



ACEE Alberta Council for Environmental Education

ADVANCING ENVIRONMENTAL EDUCATION IN ALBERTA

2020 Youth Polling Environment, Energy, & Climate Literacy

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June 15, 2020



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### **PROJECT OVERVIEW**

The Alberta Council for Environmental Education (ACEE) commissioned Leger to conduct a survey of Alberta youth (aged 15 to 24) pertaining to their awareness and understanding of key environmental issues, and to further explore youth knowledge and attitudes in relation to climate and energy literacy. Additionally, the current study was designed to provide a comparison to the 2010 results from ACEE's *Environmental Behaviours and Alberta Youth* survey.

### The primary objectives include:

- An analysis of knowledge and attitudes related to climate and energy literacy
- A comparison of key metrics gathered in the ACEE 2010 youth survey - Environmental Behaviours and Alberta Youth

In addition to these objectives, the current work was designed to:

- Evaluate the degree to which Alberta youth practice stewardship of the environment;
- Assess the environmental and energy literacy of Alberta youth;
- Assess attitudes and values regarding the environment among Alberta youth;
- Identify key segments within Alberta youth through a segmentation analysis; and,
- Update the baseline established in 2010 by exploring in greater depth a number of environmental topics which are more prevalent in 2020 than they were ten years ago.



### **SURVEY METHODS**

### **METHODS**

The Environment, Energy, and Climate Literacy survey was conducted online between February 6 and February 29, 2020. Leger's Alberta panel sample was used to randomly recruit youth participants. For youth under 18 years of age, there was a multistage design beginning with parental consent, then participation of the youth respondent through a unique link (URL).

### **SAMPLE**

A total of 500 online surveys were completed:

- 15 to 17 year-old respondents: n=187
- 18 to 24 year-old respondents: n=313

For the sake of analysis and comparisons to 2010, the sample was further broken out by:

- High school students: n=207
- 18 to 24 year-old respondents: n=291

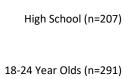
As the sample over-represents those youth aged 15 to 17 years, final data were weighted by age and gender, as well as region in Alberta based on the 2016 Canadian Census data. The margin of error for a probability sample of 500 is ±4.38%, 19 times out of 20.

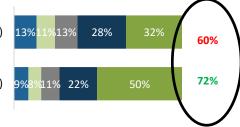
### STATISTICAL COMPARISONS

For ease of comparison to the 2010 report, results were broken out by high school and 18 to 24 year-old respondents. Throughout the report:

- Any direct comparisons to the 2010 report are indicated in parentheses beside the question.
- Statistically significant differences between high school students and 18 to 24 year-old respondents are identified through bold, coloured text. For example:

We need to move quickly from our dependence on fossil fuels to a more diversified blend of energy including renewables such as solar and wind





 The current report also discusses statistically differences by gender and region of the province. As these breakdowns were not provided in the 2010 report, there are no comparisons made on these demographics to the earlier report.





### STATE OF ALBERTA'S ENVIRONMENT

Perceptions of the state of Alberta's current environment are generally positive among youth. That said, 18 to 24 year-old respondents gave a substantially lower rating in 2020 when compared to the 2010 ACEE Environmental Behaviours and Alberta Youth survey. Despite the positive perceptions regarding the current state of the environment, half of youth believe that Alberta's environment will worsen over the next 10 years, while only two in ten believe that the environment will improve during this time.

Males rate the state of Alberta's environment more positively than females, and females hold a somewhat more pessimistic view of the future of the province's environmental state. Throughout the survey there is strong evidence that females are more concerned than males in relation to climate change and are more likely to be involved in direct action to support a movement away from carbon-based energy production and consumption.

# KNOWLEDGE RELATED TO CLIMATE, ENERGY, AND THE ENVIRONMENT

In general, youth are more aware of environment and energy topics related to Alberta than what is happening beyond the provincial borders. Areas where knowledge could be improved include:

· Global climate change, including causes of

climate change, actions, and solutions

- Actions being taken by other countries to reduce climate change
- Action being taken by the oil and gas industry to reduce its carbon footprint
- Sources of energy production outside of Alberta
- Uses of oil beyond transportation
- Uses of natural gas beyond home heating

Females are more likely than males to correctly identify the sources of climate change as carbon dioxide and other greenhouse gasses. This is consistent with results showing males are less likely to believe that climate change is caused by human activity, and more likely to be caused by naturally occurring events. Males perceive their level of knowledge of what the oil and gas industry is doing to prevent climate change is greater than that of females. They are also more aware of sources of energy production in Canada as a whole.

In 2010, 38% of youth 18 to 24 were knowledgeable about global climate change. In 2020 this has increased to 54% (+16 percentage points) for this age group. There was no significant change in high school students' knowledge of global climate change during this time (43% in 2010 vs. 44% in 2020).







### ATTITUDES RELATED TO CLIMATE, ENERGY, AND THE ENVIRONMENT

Nearly seven in ten high school students, and six in ten youth 18 to 24 are worried about their future as a result of climate change. This concern is significantly greater among female respondents. There is also greater concern about climate change among youth living in Edmonton and Calgary, than youth from the rest of Alberta. For the majority of youth (seven in ten), hope lies in hearing about solutions to environmental problems, a feeling which is strongest among female respondents.

While half of respondents indicated they would be willing to make big changes in their lifestyle to help solve climate change, most youth believe climate action is the responsibility of government (both federal and provincial), as well as industry. Youth consider themselves and the rest of the general population as having the lowest level of responsibility for climate action. Interestingly, there is a dichotomy between responsibility and trust; while youth feel that responsibility for climate action is highest with government and industry, youths' level of trust in these groups when it comes to receiving information about climate, energy, and the environment is particularly low. When if comes to environmental performance, a higher percentage of males than females provide a positive rating of the oil and gas industry, and government.

Eight in ten youth believe it is possible to have a strong economy in Alberta while protecting the environment, a belief which has dramatically increased since 2010 (+23 points for high school students and +29 points for youth 18 to 24).

Youth recognize there is a relationship between the economy and the environment. Most youth are worried that moving away from fossil fuels will result in job losses in their community. This fear is greatest among youth living in parts of the province outside of Edmonton and Calgary.

Males have a stronger belief than females that the Canadian oil and gas industry is amongst the most environmentally responsible on this planet. This positive perception of the industry is also higher among youth living outside of Edmonton and Calgary. Males are also less inclined than females to believe that we need to move quickly from our dependence on fossil fuels.

### **SOME YOUTH EXPRESS APATHY**

While most youth feel their actions will make a difference, and are concerned about climate change and the environment, there remains a notable number of youth who do not share these views. One-fifth of high school students feel their actions will not make a difference in relation to environmental protection, and one-third of youth 18 to 24 feel their actions will not make a difference, an increase of 17 points since 2010. Twenty percent of high school students are not concerned about the environment, an increase of 11 points over 2010. Youth 18 to 24 by contrast show a lower proportion who are not concerned about the environment at 10% which has not changed since 2010.

While a majority of youth are convinced climate change is caused by human activity, almost one-quarter of high school students are not convinced this is the case. By contrast, ten percent of youth 18 to 24 are also not convinced climate change is caused by human activity. More than twice as many males as females are not convinced human activity has any bearing on climate change.

### **BEHAVIOUR**

Albertan youth believe their own personal performance in relation to Alberta's environment is quite positive, while they perceive the performance of the people of Alberta as a whole to be less impressive.

When examining the actions youth have taken to protect the environment, a majority have purchased fewer items from plastic, purchased used items, and turned down the heat in their home. In part this is a function of what youth feel they can reasonably do in relation to their part in reducing climate impact. A relatively small percentage of Alberta youth have participated in a rally or protest about climate change (5% high school students and 13% youth aged 18 to 24). Invariably, females indicate a higher level of commitment than males to making lifestyle changes in relation to the environment.

Just over half of high school students and youth 18 to 24 believe they can do more to protect the environment. Four in ten high school students and six in ten youth 18 to 24 are willing to make big changes in their lifestyle to help solve climate change (e.g., no driving or flying, purchasing less new materials).

The 2010 ACEE Environmental Behaviours and Alberta Youth survey asked a series of questions in relation to barriers and actions associated with youth involvement in environmental stewardship. Many of these questions were repeated in 2020. When it comes to protecting the environment, youth identify the top barriers as not knowing what to do, a belief that they are already doing all they can, and that it costs too much. This aligns with the 2010 finding when the top barriers emerged as a lack of knowledge for high school students, while time and cost were the biggest barriers for 18 to 24 year-olds.





### **EDUCATION**

Youth tend to believe that it is important to address climate change in the classroom. About two in ten high school students (21%) and youth 18 to 24 (19%) indicate they view climate change as too controversial to be discussed in the classroom. This is similar to the national findings in <u>Canada, Climate Change and Education</u>:

Opportunities for <u>Public and Formal Education</u><sup>1</sup> where 19% of students indicated climate change is too controversial.

When indicating what topics they are most interested to learn about, the majority of youth placed a large emphasis on learning about solutions and alternative forms of energy. This supports the notion that many youth understand that action needs to be taken but they themselves simply do not know enough about what they can do on an individual level. Few youth (about two in ten) feel that discussing climate change in classrooms is too controversial. Females rated importance of learning about these topics higher than males. There is also higher importance placed on learning about these topics among youth in Edmonton and Calgary than youth in the rest of the province.

Specifically, youth agree most strongly that schools should teach about:

- how technology is changing the way energy is produced
- solutions to pollution and waste
- solutions to energy and environment
- solutions to climate change

### **TOPICS OF INTEREST**

Youth were asked to rate their level of interest in topics related to climate, energy, and the environment. The topics of strongest interest include:

- alternative forms of energy
- technological solutions to climate change
- how youth can reduce their carbon footprint
- how climate change can impact different ecosystems
- the economic impacts of environmental issues

### **COMFORT WITH CONVERSATIONS**

Youth are most comfortable discussing energy, environment, and economic topics with their family and friends compared with other conversation partners. Youth feel slightly less comfortable talking to their teachers about topics such as energy, environment, and the economy, and least comfortable talking with other adults. There are differences by gender, with males being more comfortable than females speaking with teachers, and other adults with respect to energy topics and the Alberta economy. Youth living outside of Edmonton and Calgary are also more comfortable speaking with family about Alberta's economy.

1. Field, E., Schwartzberg, P., & Berger, P. (2019). Canada, Climate Change and Education: Opportunities for Public and Formal Education (Formal Report for Learning for a Sustainable Future). North York, Canada: York University Printing Services.



# Perspectives on the Environment

Perceptions of the overall quality of Alberta's environment are positive, although there has been a substantial decrease in ratings surrounding the overall quality of the environment amongst 18 to 24 year-old respondents between 2010 and 2020 (-22 points since 2010).

- In 2020, more than one-half of high school students (57%) and 18 to 24 year-old respondents (55%) provided favourable ratings of the current Alberta environment.
- Compared to 2010, 18 to 24 year-old respondents provided substantially more "fair" (38% in 2020 vs. 21% in 2010) and "poor" (13% in 2020 vs. 2% in 2010) ratings when considering the quality of Alberta's environment.

High school students and 18 to 24 year-old youth are somewhat pessimistic about their future as it relates to the environment, with 45% of high school students and 61% of 18 to 24 year-old youth indicating that Alberta's environment will worsen in the next 10 years.

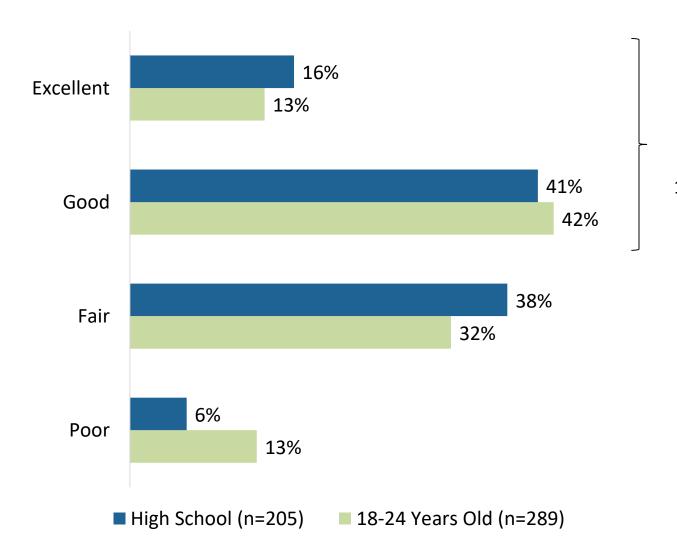
- Compared to 2010, youth aged 18 to 24 in 2020 provided a considerably more pessimistic outlook (61% in 2020 vs. 43% in 2010).
- Overall, youth aged 18 to 24 were far more pessimistic when compared to high school students.
- A higher percentage of males (21%) than females (7%) rate Alberta's environment excellent.





### **Perceptions of Alberta's Environment Today**

Q1. How would you rate the overall quality of the environment in Alberta today?



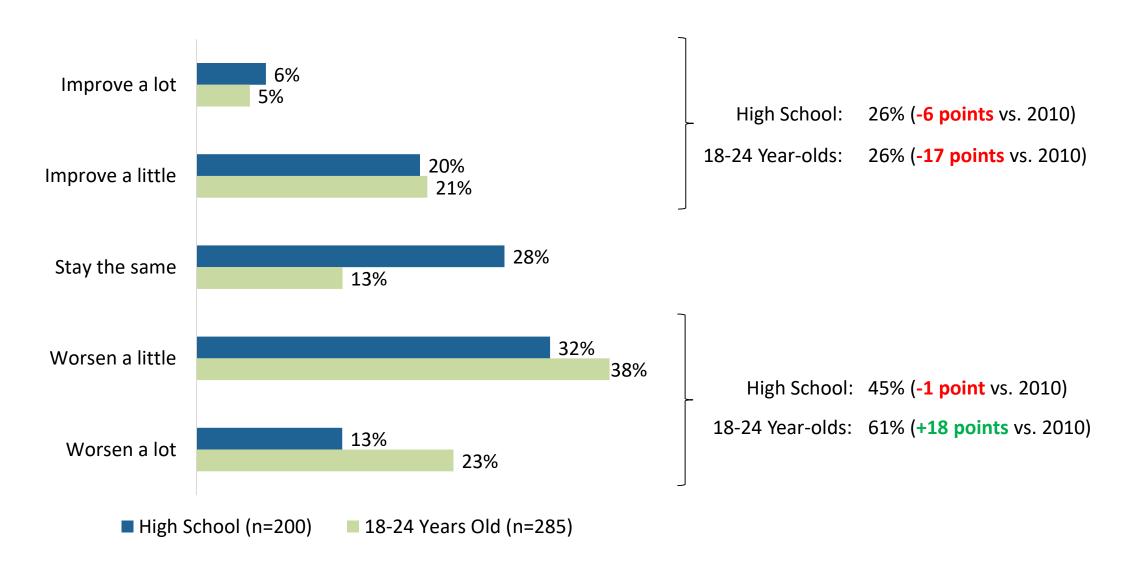
High School: 57% (-2 points vs. 2010)

18-24 Year-olds: 55% (-22 points vs. 2010)



### Perceptions of Alberta's Environment In the Future

Q2. Looking into the future ten years from now, do you think that the overall state of Alberta's environment will...









Nearly nine in ten high school students (89%) feel they are personally doing a good job when it comes to protecting the environment. By contrast, the performance of all Albertans is rated much lower, with less than two-thirds (63%) of high school students rating the performance of Albertans as somewhat good (44%) or very good (19%). A majority of youth 18 to 24 also rate their own performance as good; notably, the gap between ratings of their own performance and that of and other Albertans is much larger than it is for high school students. Eighty-four percent of youth 18 to 24 say they are doing a good job, with 26% indicating that they are doing a very good job with respect to their performance in relation to the environment. By contrast, only 55% of 18-24 year-olds rate the performance of Albertans in general as good.

Albertan youth (both high school students and those aged 18-24) tend to have fairly negative perceptions of the performance of the Alberta provincial government and the oil and gas industry. Specifically, one-quarter of high school students (26%) and roughly one-third of youth 18 to 24 (35%) indicate that the provincial government is doing a very poor job, while 20% of high school students and 28% of youth 18 to 24 indicate the oil and gas industry in Alberta is doing a very poor job. Female respondents consistently rate government and industry lower than males:

- City or local government (very good performance; 19% males, 10% females)
- The renewable energy industry in Alberta (very good performance; 25% males, 15% females)
- The electricity producing industry in Alberta (very good performance; 23% males, 13% females)
- The oil and gas industry in Alberta (very good performance; 28% males, 16% females)
- The current Alberta government (very good performance; 12% males, 5% females)

A smaller percentage of youth in Edmonton and Calgary rate the performance of the oil and gas industry as very good (17%) when compared with youth residing elsewhere in the province (29%).

Youth recognize there is a relationship between the economy and the environment. Two-thirds (66%) of high school youth and nearly six in ten youth 18 to 24 (57%) are worried that moving away from fossil fuels will result in job losses in their community. Thirty-seven percent of youth living outside of Edmonton and Calgary strongly agree they are concerned that moving away from fossil fuels will result in job losses in their community, compared to 24% within Edmonton and Calgary. Approximately one-half of respondents believe Canadian oil and gas is amongst the most environmentally responsibly produced on the planet (56% of high school students and 49% of those aged 18 to 24). This perception is strongest among youth who live outside of Calgary and Edmonton, where 35% strongly agree that Canadian oil and gas is amongst the most environmentally responsibly produced on the planet, compared with 22%. A higher percentage of male respondents also believe that Canadian oil and gas is amongst the most environmentally responsibly produced on the planet (strongly agree; 35% males, 21% females).

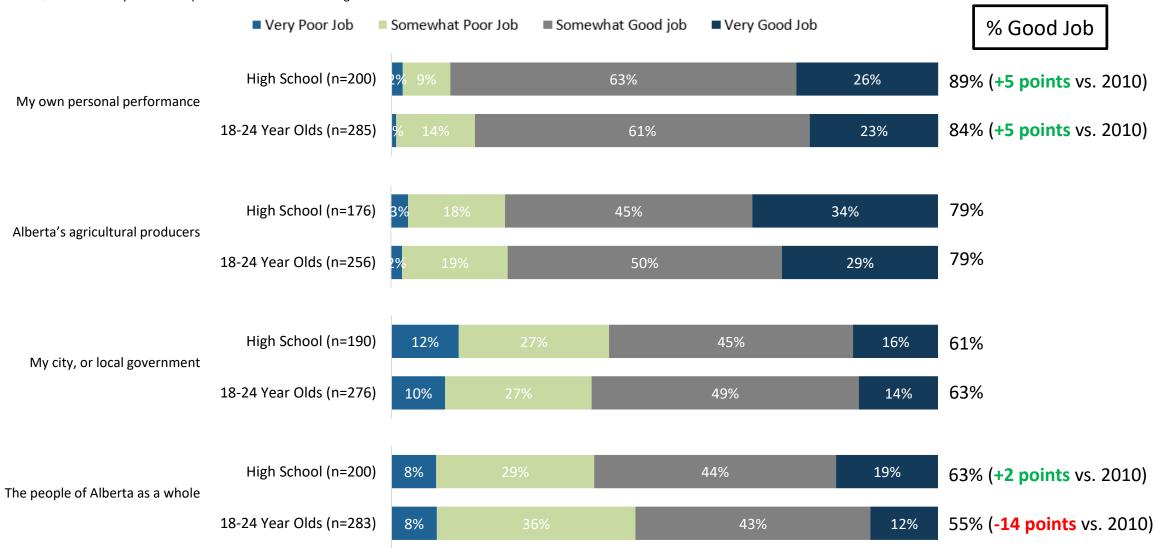
There is a belief held by the majority of Albertan youth (60% of high school students and 72% of youth 18 to 24) that we need to move quickly from our dependence on fossil fuels to a more diversified blend of energy including renewables such as solar and wind. Males are also less inclined to believe we need to move quickly from our dependence on fossil fuels (37% of males strongly agree compared with 50% females).

Just over one-half (55%) of high school students believe they can see the impacts of climate change around them, while youth 18 to 24 are even more likely to recognize these impacts (70%).



### Performance in Relation to Alberta's Environment

Q3. How would you rate the performance of the following in relation to Alberta's environment.





### Performance in Relation to Alberta's Environment

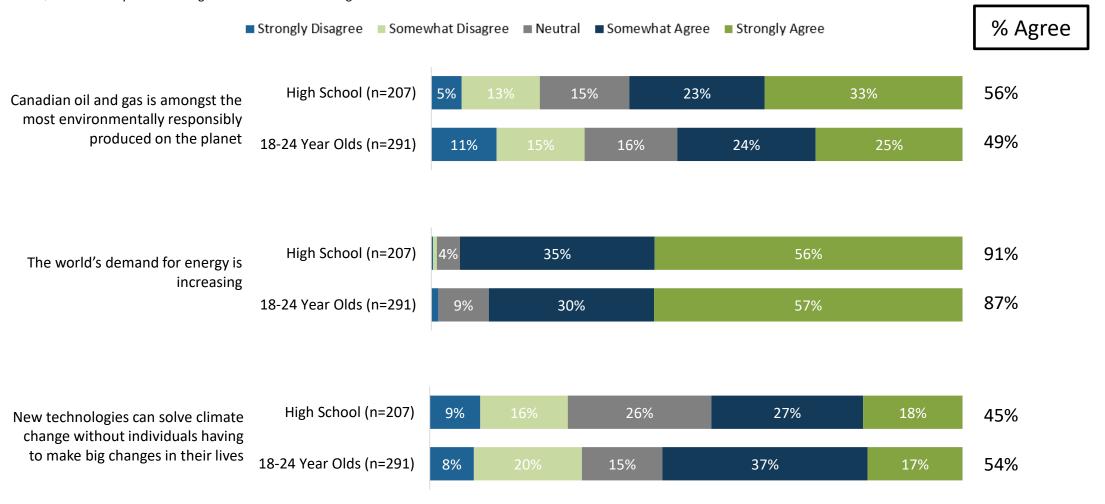
Q3. How would you rate the performance of the following in relation to Alberta's environment.





# **Alberta Youth Perspective on Climate and Energy**

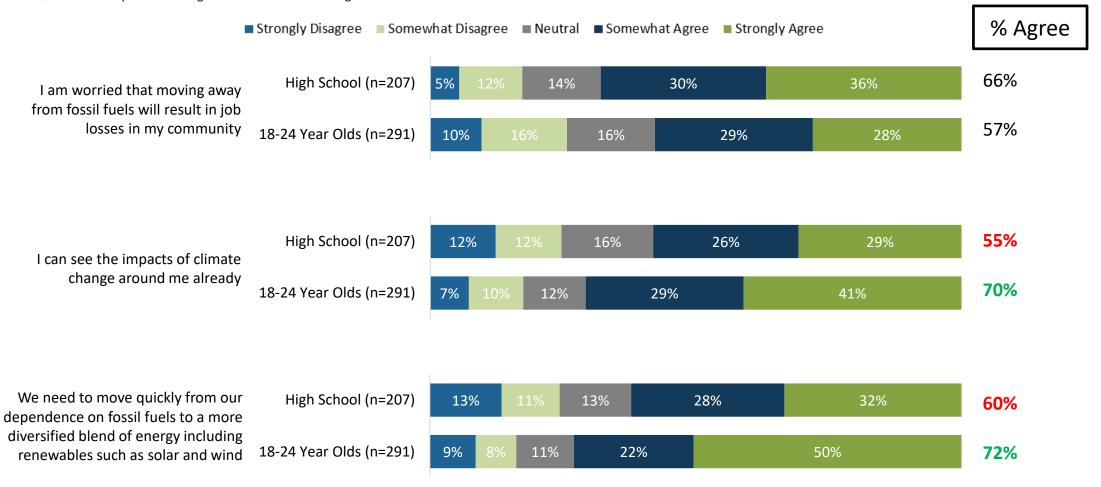
Q4. Please rate your level of agreement with the following statements.





# **Alberta Youth Perspective on Climate and Energy**

Q4. Please rate your level of agreement with the following statements.





# **Actions**

### **WORRY ABOUT THE FUTURE**

Nearly seven in ten high school students (69%), and six in ten youth 18 to 24 (58%) are worried about their future in relation to economy and the environment. The concern is greater among female respondents with 79% being concerned, compared with 64% for males.

A majority of respondents are also worried specifically about climate change. Six in ten (62%) high school youth and seven in ten (72%) 18 to 24 year-old youth are concerned about climate change. Regionally, there is greater concern about climate change among youth in Edmonton and Calgary (73%) than among youth in the rest of the province (62%). More females (77%) than males (60% are concerned about climate change.

### **PERSONAL ACTION**

Four in ten high school students (39%) and six in ten youth 18 to 24 (58%) are willing to make big changes to their lifestyle to help solve climate change (e.g., no driving or flying, purchasing fewer

new materials). When assessing personal actions in relation to the environment, females invariably rated their extent of personal action higher than males;

- Purchased used items instead of new to reduce consumption (68% females, 48% males)
- Purchased fewer items made from plastic (70% females, 57% males)
- Increased use of public transit (58% females, 40% males)
- Convinced family members and friends to take action to reduce environmental impact (47% females, 30% males)
- Tried to understand different points of view related to energy and environment (63% females, 51% males)
- There were also two items which differed regionally in terms of personal actions;
- Increased use of public transit (54% Edmonton and Calgary, rest of Alberta32%)
- Participated in a rally or protest (14% Edmonton and Calgary, rest of Alberta 5%)



# **Actions**

# Leger

### **ACCOUNTABILTY**

Although eight in ten Albertan youth do see a personal responsibility in dealing with climate change, they associate the greatest responsibility with government and industry. For high school students, two-thirds (67%) believe the main responsibility for tackling climate change lies with the federal government, 62% with the provincial government, and 57% with industry. For youth 18 to 24, 76% place responsibility with the federal government, 59% with industry, and 56% with provincial government. Youth regard themselves as the least responsible among all parties listed for tackling the consequences of climate change.

### **COMPARISONS TO 2010**

The 2010 ACEE Environmental Behaviours and Alberta Youth survey asked youth a series of questions in relation to barriers and actions associated with their involvement in environmental stewardship. Many of these questions were repeated in 2020. The biggest shifts between the two waves of the survey occurred in this section of the survey.

### TOP BARRIERS TO ACTION

When it comes to protecting the environment, the top barriers include not knowing what to do, as well as perceptions that youth are already doing all they can, and concerns that protecting the environment costs too much. In 2010, the top barriers for high school students was a lack of knowledge, while time and cost were the biggest barriers for 18 to 24 year-olds.

Changes have occurred in the degree to which many of the barriers are limiting youth involvement in protection of the environment between 2010 and 2020. A lack of knowledge about what can be done increased as a barrier by 20 percentage points for 18 to 24 year-old youth, and 9 points for high school students since 2010. The percent of high school students who feel they are already doing everything they can increased by 15 points, and for 18 to 24 year-olds this increased by 14 points between 2010 and 2020.

### **APATHY**

Although in minority, the proportion of youth feeling their actions won't make a difference, and not being concerned about the environment are concerning. Twenty-one percent of high school students feel their actions will not make a difference in relation to environmental protection, an increase of 8 percentage points since 2010.

Nearly one-third of 18 to 24 year-olds feel their actions will not make a difference, an increase of 17 points since 2010. This perception of actions not making a difference is greater among males (34%) than females (24%).

Twenty percent of high school students are not concerned about the environment, an increase of 11 points over 2010. Youth 18 to 24 years of age by contrast show a lower proportion who are not concerned about the environment at 10%, essentially unchanged compared to 2010. More males are not concerned about the environment (17%) than females (12%).

Fourteen percent of Edmonton and Calgary youth have distanced themselves from all the noise about climate change compared with 25% in the rest of Alberta.

One quarter of high school students and four in ten youth age 18 to 24 feel it is too late to solve climate change, and all we can do now is slow it down. While the majority of youth are convinced climate change is caused by human activity, almost one-quarter of high school students are not convinced this is the case. Ten percent of youth 18 to 24 are also not convinced. More than twice as many males (25%) are not convinced human activity has any bearing on climate change (11% females).

### **FEELING HOPEFUL**

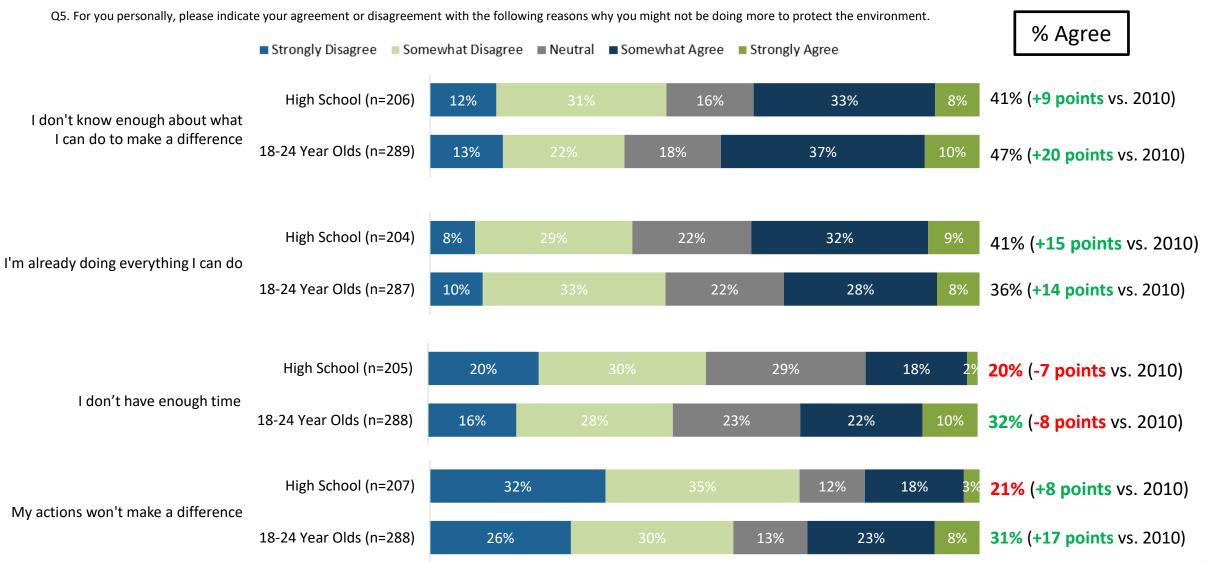
That said, while a concerning proportion of youth are apathetic, a larger proportion show positive attitudes about their potential impact on the environment. More than one-half of high school students (57%) and youth 18 to 24 (56%) believe they can do more to protect the environment. This perspective is most prevalent among females with 67% feeling they can do more, compared with 47% for males.

Eight in ten youth also believe it is possible to have a strong economy in Alberta while protecting the environment. This represents a significant increase of 23% for high school student and 29% for youth 18 to 24 since 2010.

For seven in ten youth, hearing about solutions to environmental problems makes them feel more positive about the future. This result increased substantially since 2010, by 24% for high school students, and 25% for youth 18 to 24.

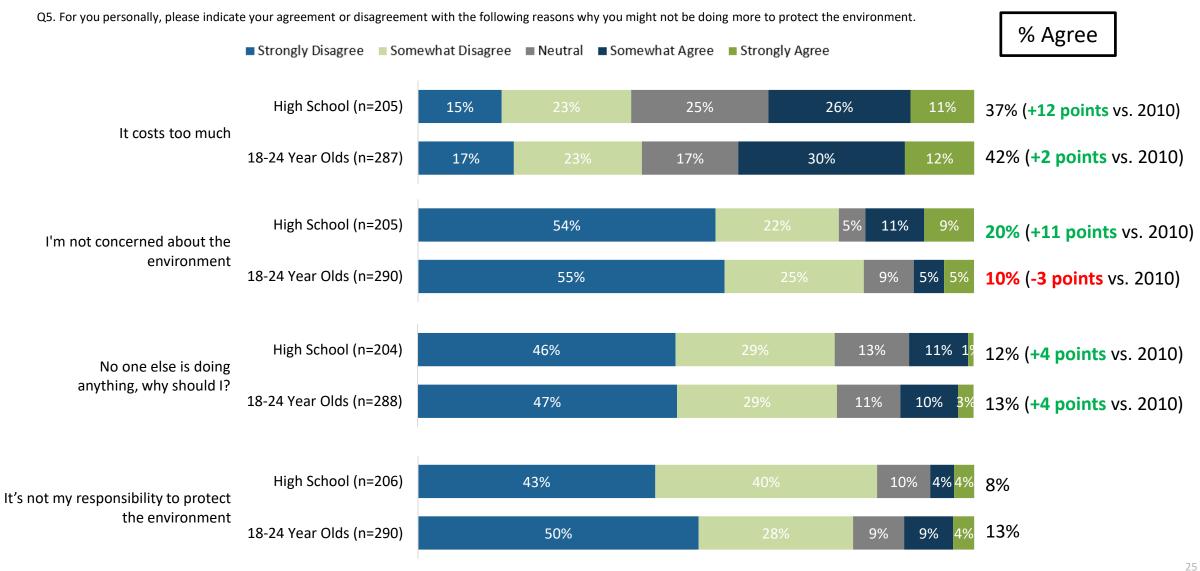


# Reason for not doing more to protect the environment





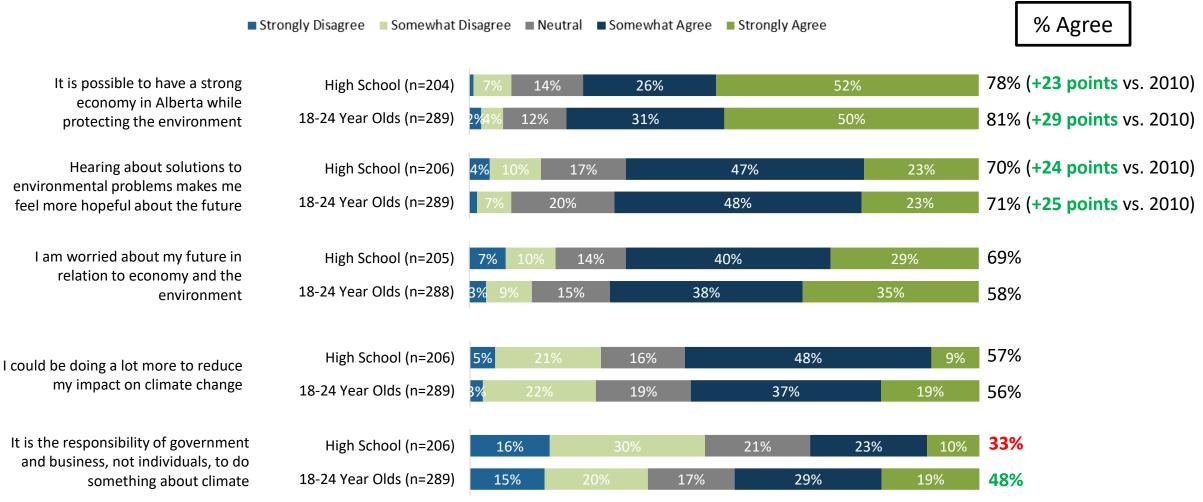
# Reason for not doing more to protect the environment





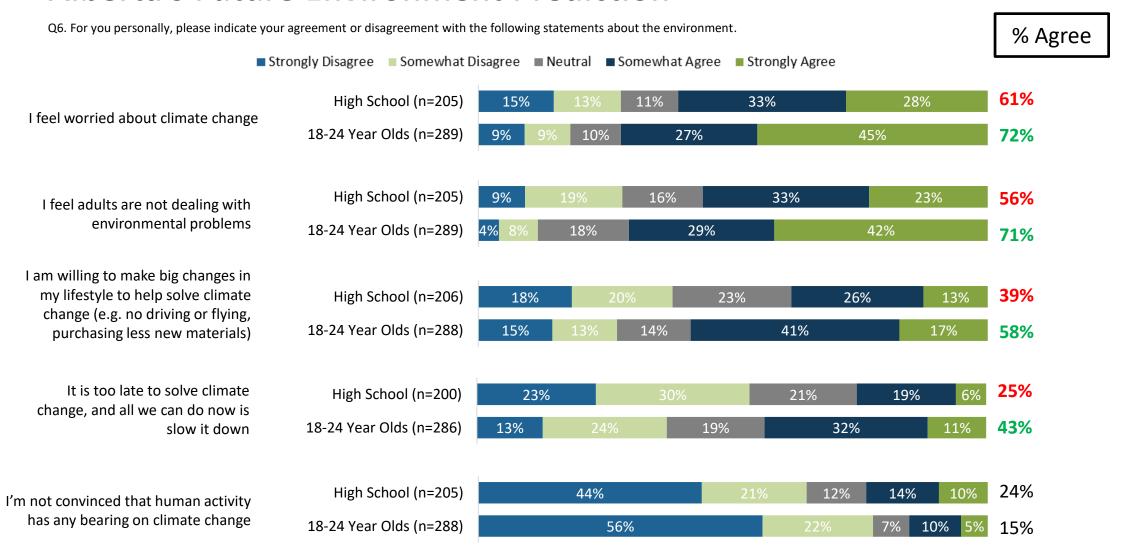
### **Alberta's Future Environment Prediction**

Q6. For you personally, please indicate your agreement or disagreement with the following statements about the environment.





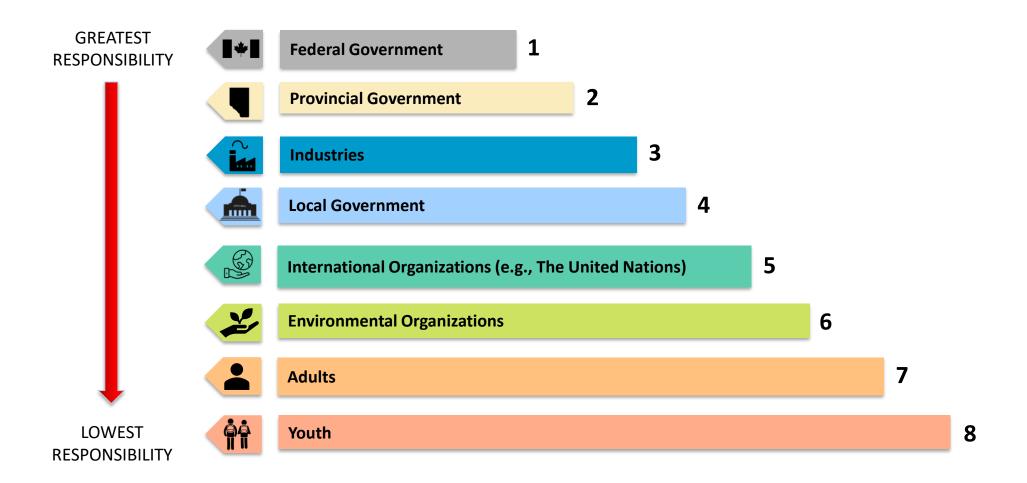
### **Alberta's Future Environment Prediction**





# **Responsibility for Tackling Climate Change**

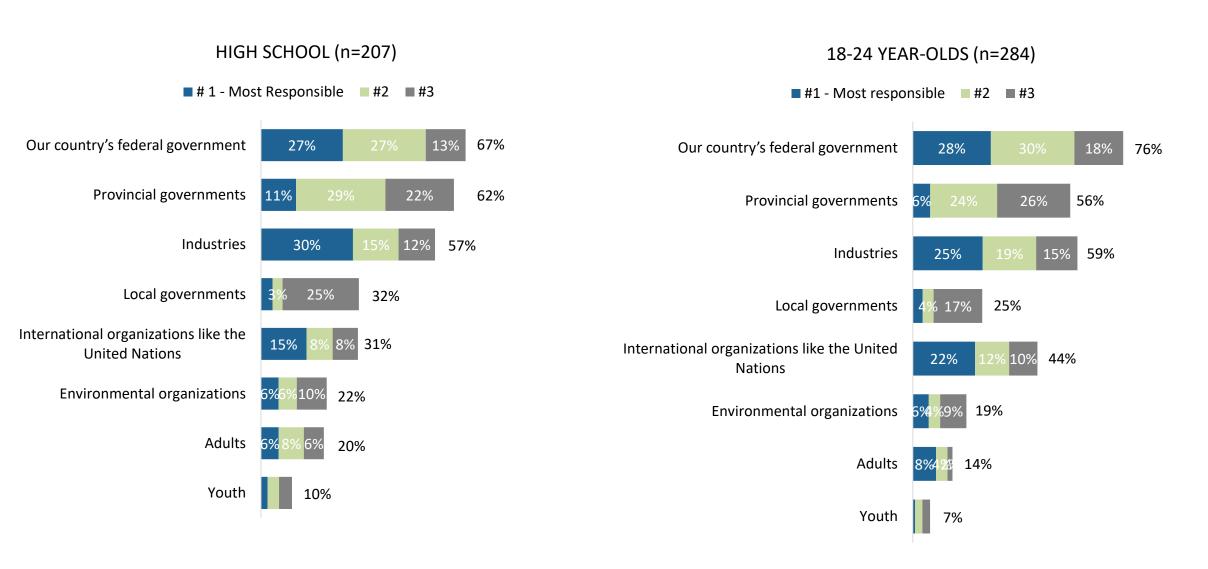
Q7. In tackling the consequences of climate change, who do you think should have the main responsibility?





# **Responsibility for Tackling Climate Change**

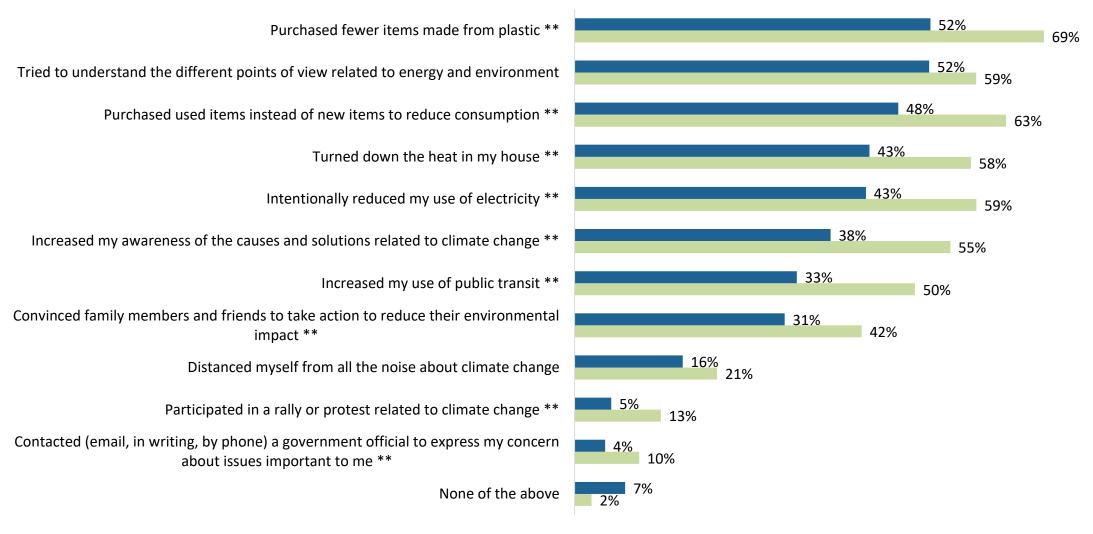
Q7. In tackling the consequences of climate change, who do you think should have the main responsibility?





# Youth in Alberta Have Personally...

Q8. Please indicate which of the following you have personally done (n=498)





# CONVERSATIONS ABOUT ENERGY, THE ENVIRONMENT, AND ECONOMY

# Conversations About Energy and the Environment

Alberta youth are most comfortable talking to their friends and family about topics such as energy, environment (including climate), and the economy. This suggests that youth do have a willingness to engage in conversations about climate change, particularly with family and friends. The level of comfort in having these conversations with teachers is slightly lower.

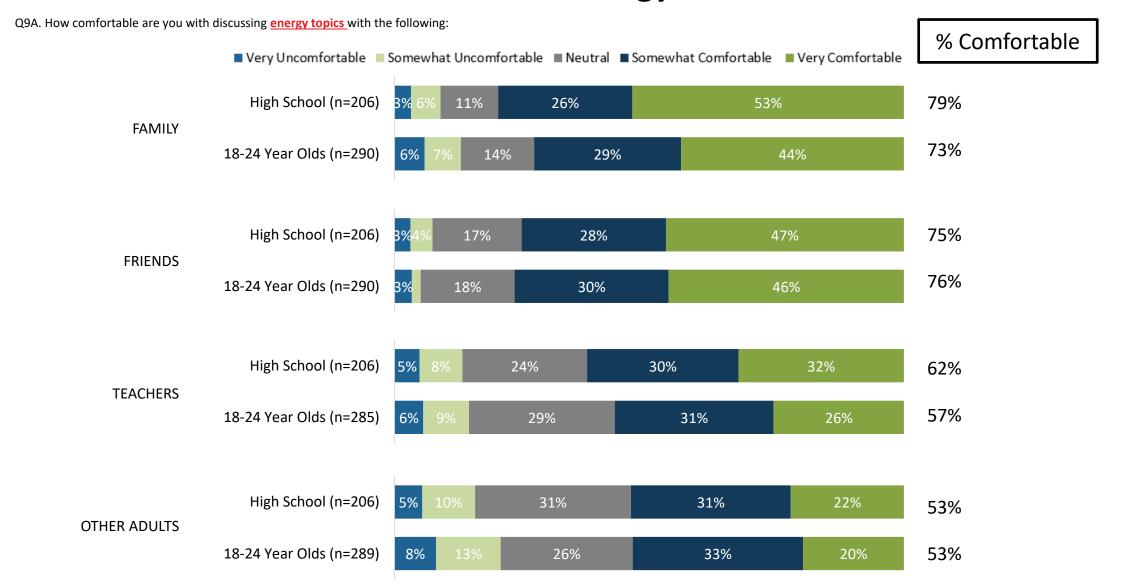
When referring to energy topics, males are more comfortable speaking with teachers (33% strongly agree) and other adults (27% strongly agree) than are females (23% strongly agree, 13% strongly agree, respectively). Males are also more comfortable when speaking about the Alberta economy with family (52% strongly agree), teachers 31% strongly agree), and other adults (26% strongly agree) compared with females (39%, 20%, and 13% respectively).

There are also differences based on where youth live. Youth outside of Alberta's two large urban centres are more comfortable speaking with family about Alberta's economy (53% strongly agree) than those who live in Edmonton and Calgary (39%).



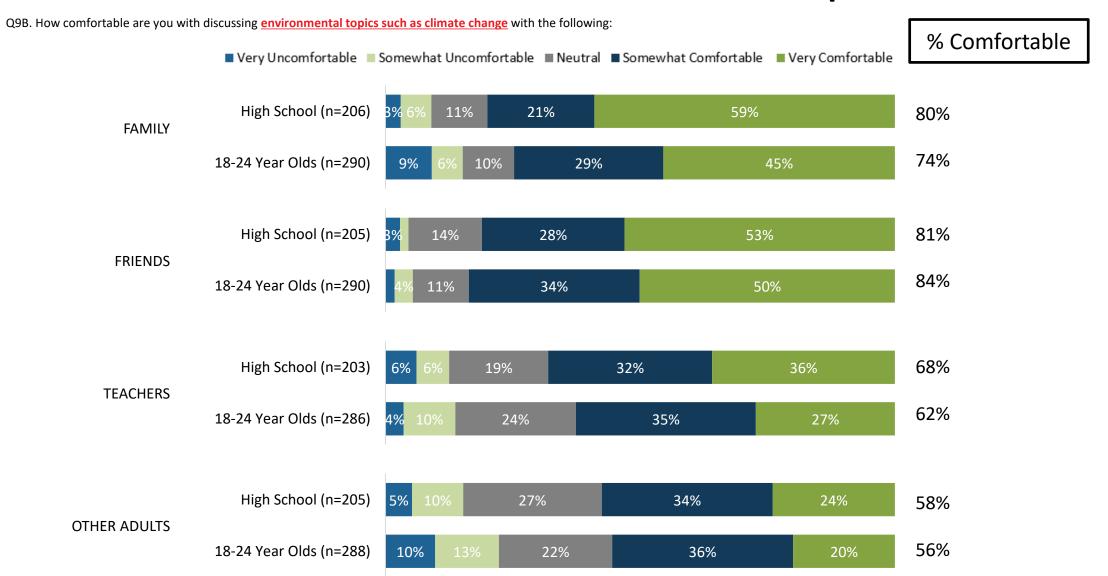


# **Comfort With Conversations About Energy**



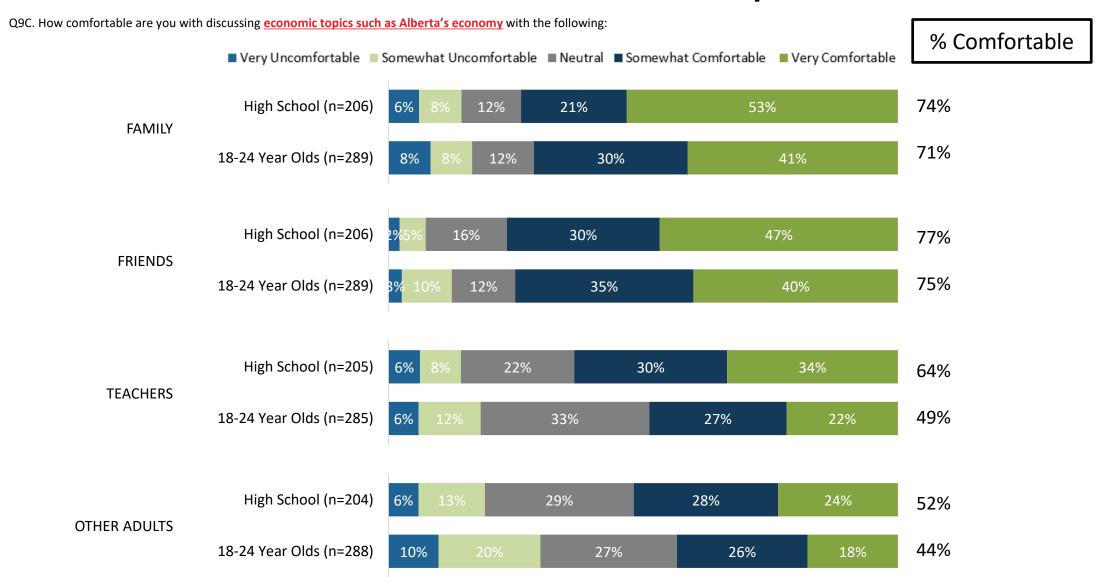


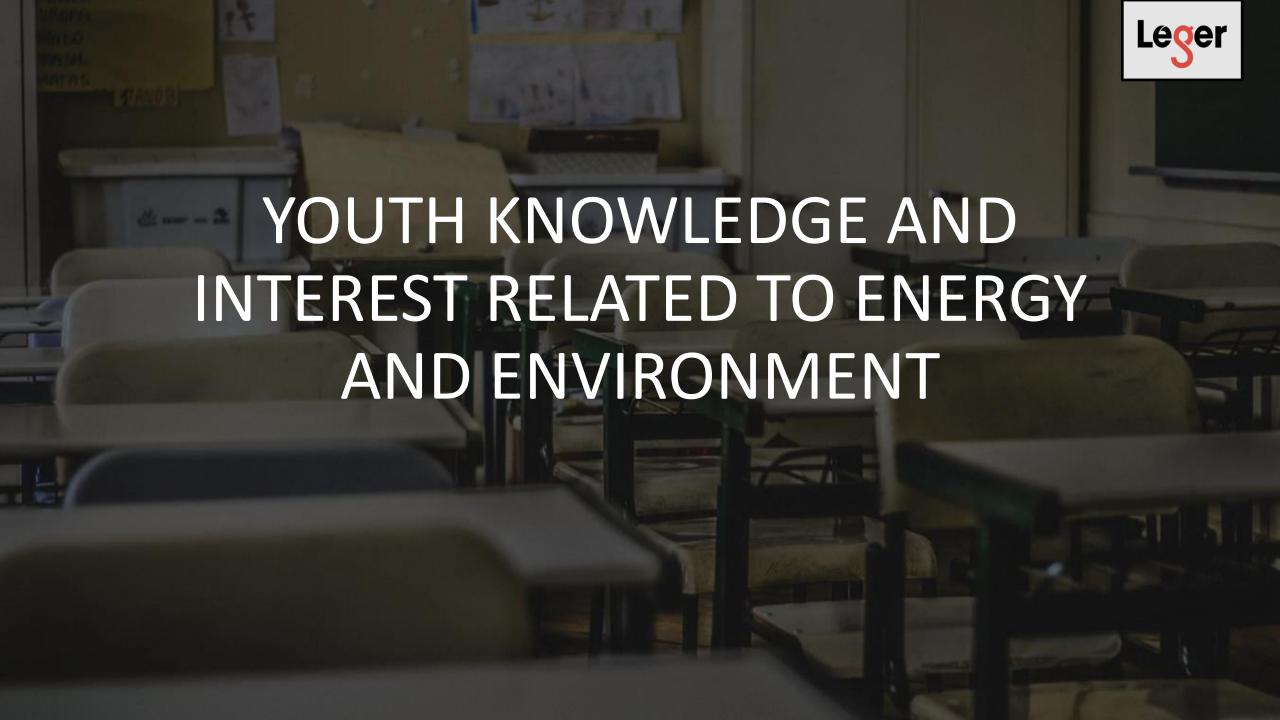
# **Comfort With Conversations About Environmental Topics**





# **Comfort With Conversations About Economic Topics**







# Youth Knowledge of Energy and Environment, and Topics of Interest to Them

#### **KNOWLEDGE**

Alberta youths' knowledge when it comes to energy and environment topics tends to be inconsistent. For some topics, the majority of youth are able to identify the correct answer from a list of options; for other topics, many youth are unable to identify the correct answer and are sometimes fooled by incorrect options.

Just over half of 18 to 24 year-old youth correctly identified that climate change is mostly caused by greenhouse gases, compared with 47% of high school youth. For this statement there is a significant difference by gender, with 56% of females choosing the correct statement compared with 45% for males. This is consistent with results showing males are less likely to believe that climate change is caused by human activity.

The majority of high school students (84%) and youth 18 to 24 (83%) understand that fossil fuels account for most of the world's energy needs. Sources of carbon dioxide were also correctly identified by the vast majority of youth. Eighty-three percent of high school students and 85% of youth 18 to 24 are also aware that most electricity in Alberta is generated from coal and natural gas.

While there is a strong knowledge among youth that oil is mainly used for transportation fuels (76% high school students, 84% youth 18 to 24), there is lower knowledge (approximately one-half of youth) that oil is used for creating other products like clothing, plastics, fertilizers, and asphalt. With natural gas, there is a strong understanding that it is used for heating homes and buildings (82% high school students, 71% youth 18 to 24), and a lower understanding it is used for producing electricity (35% high school students, 38% youth 18 to 24).

An understanding of energy generation in the rest of Canada is lower than within Alberta. Only two in ten youth are aware that hydro-electric generation is the main source of electricity in the rest of Canada. Males have a significantly higher awareness of hydro energy production in the rest of Canada, with 26% being aware of it being the main electricity source compared with 13% of females being aware.

Youth were also asked to self-assess their level of knowledge on a range of energy and climate topics. Forty-two percent of high school students and 54% of youth 18 to 24 believe themselves to be knowledgeable about global climate change. Two in ten high school students and three in ten youth 18 to 24 consider they are knowledgeable in what other countries are doing to reduce climate change.

Relatively few high school students (26%) and youth 18 to 24 are knowledgeable about what the industry is doing to reduce its carbon footprint. However, males report to have a higher awareness (36%) than females (21%) of what the oil and gas industry is doing to reduce its footprint.



# Youth Knowledge of Energy and Environment, and Topics of Interest to Them

#### **TRUST**

As noted previously, high school students and youth aged 18 to 24 feel that the government and the oil and gas industry in Alberta are most responsible for tackling climate change. However, high school students and youth 18 to 24 also rate the federal and provincial governments, and the oil and gas industry, as the least trusted sources of information about energy and the environment. Males are more likely to trust the provincial government (35%) and oil and gas companies (36%) than females (26% and 30% respectively). There is also a greater trust of the federal government among Edmonton and Calgary youth (39%) than youth in the rest of Alberta (25%).

High school students are most likely to trust information from family and friends (70%), climate scientists (66%), and teachers (66%).

Youth 18 to 24 are most likely to trust information from climate scientists (76%), environmental organizations (67%), and family and friends (63%).

Female youth are more likely to trust youth leaders (50%) than males (37%), Environmental Organizations (68% females/54% males), and Indigenous groups or leaders (42% females, 34% males). Edmonton and Calgary youth have a greater level of trust of Environmental Organizations (69%) than youth in the rest of the province (54%). Similarly, there is higher trust among Edmonton and Calgary youth compared with youth in the rest of the province of Indigenous groups or leaders (51% compared with 34%), teachers (65% compared with 50%), and climate scientists (80% compared with 63%).

#### **TOPICS OF INTEREST**

High school students are most interested in learning about alternate forms of energy (56%), how they can reduce their carbon footprint (53%), and technological solutions to climate change (53%).

In line with high school students, youth 18 to 24 are interested in learning about alternate forms of energy (64%), how they can reduce their carbon footprint (55%), and technological solutions to climate change (51%)

The impact that different forms of energy production have on our environment has a higher interest among females (62%) than males 42%). Similarly, there is higher interest among females than males in relation to societal impacts of environmental issues (55% compared with 36%) and how to reduce one's carbon footprint (74% compared with 37%).



# Youth Knowledge of Energy and Environment, and Topics of Interest to Them

#### **EDUCATION**

There is a strong desire among youth to learn about aspects of energy and the environment, which may be due to a relative lack of knowledge among youth on some of these topics in conjunction with the importance they place on them. When considering what should be taught in school, many high school students and youth 18 to 24 focused on the importance of learning about solutions. Specifically, solutions to pollution and waste, energy and the environment, and climate change were of interest to youth. There were geographic as well as gender differences in views on what should be taught.

Edmonton and Calgary youth show a higher percentage of strongly agree ratings compared with youth in the rest of Alberta for;

- It is important to learn about solutions to energy and environment at school (62% compared with 42%),
- It is important to learn about solutions to climate change at school (62% compared with 45%),
- Lessons should teach students about policies for limiting climate change (42% compared with 31%)

Females provided a higher percentage of strongly agree ratings than males for the following;

- It is important to learn about solutions to pollution and waste at school (68% compared with 55%)
- It is important to learn about solutions to energy and environment at school (61% compared with 43%);
- It is important to learn about solutions to climate change at school (63% compared with 45%),
- Educating students about climate change should be a high priority for schooling Grades 4-12 (45% compared with 29%)

Few high school students (21%) or youth 18 to 24 (19%) view climate change as too controversial to be discussed in the classroom. Twenty-seven percent of males compared with 12% of females view climate change as too controversial to discuss in the classroom. National findings in the study <u>Canada, Climate Change and Education</u>: <u>Opportunities for Public and Formal Education</u> where 19% of students indicated climate change is too controversial<sup>1</sup>.

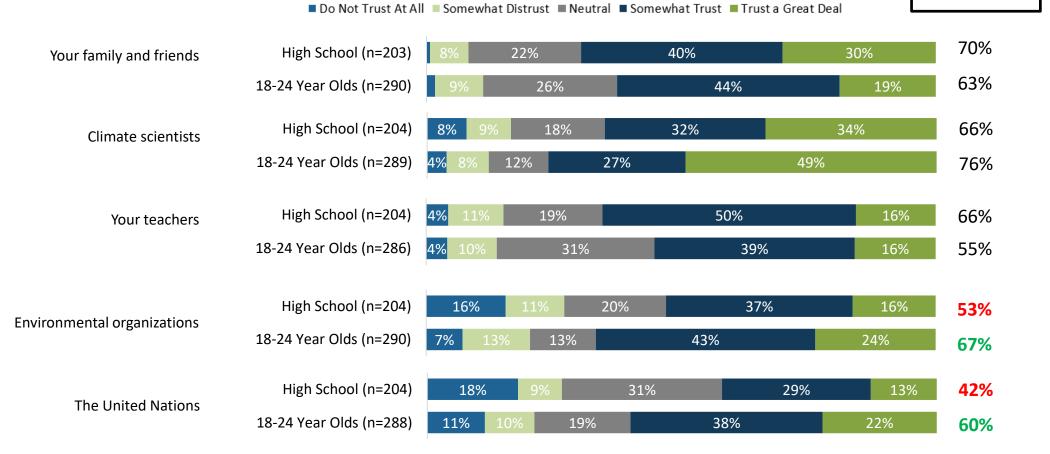
<sup>1.</sup> Field, E., Schwartzberg, P., & Berger, P. (2019). Canada, Climate Change and Education: Opportunities for Public and Formal Education (Formal Report for Learning for a Sustainable Future). North York, Canada: York University Printing Services.



# **Trust in Regards to Energy and the Environment**

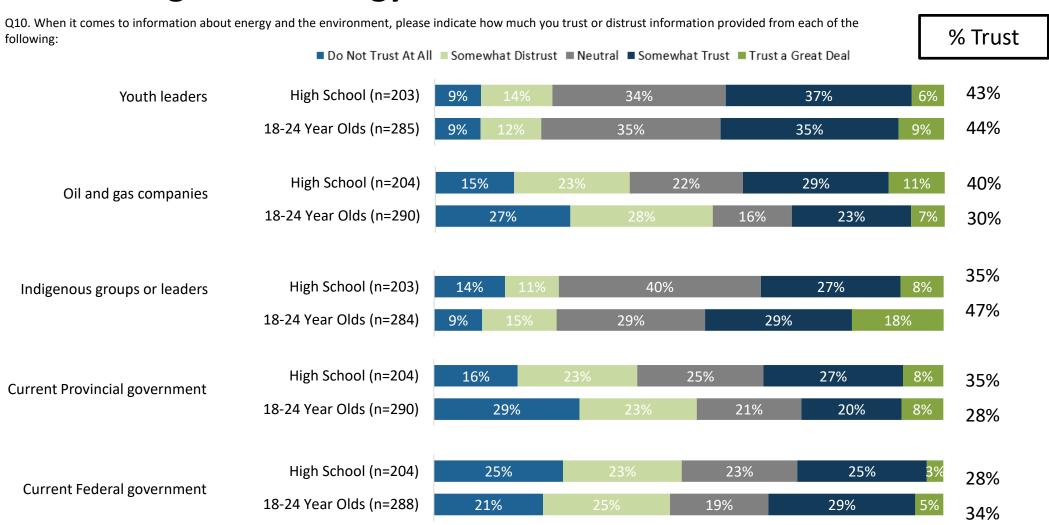
Q10. When it comes to information about energy and the environment, please indicate how much you trust or distrust information provided from each of the following:

% Trust





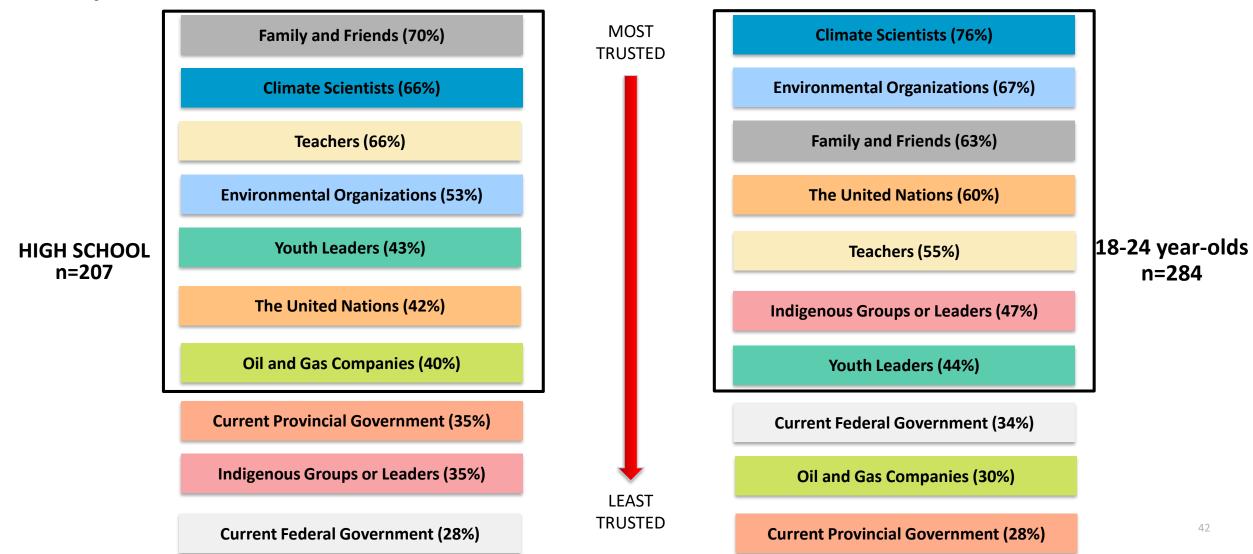
# Trust in Regards to Energy and the Environment





# Trust in Regard to Energy and the Environment BY AGE

Q10. When it comes to information about energy and the environment, please indicate how much you trust or distrust information provided from each of the following:

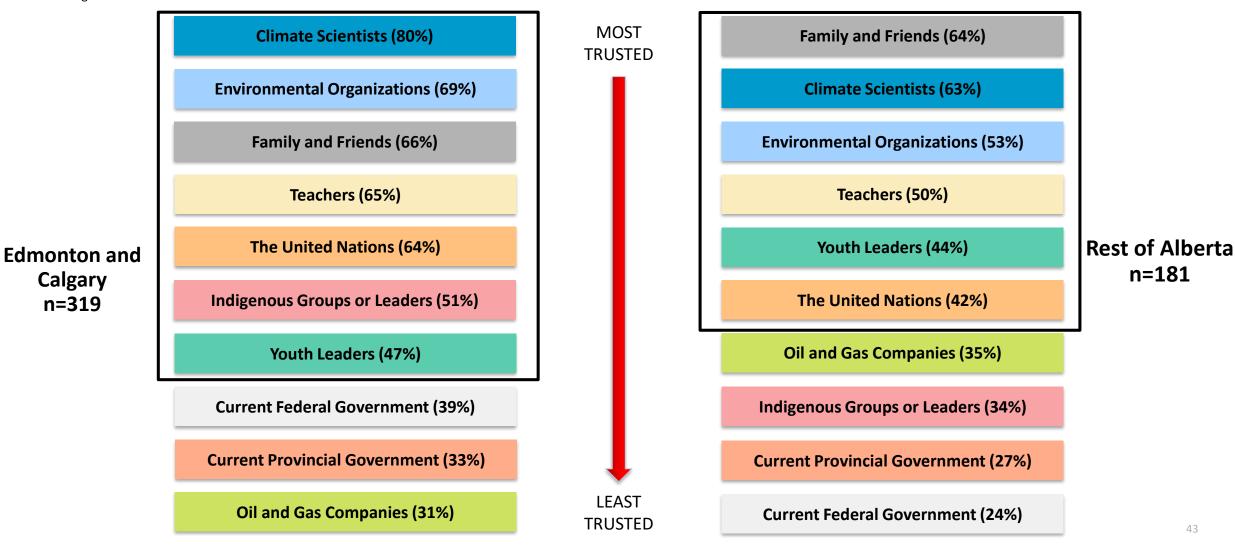




n=181

# Trust in Regard to Energy and the Environment BY REGION

Q10. When it comes to information about energy and the environment, please indicate how much you trust or distrust information provided from each of the following:





Males

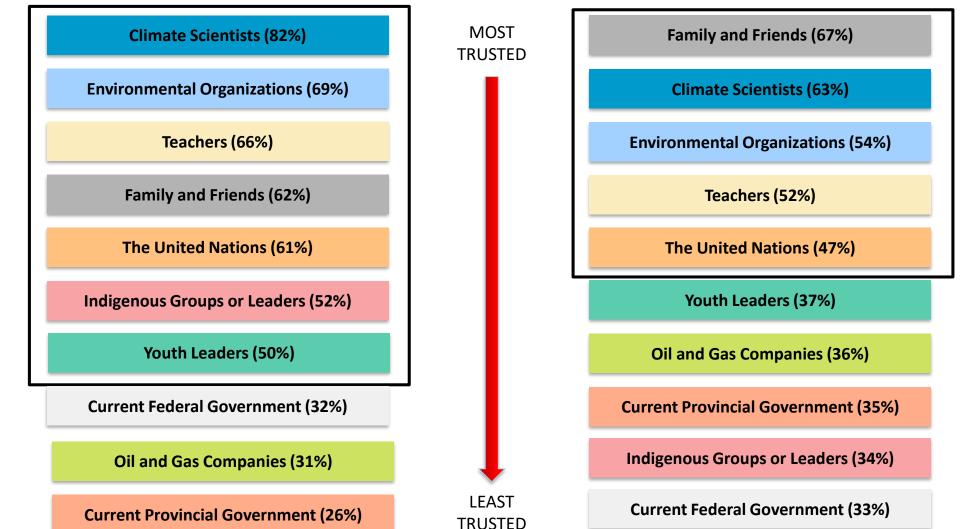
n=160

# Trust in Regard to Energy and the Environment BY GENDER

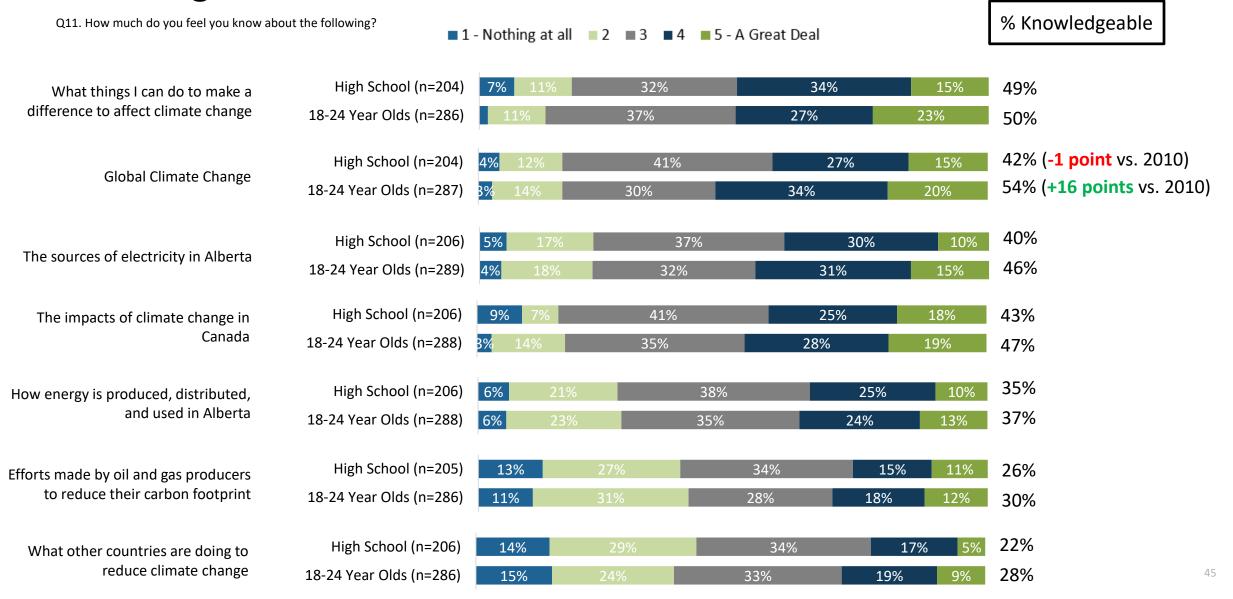
Q10. When it comes to information about energy and the environment, please indicate how much you trust or distrust information provided from each of the following:

**Females** 

n=334



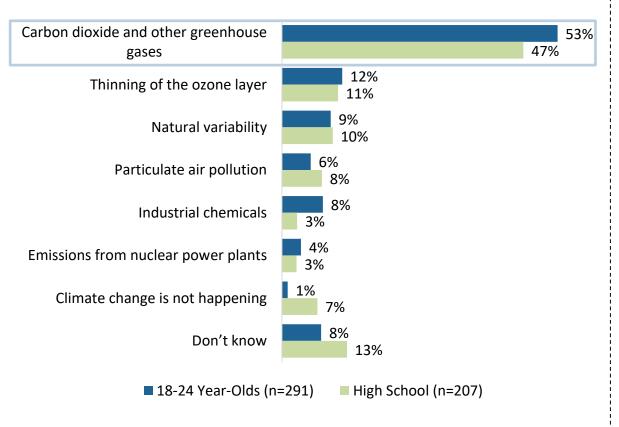




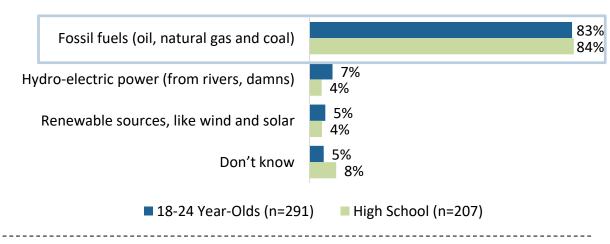


Q12: For each of the following questions, please choose the answer(s) that you feel is correct, to the best of your knowledge

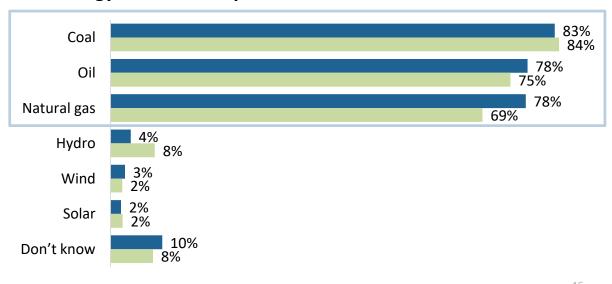
#### Climate change is mostly caused by...



#### At present, most of the world's total energy needs are met from...



#### Energy sources that produce carbon dioxide when used are...



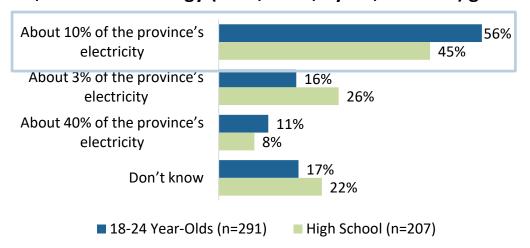
■ High School (n=207)

■ 18-24 Year-Olds (n=291)

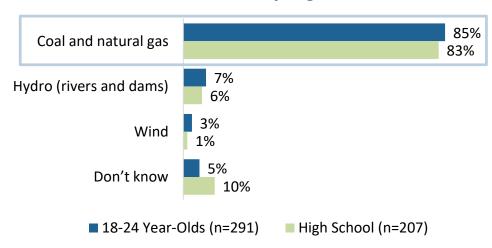


Q12: For each of the following questions, please choose the answer(s) that you feel is correct, to the best of your knowledge:

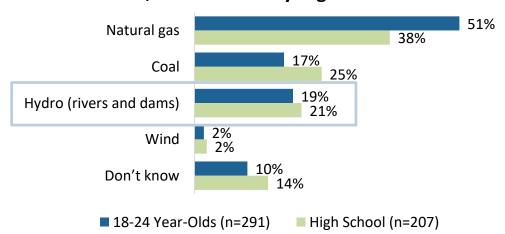
#### In Alberta, renewable energy (solar, wind, hydro, biomass) generates...



#### In Alberta, most electricity is generated from...



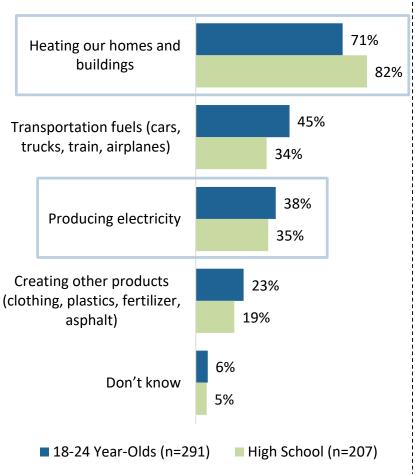
#### In Canada, most electricity is generated from...



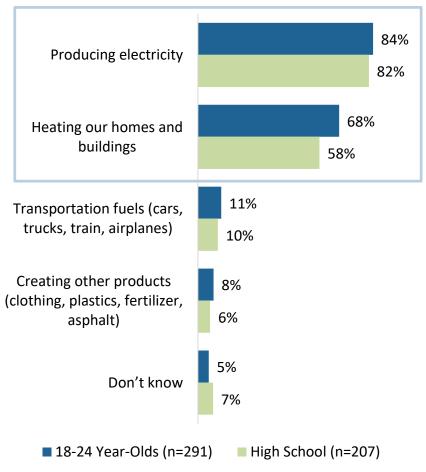


Q12: For each of the following questions, please choose the answer(s) that you feel is correct, to the best of your knowledge:

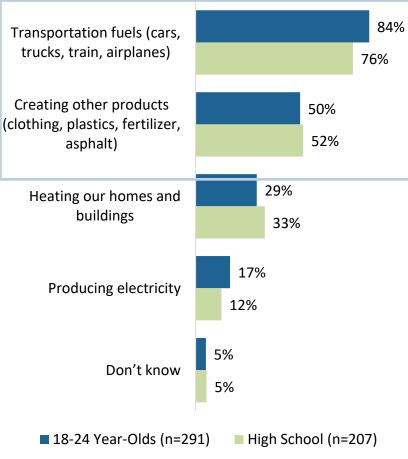
#### Two things natural gas is mainly used for...



#### Two things solar energy is mainly used for....



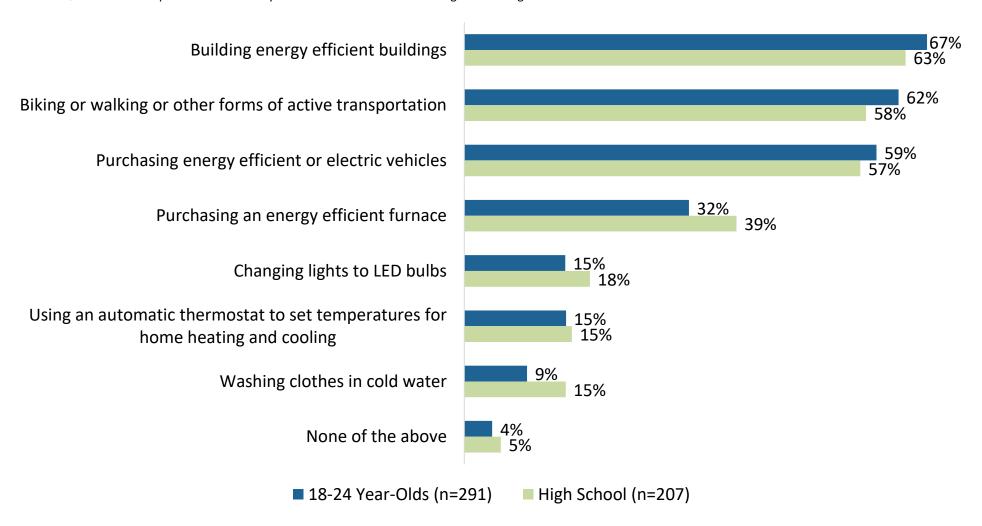
#### Two things oil is mainly used for...





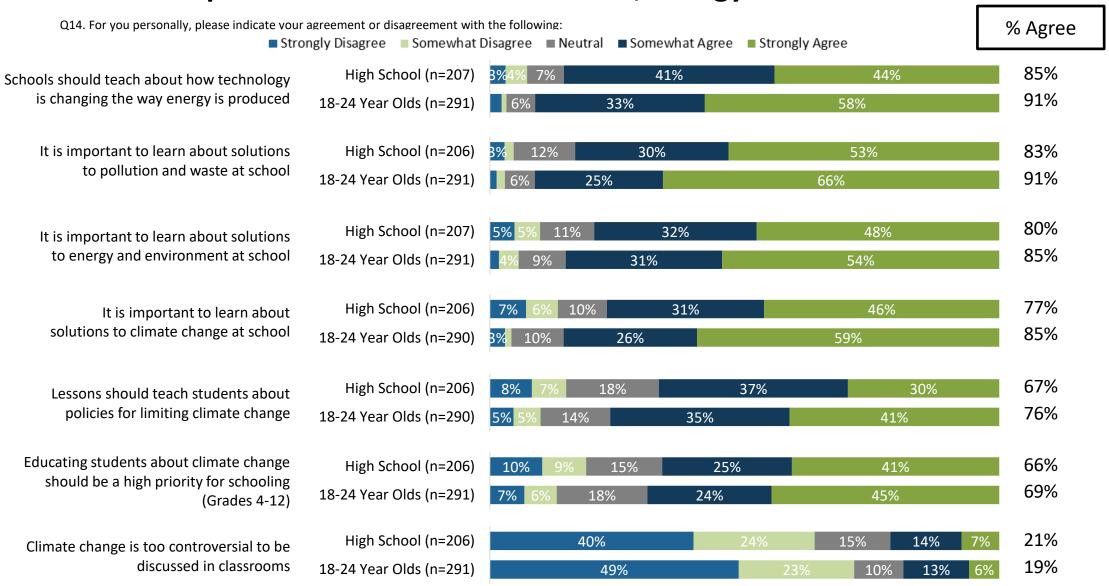
# Youth Perspective on Main Actions to Reduce Greenhouse Gases

Q13. Select the top three actions that you think would reduce the most greenhouse gases.





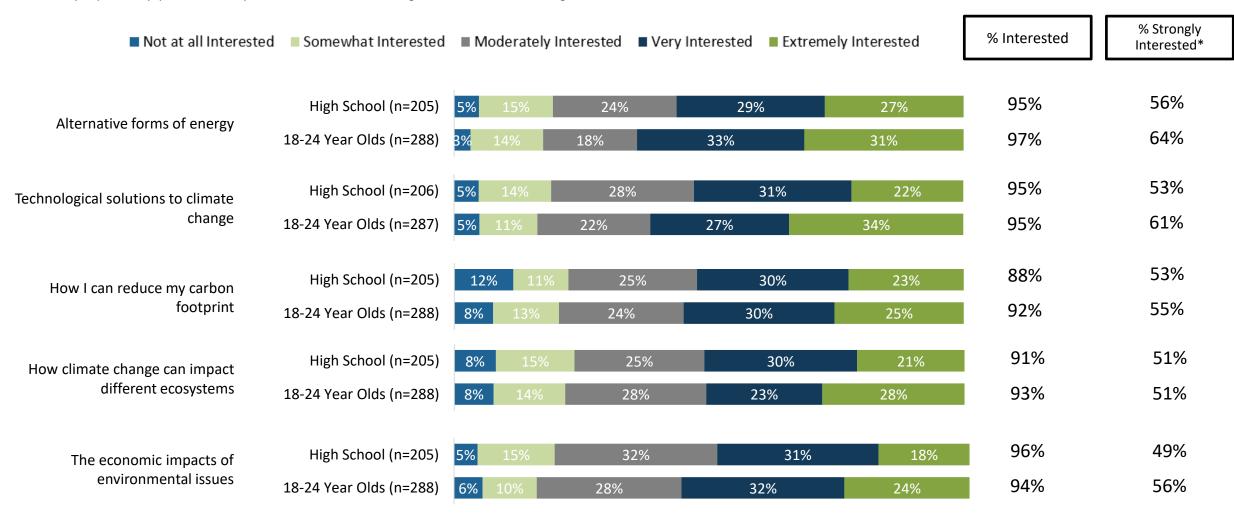
## Youth Perspective on Schools and Climate, Energy and Environment





# Alberta Youths' Level of Interest in Learning About...

Q15. For you personally, please indicate your level of interest in learning about each of the following:

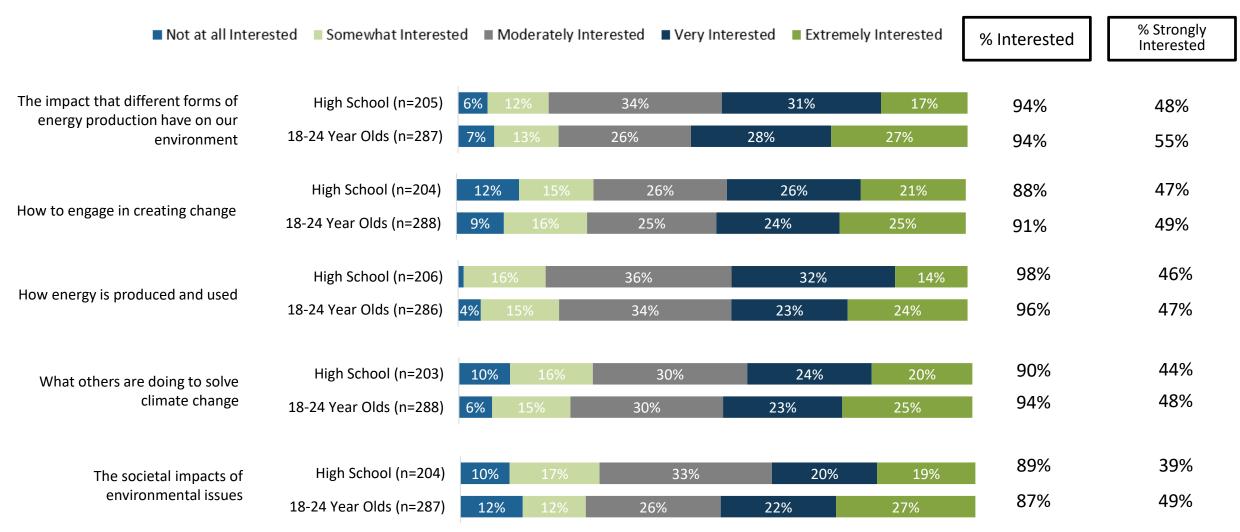


<sup>\*</sup>Table sorted by strongest interest among high school students (highest to lowest). Strongly interested is the sum of very and extremely interested.



# Alberta Youths' Level of Interest in Learning About...

Q15. For you personally, please indicate your level of interest in learning about each of the following:









## **SEGMENTATION ANALYSIS**

Segmentation analysis allows for the identification of like-minded groups and their characteristics. This analytical approach is most often used in marketing as a way of understanding which segments align with the products and services offered by a company or organization. However, there is also a valuable application in social science research in helping to understand how societal attitudes and behaviours cluster together, and what the characteristics are of these groups, or clusters. We can use this information to help inform education and outreach by targeting specific messages to address the needs of the clusters.

To conduct segmentation we use a statistical technique known as latent class analysis. This analysis looks for response patterns within the data and uses this to split people into groups according to this information.

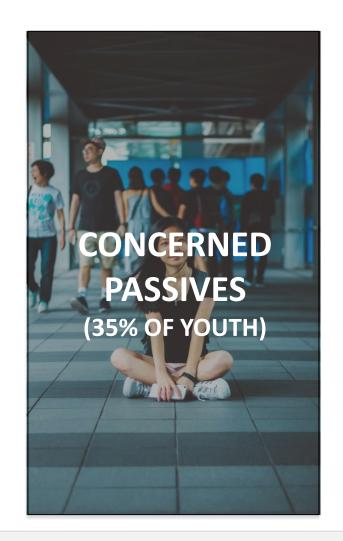
The results of the segmentation analysis produced **three** youth segments:

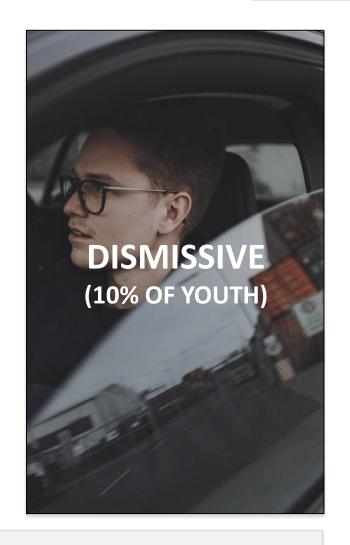
- The largest segment are those who have the greatest belief in climate change and are most motivated to take action, and also most concerned (accounting for 55% of youth)
- The smallest segment are those who exhibit the lowest belief in both the existence and the impacts of climate change, are least motivated to take action, and are least concerned (accounting for 10% of youth).
- A third group of youth exhibit concerns surrounding the environment and climate change, but do not possess the knowledge regarding what they can do to make a difference, and they view action as less of their responsibility. This group accounts for 35% of youth.

Further details are provided on the three segments and their associated characteristics in the following pages.









Highest belief in climate change Most concerned Most motivated

Lowest belief in climate change Least concerned Least motivated



## **ALARMED**

Alarmed youth are the most concerned about climate change and the future of Alberta's environment, they are the most personally involved, and the most motivated to take action in an effort to minimize environmental impacts. These individuals are certain that climate change is happening, and are most likely to believe that human activity has a significant bearing on climate change. They are willing to act as individuals to respond to the issue.

Alarmed youth are most likely to see the immediate and long-term impacts of climate change, and they strongly believe that we need to move from our dependence on fossil fuels to a more diversified blend of energy including renewables such as solar and wind. However, they do not identify as being overly knowledgeable about the topic and believe that educating students about climate change should be a high priority for schooling. Alarmed youth believe that educating students about solutions and alternative forms of energy are important for schools to consider.

**Demographic distinctions**: are more likely to be female (56%) and attending a post-secondary institution (41%).

## **CONCERNED PASSIVES**

Concerned Passives also believe that climate change is a serious issue and that action is needed. However, this group is less personally involved than the Alarmed group and feel less personally threatened. Concerned passives do believe that climate change is occurring and that human activity has an impact on climate change, but they are less likely to acknowledge the long-term impact on the state of Alberta's environment and are less concerned with the environment (as compared to Alarmed). Further, concerned passives can see the impacts of climate change around them, but they are concerned with the impact that moving away from fossil fuels will have on jobs within their community.

The majority of concerned passives do not feel well-educated with respect to what they can do to make a difference and further believe that their actions won't make a difference. Concerned passives do strongly believe that schools should be educating students about climate change, solutions, and alternative forms of energy.

**Demographic distinctions**: are more likely to be male (58%).

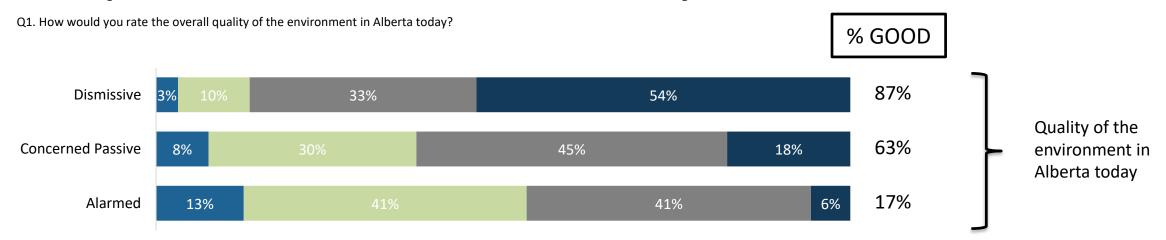
#### **DISMISSIVES**

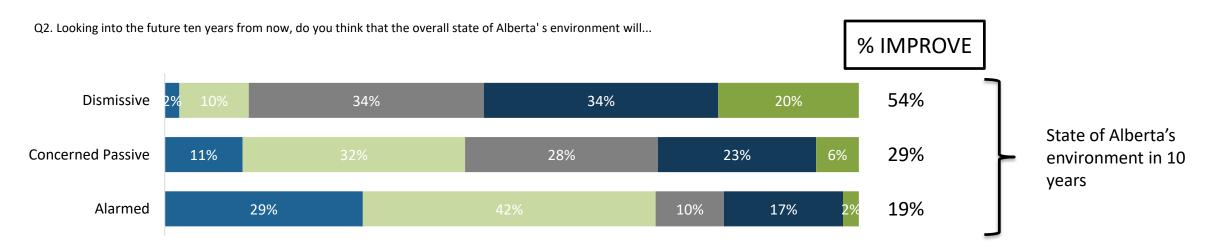
Dismissives believe that the current quality of the Alberta environment is good, and they are less likely than the other groups to acknowledge the impact of climate change on the Alberta environment in the future. They do not place much personal importance on climate change and don't think they can do more to reduce their own personal impact. This group perceives climate change as a very minimal threat, and believes that Canadian oil and gas is amongst the most environmentally responsibly produced on the planet. Further, they do not see the need to move away from fossil fuels to a more diversified blend of energy.

Overall, they are less knowledgeable about climate change than their peers and less willing to act. They are not interested in learning about climate change or various forms of energy. The perceive climate change as being too controversial to discuss in the classroom, and do not place a great deal of importance on educating students about this topic.

**Demographic distinctions**: are more likely to be male (71%) and attending secondary school (50%).

# **Perceptions of Alberta's Environment Today**









#### ATTITUDES, INACTION, AND BELIEFS

#### **ATTITUDES**

The world's demand for energy is increasing

We need to move quickly from our dependence on fossil fuels to a more diversified blend of energy including renewables such as solar and wind

I can see the impacts of climate change around me already

91% agree

85% agree

82% agree

#### **INACTION**

No one else is doing anything, why should I?

I'm not concerned about the environment

It's not my responsibility to protect the environment

My actions won't make a difference

96% disagree

95% disagree

91% disagree

77% disagree

#### **BELIEFS**

I'm not convinced that human activity has any bearing on climate change

It is possible to have a strong economy in Alberta while protecting the environment

I feel worried about climate change

Hearing about solutions to environmental problems makes me feel more hopeful about the future

I feel adults are not dealing with environmental problems

94% disagree

92% agree

90% agree

88% agree

82% agree





#### **KNOWLEDGE, EDUCATION, AND INTERESTS**

#### **KNOWLEDGE**

Global climate change

What things I can do to make a difference to affect climate change

The impacts of climate change in Canada

61% knowledgeable

56% knowledgeable

#### **EDUCATION**

It is important to learn about solutions to pollution and waste at school

Schools should teach about how technology is changing the way energy is produced

It is important to learn about solutions to energy and environment at school

It is important to learn about solutions to climate change at school

97% agree

96% agree

#### **INTERESTS**

Alternative forms of energy	81% interested
How I can reduce my carbon footprint	76% interested
Technological solutions to climate change	76% interested
The impact that different forms of energy production have on our environment	73% interested
How climate change can impact different ecosystems	70% interested
How to engage in creating change	69% interested



#### ATTITUDES, INACTION, AND BELIEFS



#### **ATTITUDES**

The world's demand for energy is increasing

I am worried that moving away from fossil fuels will result in job losses in my community

Canadian oil and gas is amongst the most environmentally responsibly produced on the planet

92%	agree
-----	-------

69% agree

59% agree

#### **INACTION**

It's not my responsibility to protect the environment	70% disagree
I'm not concerned about the environment	63% disagree
I don't know enough about what I can do to make a difference	58% agree
It costs too much	51% agree
My actions won't make a difference	44% agree
I don't have enough time	42% agree

#### **BELIEFS**

It is possible to have a strong economy in Alberta while protecting the environment	63% agree
am worried about my future in relation to economy and the environment.	63% agree
'm not convinced that human activity has any bearing on climate change	55% disagree
am willing to make big changes in my lifestyle to help solve climate change (e.g., no driving or flying, purchasing less new materials).	41% disagree
feel adults are not dealing with environmental problems	55% agree





#### **KNOWLEDGE, EDUCATION, AND INTERESTS**

#### **KNOWLEDGE**

The sources of electricity in Alberta

What things I can do to make a difference to affect climate change

How energy is produced, distributed, and used in Alberta

Global climate change

39% knowledgeable

37% knowledgeable

38% knowledgeable

#### **EDUCATION**

Schools should teach about how technology is changing the way energy is produced

It is important to learn about solutions to climate change at school

It is important to learn about solutions to pollution and waste at school

It is important to learn about solutions to climate change at school

79% agree

79% agree

73% agree

#### **INTERESTS**

The economic impacts of environmental issues

Alternative forms of energy

40% interested

Technological solutions to climate change

The societal impacts of environmental issues

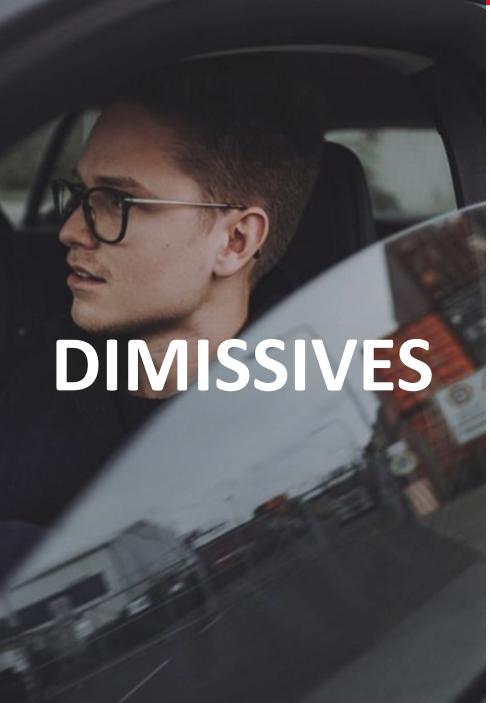
How I can reduce my carbon footprint

44% interested

40% interested

37% interested

31% interested





#### ATTITUDES, INACTION, AND BELIEFS

#### **ATTITUDES**

Canadian oil and gas is amongst the most environmentally responsibly produced on the planet

I am worried that moving away from fossil fuels will result in job losses in my community

The world's demand for energy is increasing

I can see the impacts of climate change around me already

91% agree

92% agree

85% agree

84% disagree

#### **INACTION**

It costs too much

I'm already doing everything I can do

I don't know enough about what I can do to make a difference

I'm not concerned about the environment

61% agree

54% agree

49% disagree

37% agree

#### **BELIEFS**

I feel worried about climate change

I am willing to make big changes in my lifestyle to help solve climate change (e.g. no driving or flying, purchasing less new materials).

I could be doing a lot more to reduce my impact on climate change

I'm not convinced that human activity has any bearing on climate change

I feel adults are not dealing with environmental problems

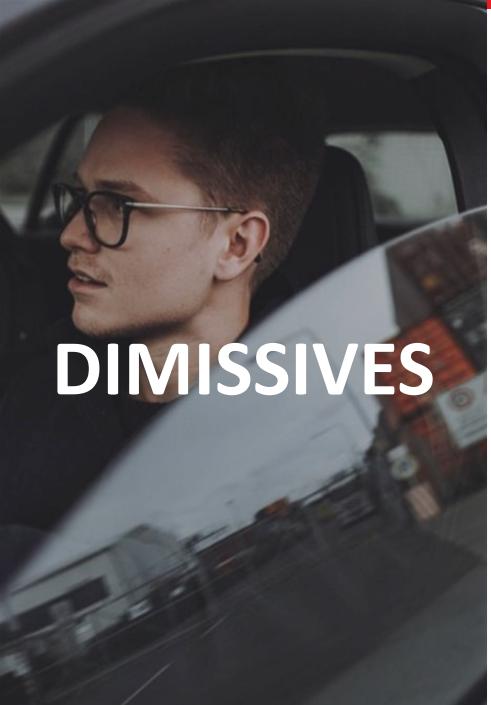
97% disagree

90% disagree

79% disagree

76% agree

68% disagree





#### KNOWLEDGE, EDUCATION, AND INTERESTS

#### **KNOWLEDGE**

How energy is produced, distributed, and used in Alberta

The sources of electricity in Alberta

The impacts of climate change in Canada

Efforts made by oil and gas producers to reduce their carbon footprint

57% knowledgeable

51% knowledgeable

46% knowledgeable

45% knowledgeable

#### **EDUCATION**

Educating students about climate change should be a high priority for schooling (Grades 4-12)

Climate change is too controversial to be discussed in classrooms

Lessons should teach students about policies for limiting climate change

It is important to learn about solutions to climate change at school

73% disagree

61% agree

59% disagree

51% disagree

#### **INTERESTS**

How I can reduce my carbon footprint

How to engage in creating change

The societal impacts of environmental issues

How climate change can impact different ecosystems

What others are doing to solve climate change

78% uninterested

72% uninterested

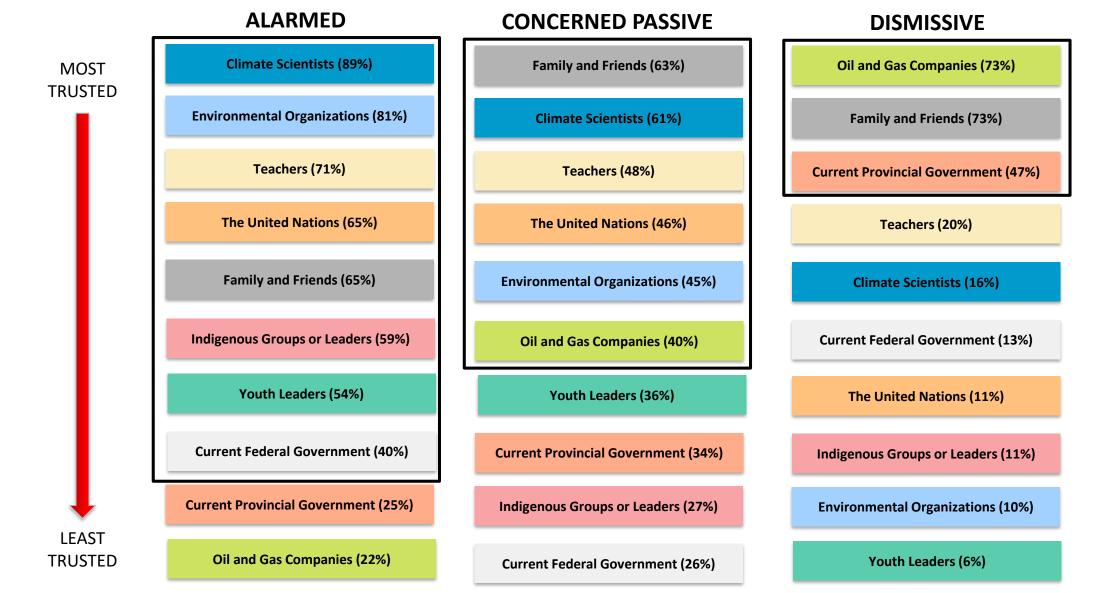
71% uninterested

66% uninterested

64% uninterested



# Trust in Regards to Energy and the Environment





# **Summary of the Segmentation**

Results of the segmentation analysis revealed that nine in ten youth demonstrate a moderate to extreme level of concern and motivation when considering the environment and climate change. This suggests that youth will be receptive to information pertaining to the environment and climate change, particularly those classified as "alarmed youth" (55% of youth).

One in ten Alberta youth, on the other hand, demonstrated a lack of concern regarding climate change and a lack of motivation to act. These individuals will be less receptive to information regarding climate change as they are less likely to be concerned with the topic. This segment of youth can be viewed as an education challenge. That is, this youth segment are individuals who may not be as receptive to information about climate change and, as a result, may be harder to reach through education. As this group is more interested in the energy industry, approaching education regarding climate change through this lens may have a positive impact.

Overall, results of the segmentation analysis will:

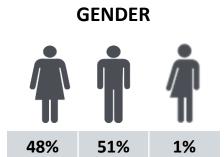
- Support a strategy to develop more effective education and outreach programs that are tailored and targeted to subgroups of youth who share similar values, beliefs, and/or behaviors about the environment and climate change.
- Allow for targeted messaging for enhancing climate change communication by addressing people's receptivity to
  information pertaining to climate change and/or their capacity to comprehend various messages around climate change
  based on their values, beliefs and behaviours.



# DEMOGRAPHICS



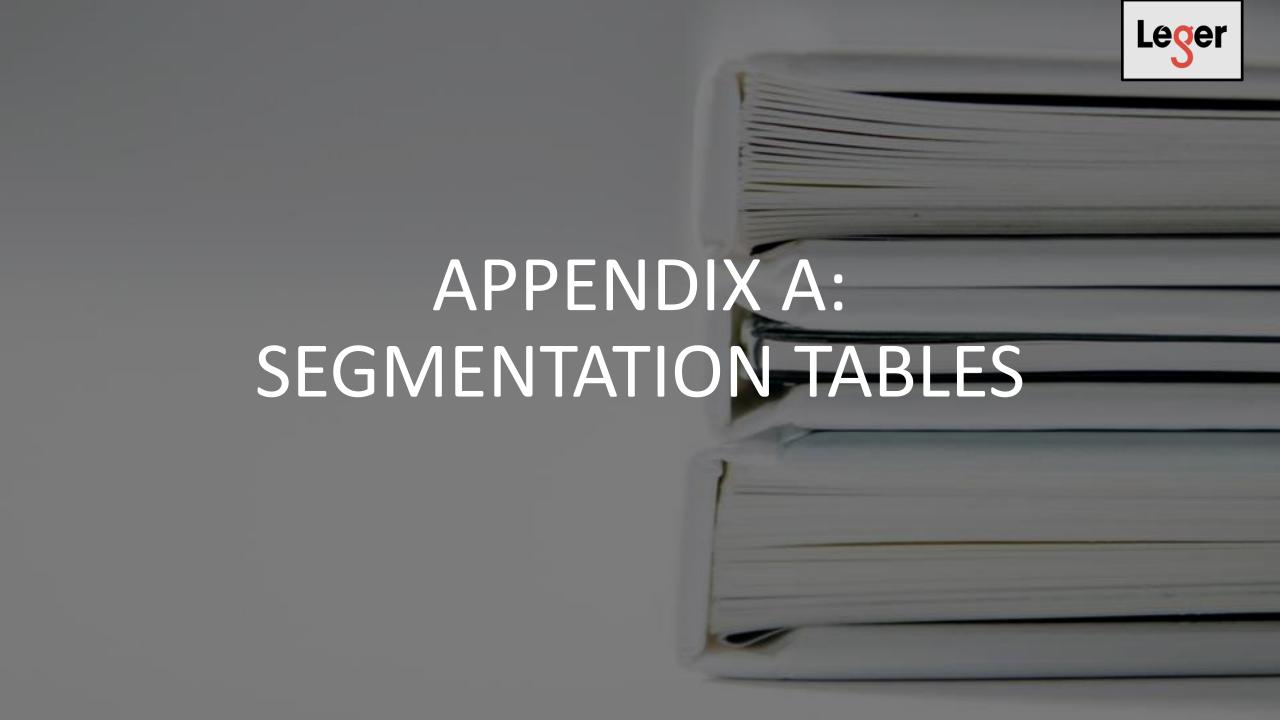
# **Demographics**



EDUCATION / EMPLOYMENT STATUS	
Attending High School / Junior High	35%
Attending a Post-Secondary Institution	40%
Seeking Full-Time Employment	7%
Employed (Full or Part-Time)	19%

REGION		
Calgary	30%	
Edmonton	24%	
Rest of Alberta	46%	

AGE (IN YEARS)		
15	9%	
16	10%	
17	10%	
18	13%	
19	12%	
20	11%	
21	8%	
22	13%	
23	9%	
24	6%	



# **Alberta Youth Perspective on Climate and Energy**

Q4. Please rate your level of agreement with the following statements.

	DISMISSIVE X	CONCERNED PASSIVE Y	ALARMED Z
Canadian oil and gas is amongst the most environmentally responsibly produced on the planet	91% (YZ)	59%	50%
The world's demand for energy is increasing	85%	92%	91%
New technologies can solve climate change without individuals having to make big changes in their lives	37%	53%	55%
I am worried that moving away from fossil fuels will result in job losses in my community	92% (YZ)	69% (Z)	51%
I can see the impacts of climate change around me already	12%	56% (A)	82% (XY)
We need to move quickly from our dependence on fossil fuels to a more diversified blend of energy including renewables such as solar and wind	19%	57% (A)	85% (XY)

# Reason for not doing more to protect the environment

Q5. For you personally, please indicate your agreement or disagreement with the following reasons why you might not be doing more to protect the environment.

	DISMISSIVE X	CONCERNED PASSIVE Y	ALARMED Z
I don't know enough about what I can do to make a difference	24%	58% (XZ)	40%
I don't have enough time	17%	42% (XZ)	21%
I'm already doing everything I can do	54%	37%	35%
My actions won't make a difference	37% (Z)	44% (Z)	16%
I'm not concerned about the environment	37% (Z)	23% (Z)	4%
No one else is doing anything, why should I?	25% (Z)	28% (Z)	1%
It costs too much	61% (Z)	51% (Z)	31%
It's not my responsibility to protect the environment	22% (Z)	14%	7%

# **Alberta's Future Environment Prediction**

Q6. For you personally, please indicate your agreement or disagreement with the following statements about the environment.

	DISMISSIVE X	CONCERNED PASSIVE Y	ALARMED Z
I could be doing a lot more to reduce my impact on climate change	11%	49% (X)	70% (XY)
It is possible to have a strong economy in Alberta while protecting the environment	69%	63%	92% (XY)
It is the responsibility of government and business, not individuals, to do something about climate change	25%	41% (X)	47% (XY)
Hearing about solutions to environmental problems makes me feel more hopeful about the future	17%	57% (X)	88% (XY)
I am worried about my future in relation to economy and the environment.	33%	63% (X)	83% (XY)
I feel worried about climate change	0%	51% (X)	90% (XY)
It is too late to solve climate change, and all we can do now is slow it down	22%	38%	39%
I'm not convinced that human activity has any bearing on climate change	76% (YZ)	27% (Z)	3%
I feel adults are not dealing with environmental problems	3%	55% (X)	82% (XY)
I am willing to make big changes in my lifestyle to help solve climate change (e.g. no driving or flying, purchasing less new materials).	8%	30% (X)	71% (XY)

Top 2 Scores Shown (Agreement 4-5/5) Note: Letters in parentheses indicate statistically significant differences.

# Trust in Regards to Energy and the Environment

Q10. When it comes to information about energy and the environment, please indicate how much you trust or distrust information provided from each of the following:

	DISMISSIVE X	CONCERNED PASSIVE Y	ALARMED Z
Current Provincial government	47% (Z)	34%	25%
Current Federal government	13%	26%	40% (XY)
The United Nations	11%	46% (X)	65% (XY)
Oil and gas companies	73% (YZ)	40% (Z)	22%
Youth leaders	6%	36% (X)	54% (XY)
Environmental organizations	10%	45% (X)	81% (XY)
Indigenous groups or leaders	11%	27% (X)	59% (XY)
Your family and friends	73%	63%	65%
Your teachers	20%	48% (X)	71% (XY)
Climate scientists	16%	61% (X)	89% (XY)

Top 2 Scores Shown (Trust 4-5/5)

72

CONCEDNED

Q11. How much do you feel you know about the following?

	DISMISSIVE X	CONCERNED PASSIVE Y	ALARMED Z
Global climate change	37%	33%	61% (XY)
The sources of electricity in Alberta	51%	39%	46%
Efforts made by oil and gas producers to reduce their carbon footprint	45%	28%	28%
What other countries are doing to reduce climate change	33%	22%	27%
The impacts of climate change in Canada	46%	29%	56% (Y)
What things I can do to make a difference to affect climate change	28%	37%	61% (XY)
How energy is produced, distributed, and used in Alberta	57% (Z)	35%	33%

# **Youth Perspectives on Education**

Q14. For you personally, please indicate your agreement or disagreement with the following:

	DISMISSIVE X	CONCERNED PASSIVE Y	ALARMED Z
Schools should teach about how technology is changing the way energy is produced	60%	85% (X)	96% (XY)
Educating students about climate change should be a high priority for schooling (Grades 4-12)	8%	57% (X)	85% (XY)
Climate change is too controversial to be discussed in classrooms	61% (YZ)	26% (Z)	9%
Lessons should teach students about policies for limiting climate change	16%	64% (X)	88% (XY)
It is important to learn about solutions to climate change at school	21%	79% (X)	94% (XY)
It is important to learn about solutions to pollution and waste at school	67%	81%	97% (XY)
It is important to learn about solutions to energy and environment at school	41%	73% (X)	96% (XY)

# Alberta Youth's Level of Interest in Learning About...

Q15. For you personally, please indicate your level of interest in learning about each of the following:

	DISMISSIVE X	CONCERNED PASSIVE Y	ALARMED Z
How energy is produced and used	39%	29%	58% (Y)
The impact that different forms of energy production have on our environment	13%	28%	73% (XY)
How climate change can impact different ecosystems	7%	30% (X)	70% (XY)
The economic impacts of environmental issues	30%	44%	62% (XY)
The societal impacts of environmental issues	9%	31% (X)	60% (XY)
How I can reduce my carbon footprint	4%	31% (X)	76% (XY)
Alternative forms of energy	16%	40% (X)	81% (XY)
Technological solutions to climate change	31%	37%	76% (XY)
What others are doing to solve climate change	10%	26%	65% (XY)
How to engage in creating change	0%	26% (X)	69% (XY)

Top 2 Scores Shown (Interest 4-5/5)

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