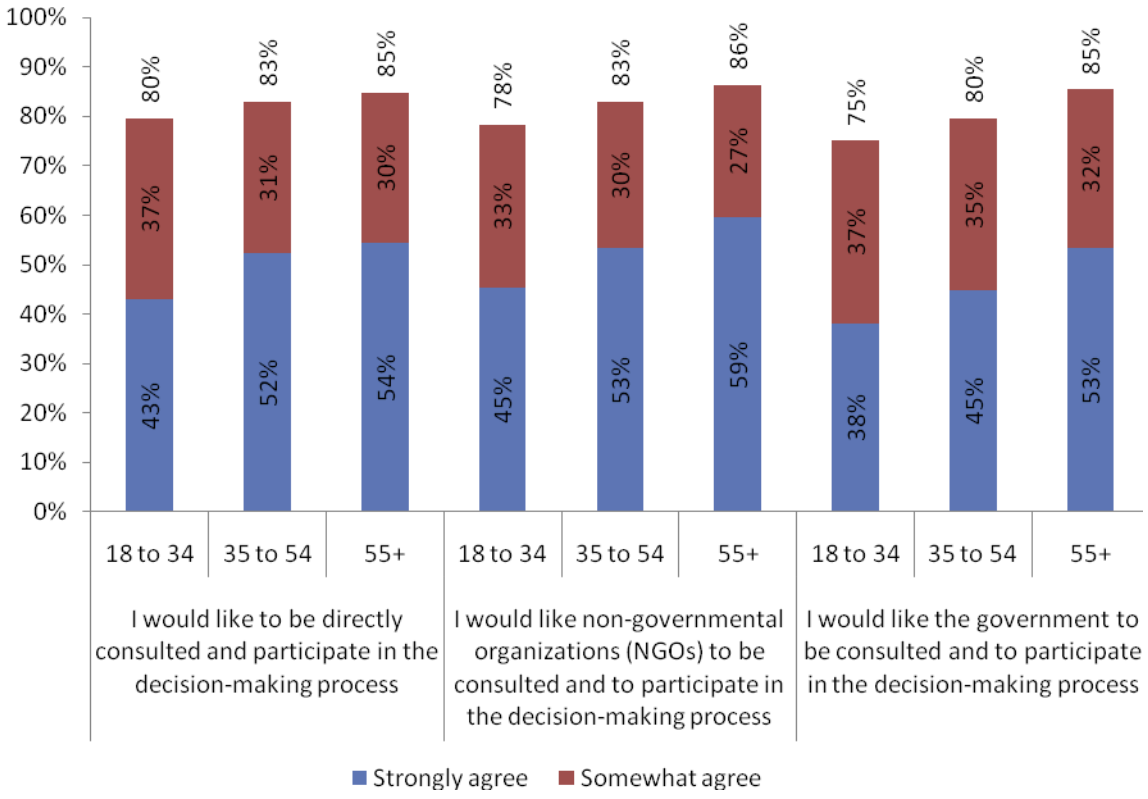
Desired Level of Consultation – Regional Analysis

Regionally, respondents in Quebec are least likely to agree that they would like the government to be consulted as part of the decision make process. Even so, a strong majority of respondents in each province agree that they would like each of the three groups to be consulted during the process.



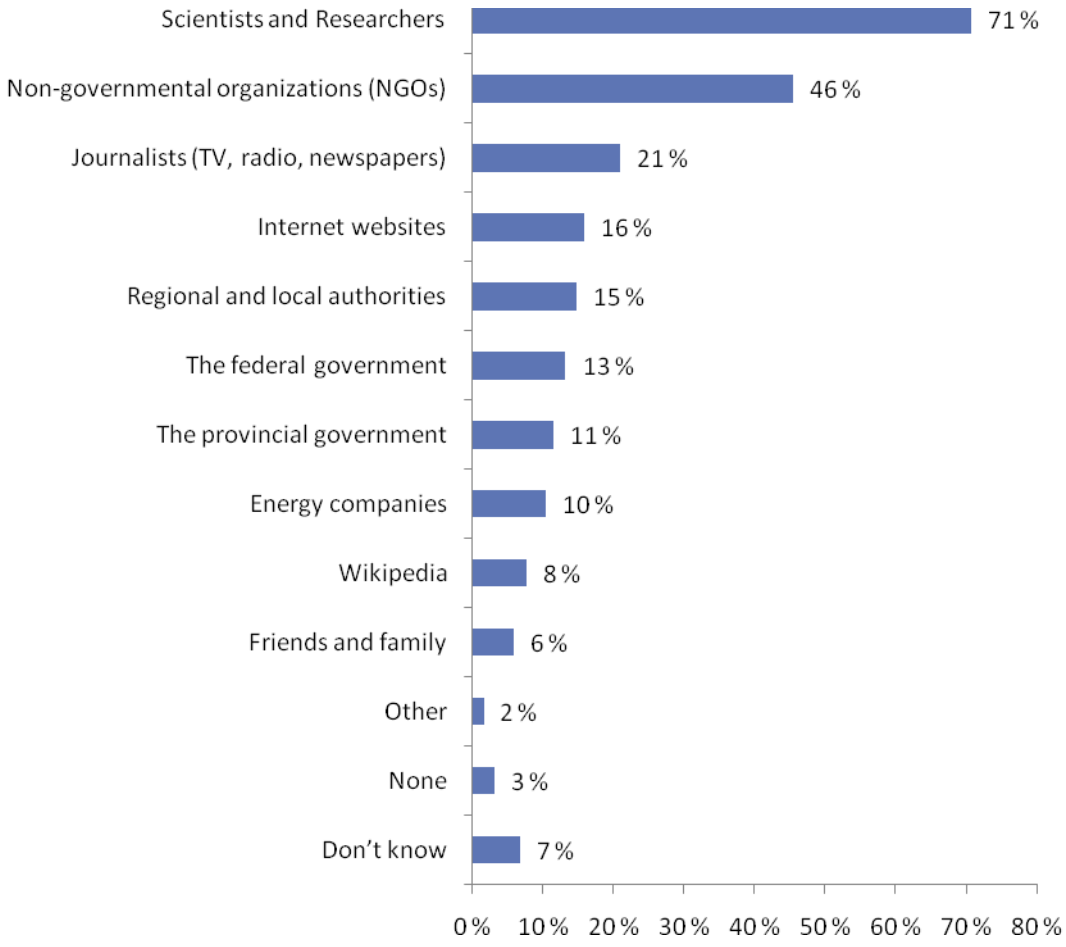
Level of decision making in CCS storage – Demographic Analysis

Older respondents are more likely to strongly agree that they would like to be directly consulted, and that they would like non-governmental organizations and the government consulted in the decision making process.



Trusted Sources of Information about CCS

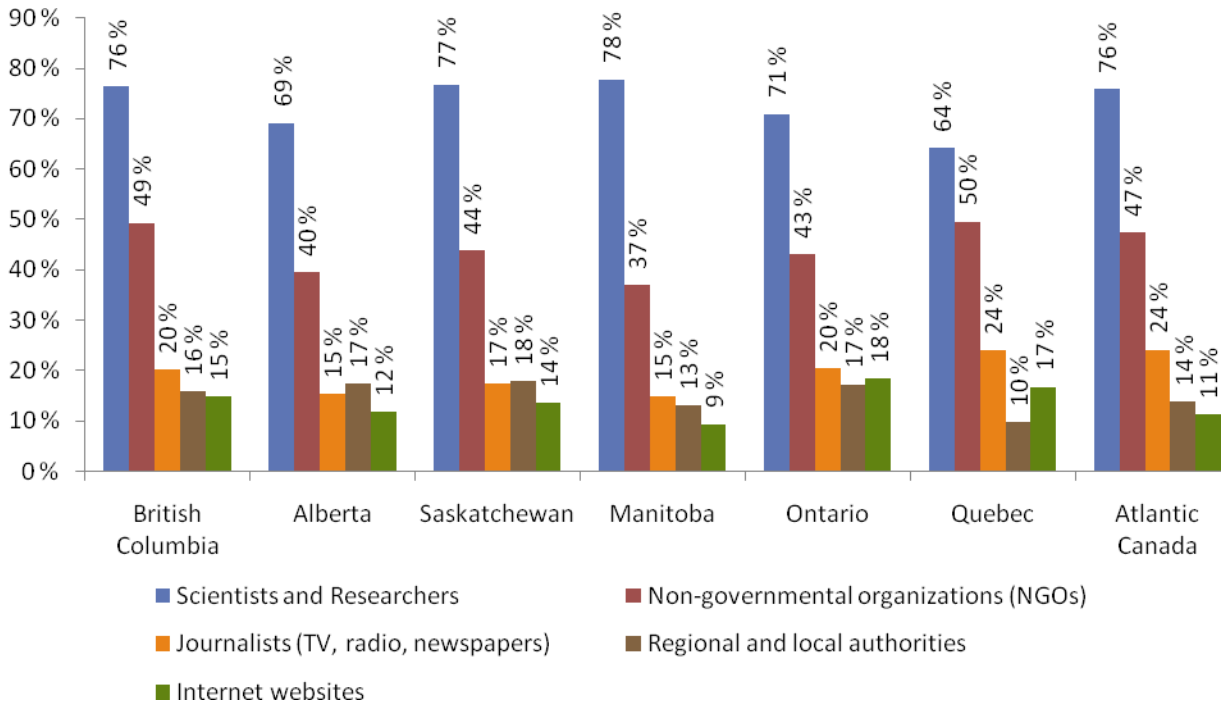
A strong majority (71%) of respondents trust scientists and researchers to give them accurate information about CCS, making them the most trusted of the listed information sources. Non-governmental sources are trusted by just less than one half (46%) and journalists by about one in five (21%). The remainder of the sources, including internet websites (16%), regional and local authorities (15%), the federal government (13%) and the provincial government (11%) are trusted by less than one in six.



Q26. Which of the following would you trust most to give you accurate information about CCS? (Base: n=1548)

Trusted Sources of Information about CCS – Regional Analysis

The top trusted sources, scientists and researchers, and non-governmental organizations, are consistent across all regions of the country. Respondents from Quebec are slightly less likely to consider scientists and researchers (64%) and regional and local authorities (10%) to be a trusted source, compared to those in Saskatchewan.



	British Columbia	Alberta	Saskatchewan	Manitoba	Ontario	Quebec	Atlantic Canada
Scientists and Researchers	76 %	69 %	77 %▲	78 %	71 %	64 %▼	76 %
Non-governmental organizations (NGOs)	49 %	40 %	44 %	37 %	43 %	50 %	47 %
Journalists (TV, radio, newspapers)	20 %	15 %	17 %	15 %	20 %	24 %	24 %
Regional and local authorities	16 %	17 %	18 %▲	13 %	17 %▲	10 %▼	14 %
Internet websites	15 %	12 %	14 %	9 %	18 %	17 %	11 %
The federal government	16 %	12 %	11 %	11 %	16 %	11 %	8 %
Energy companies	10 %	12 %	10 %	6 %	11 %	9 %	11 %
The provincial government	9 %▼	14 %	18 %▲	19 %	11 %▼	11 %▼	8 %
Wikipedia	10 %	6 %	5 %	7 %	7 %	9 %	8 %
Friends and family	5 %	6 %	6 %	6 %	6 %	6 %	9 %
Other	2 %	1 %	3 %	0 %	2 %	2 %	1 %

None	2 %	5 %	3 %	4 %	2 %	5 %	3 %
Don’t know	6 %	9 %	3 %	4 %	7 %	6 %	5 %

Trusted Sources of Information about CCS – Comparison with European Results

As in the Canadian study, respondents in the Eurobarometer study are most likely to trust scientists and researchers (therein named "Universities and research institutions"); however, the proportion who did so was much lower than in the Canadian study (71% vs. 35%).

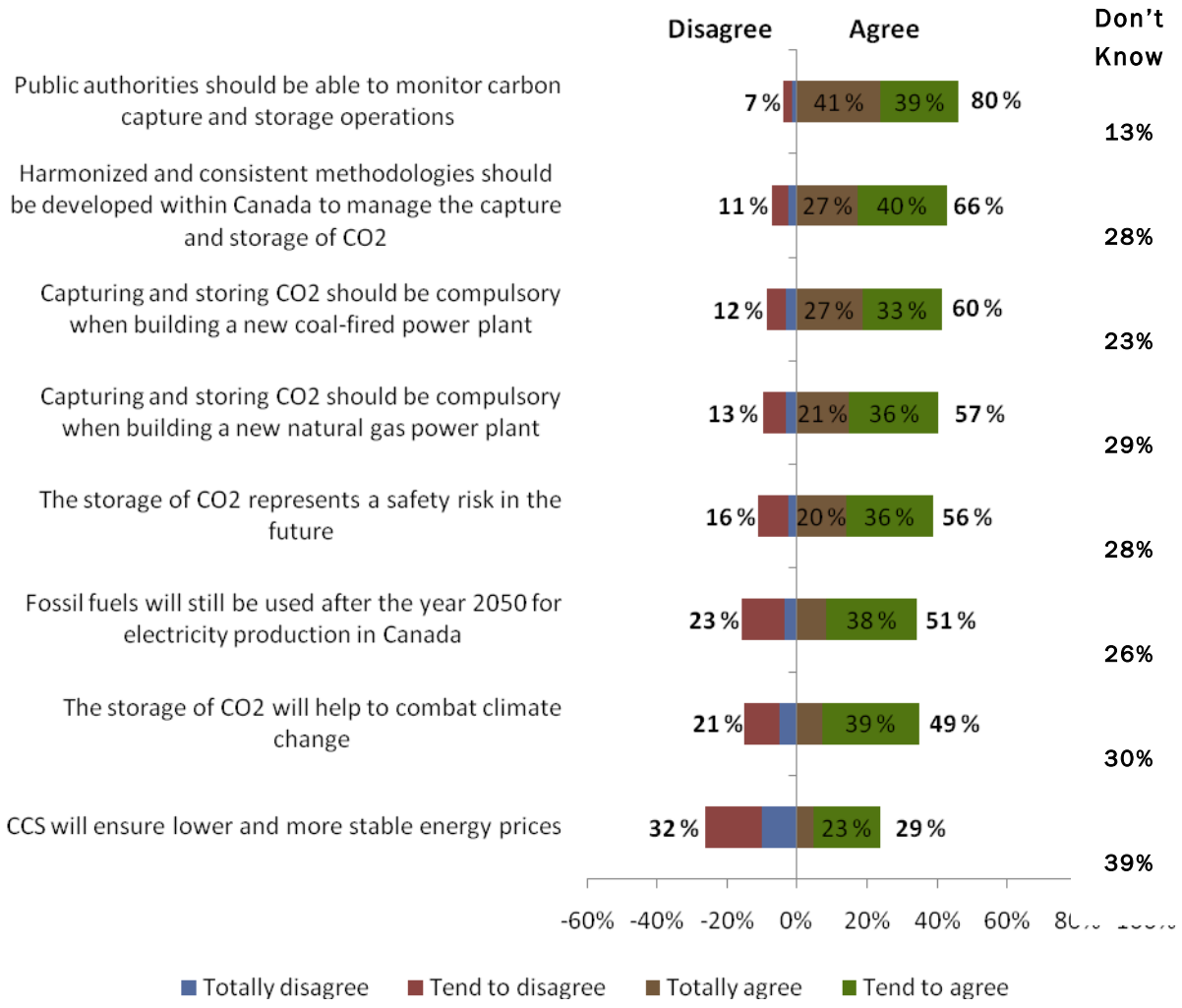
	Canada	Eurobarometer*
Scientists and Researchers**	71 %	35%
Non-governmental organizations (NGOs)	46 %	31 %
Journalists (TV, radio, newspapers)	21 %	24 %
Internet websites	16 %	-
Regional and local authorities	15 %	24 %
The federal government	13 %	20 %
The provincial government	11 %	-
Energy companies	10 %	13 %
Wikipedia	8 %	-
Friends and family	6 %	13 %
Other	2 %	1 %
None	3 %	8 %
Don't know	7 %	5 %

*"The European Union" was also an option presented to respondents in Europe that was not included on the current survey.
**In the Eurobarometer study, this option was presented as "Universities and Research Institutions".

Future use of CCS

Respondents were asked whether or not they agree or disagree with each of a list of eight different statements about CCS. Highest (80%) is agreement that public authorities should be able to monitor carbon capture and storage operations. Many also agree that harmonized and consistent methodologies should be developed within Canada to manage the capture and storage of CO2 (67%) and that capturing and storing CO2 should be compulsory when building a new natural gas (57%) or coal-fired (60%) power plant. Agreement is also fairly common that the storage of CO2 will help to combat climate change (49%).

However, other results show trepidations among respondents. More than one half agree that the storage of CO2 represents a safety risk in the future (56%) and agreement is fairly low that CCS will ensure lower and more stable energy prices (29%).



Q27. Do you agree or disagree with each of the following statements? (Base: n=1548)

Future Use of CCS – Regional Analysis

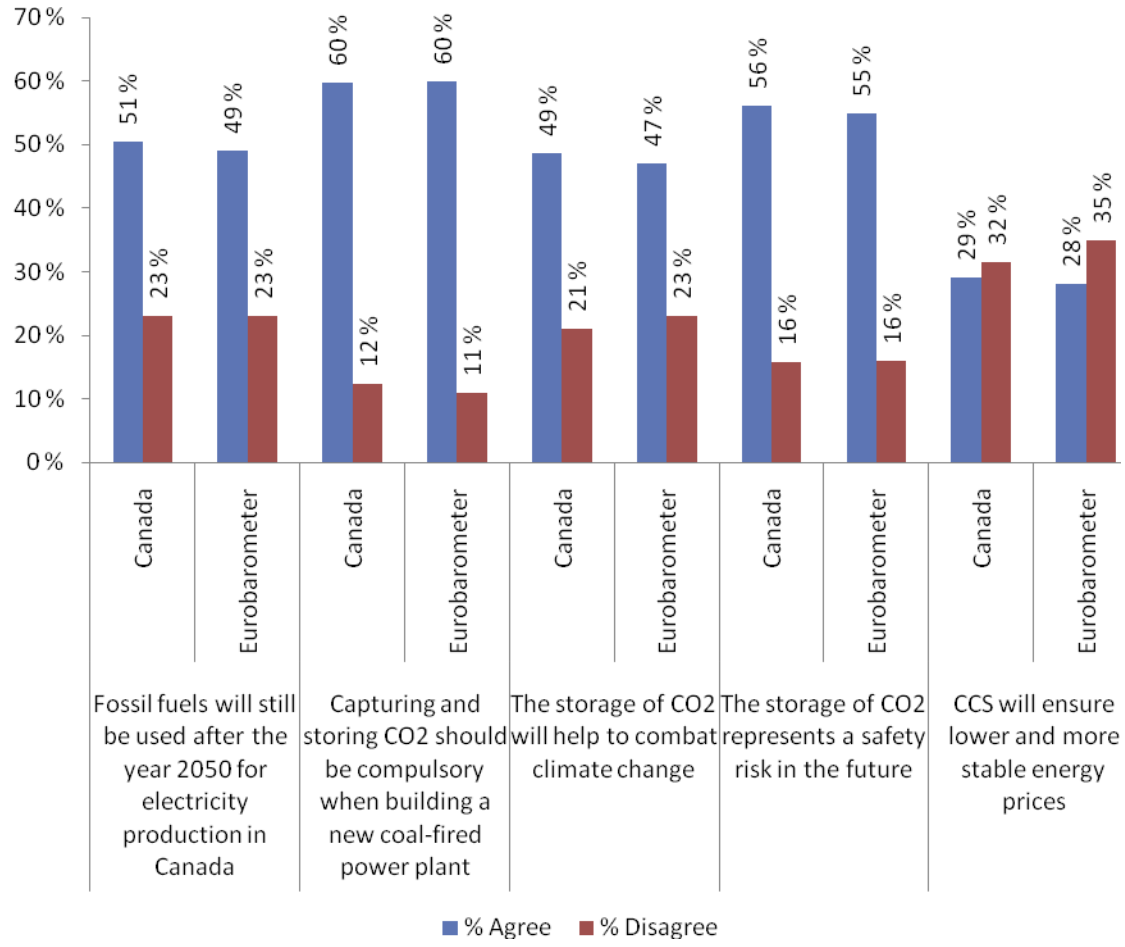
Two thirds (65%) of Saskatchewan respondents agree that fossil fuels will still be used after the year 2050 for electricity production in Canada, compared to a minority of respondents in Quebec (45%), Ontario (49%) and British Columbia (48%).

% Agree	British Columbia	Alberta	Saskatchewan	Manitoba	Ontario	Quebec	Atlantic Canada

Public authorities should be able to monitor carbon capture and storage operations	79%	80%	84%	78%	78%	84%	79%
Harmonized and consistent methodologies should be developed within Canada to manage the capture and storage of CO2	69%	67%	69%	65%	65%	68%	61%
Capturing and storing CO2 should be compulsory when building a new coal-fired power plant	56%	61%	63%	61%	59%	64%	54%
The storage of CO2 represents a safety risk in the future	53%	54%	51%	57%	57%	58%	60%
Capturing and storing CO2 should be compulsory when building a new natural gas power plant	56%	57%	58%	61%	56%	62%	51%
Fossil fuels will still be used after the year 2050 for electricity production in Canada	48%▼	58%	65%▲	59%	49%▼	45%▼	56%
The storage of CO2 will help to combat climate change	46%	51%	45%	50%	47%	53%	46%
CCS will ensure lower and more stable energy prices	29%	24%	19%▼	33%	30%▲	32%▲	25%

Future Use of CCS – Comparison with European Results

In comparison with the European results, agreement among Canadian residents is nearly identical for the five areas.



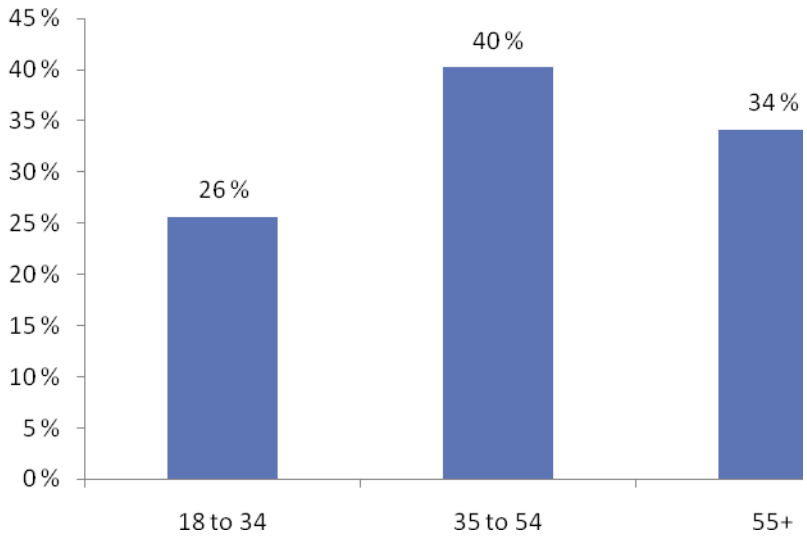
*Please note the Eurobarometer study contained only these five statements. Don't know responses are included in the base but not shown on the chart.

Demographic Questions

Gender

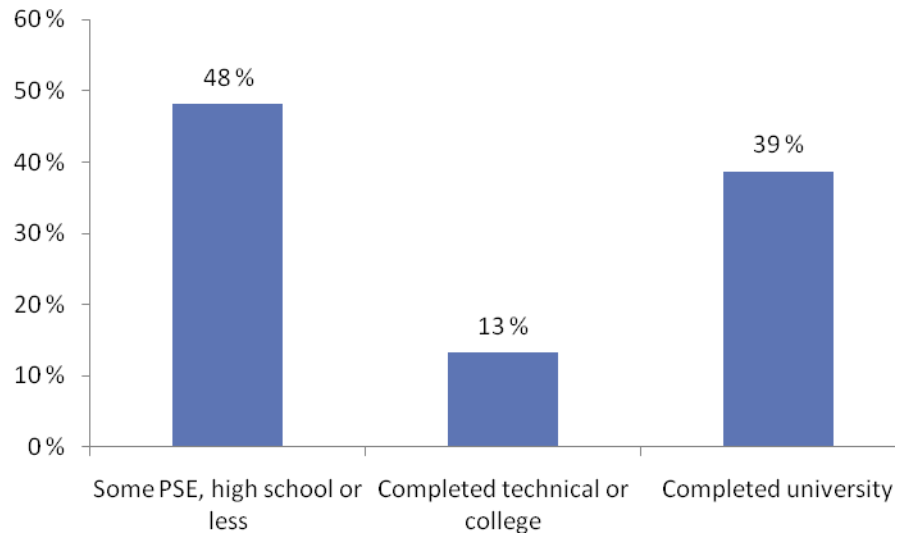
Q2. Please indicate your gender (Base: n=849)

Age



Q1. Into which age range do you fall? (Base: n=849)

Education

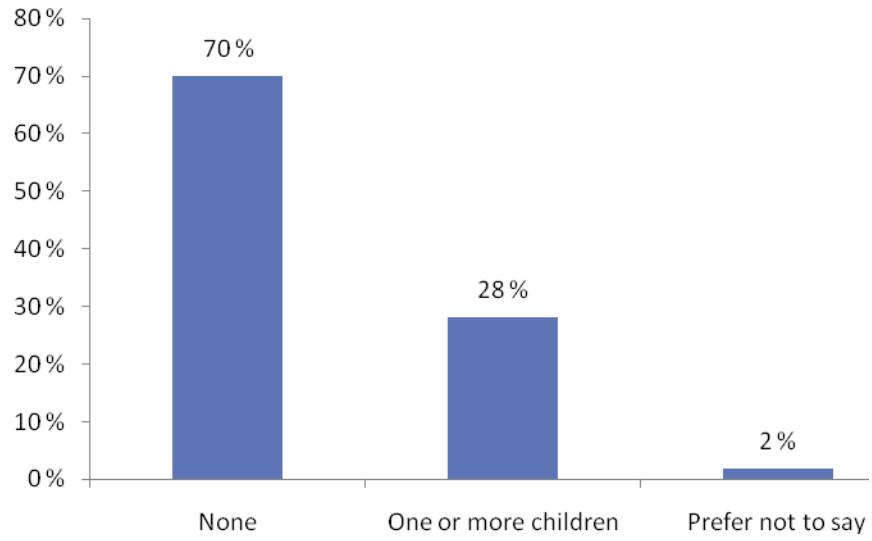


3. What is the highest level of education you have achieved? (Base: n=849)

Region

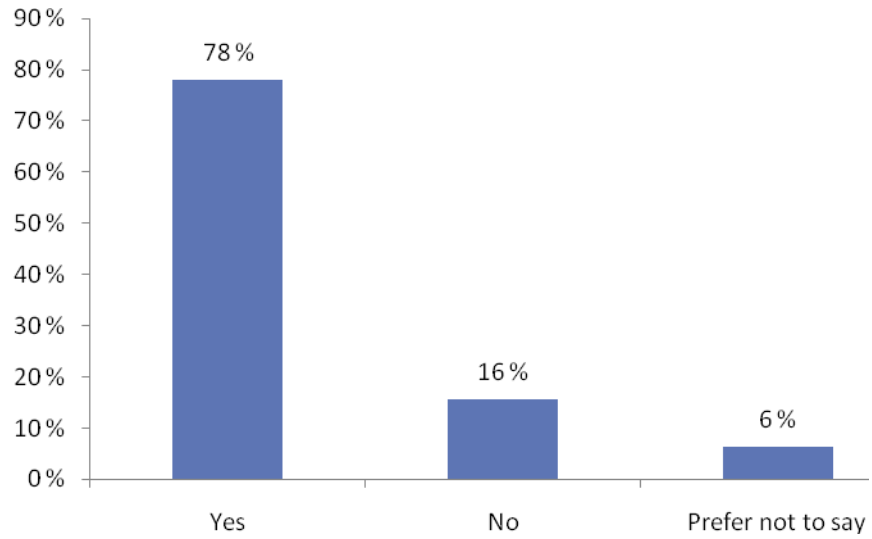
	Representative Sample		Population	Booster Sample
	Count	Percent		
British Columbia	203	13%	13%	0
Alberta	162	10%	10%	0
Saskatchewan	47	3%	3%	849
Manitoba	54	3%	4%	0
Ontario	594	38%	38%	0
Quebec	372	24%	24%	0
Atlantic Canada	116	7%	7%	0
Total	1548	100%	100%	0

Children Under 18 in the Household



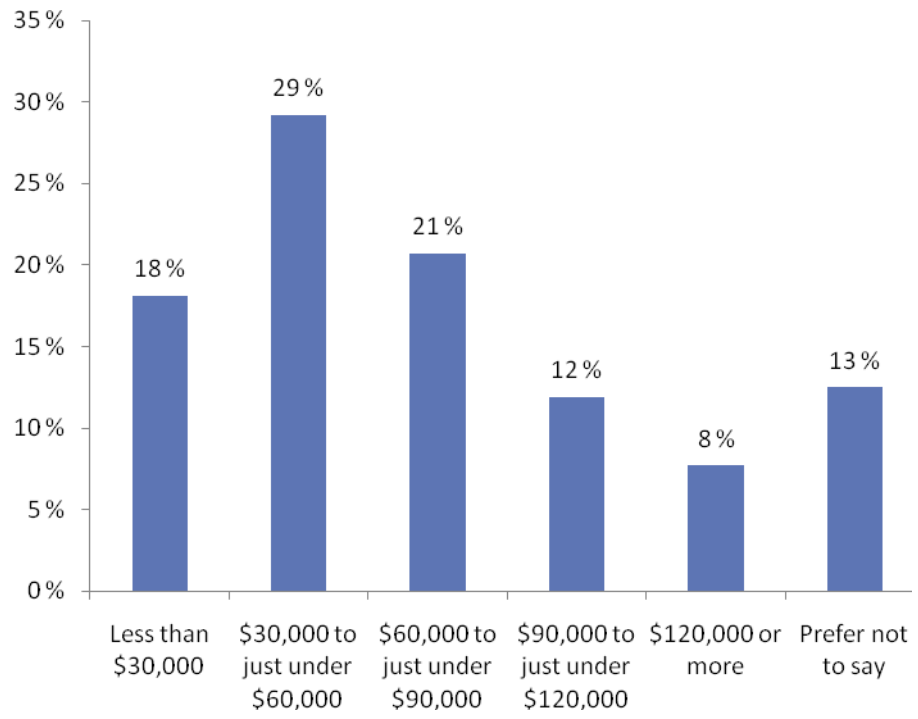
28. How many children under the age of 18 live in your household? (Base: n=849)

Voting in the Recent Federal Election



29. Did you vote in the most recent federal election, held in April of 2011? (Base: n=849)

Annual Household Income



Q30. What is your annual household income before taxes and deductions? (Base: n=849)