

Case study 1: How is energy shaped by policy?

Curriculum Links

This video series fits within the following high school courses across Canada. Teachers are encouraged to explore further connections to other courses in their province or territory.

Alberta <ul style="list-style-type: none">Grade 9 Social StudiesSocial Studies 10-1 or 10-2Social Studies 20-1 or 20-2Social Studies 30-1 or 30-2	British Columbia <ul style="list-style-type: none">Social Studies 11Political Science 12
Manitoba <ul style="list-style-type: none">Grade 9: Social StudiesGrade 12: Global Issues: Citizenship and Sustainability	New Brunswick <ul style="list-style-type: none">Civics 10Political Science 120Canadian Law 120
Newfoundland <ul style="list-style-type: none">Social Studies 1201/1202Social Studies 2201Social Studies 3201/3202Ethics and Social Justice 2106Career Development 2202	Northwest Territories <ul style="list-style-type: none">Grade 9 Social StudiesSocial Studies 10-1 or 10-2Social Studies 20-1 or 20-2Social Studies 30-1 or 30-2
Nova Scotia <ul style="list-style-type: none">Citizenship Education 9Global Politics 12Advanced Global Politics 12Law 12	Nunavut <ul style="list-style-type: none">Grade 9 Social StudiesSocial Studies 10-1 or 10-2Social Studies 20-1 or 20-2Social Studies 30-1 or 30-2
Ontario <ul style="list-style-type: none">Grade 10: Civics & CitizenshipGrade 11: Politics in Action: Making ChangeGrade 12: Canadian and International Politics	Prince Edward Island <ul style="list-style-type: none">Grade 9 Social StudiesCanadian Studies CAS401A
Québec <ul style="list-style-type: none">Monde ContemporainSensibilisation à l'entrepreneuriatHistoire du Québec et du Canada	Saskatchewan <ul style="list-style-type: none">Social Studies 10History and Social Studies 30Law 30
Yukon <ul style="list-style-type: none">Social Studies 11Political Science 12	

The Big Question

How is the energy sector influenced by public policy?

In video 9, we help public policy come to life through the lens of the energy sector. Through the voices of [Action Canada Fellows](#), young leaders in Canada all involved or interested in public policy, students will hear how the Fellows' work in the energy sector is influenced by public policy. The activities in this Teacher Guide will help students consolidate this learning by examining a policy that is directly related to the energy sector. More questions may be raised after viewing the video, teachers and students are encouraged to revisit the rest of the Policy 101 video series through the lens of the energy sector to deepen the discussion on this topic.

Learning Goals

Upon completion of this module, students will be able to:

- Explain how the energy sector is influenced by public policy.
- Describe how each level of government plays a role in energy policy.

Materials

You will need the following materials to complete the activities described in this Teacher Guide.

- Access to technology for video viewing
 - [How is energy shaped by policy?](#)
- Printed video transcript PDFs (if using)
 - These can be helpful for students who need support following the video, for English or French language learners or simply for annotation purposes
- Writing surface for class viewing (white board, Smart board, chalkboard or chart paper)
- Writing utensils for writing surface
- Access to technology for student research
- [Appendix 1: Levels of Government and Energy Policy](#) for each student
- [Appendix 2: Carbon Capture and Storage Regulations](#) for each student (if pursuing Extension Activities)

Pre-Video Activity

Tackle this activity before watching the video.

Minds On

Whole Group, 20 minutes

1. As a group, discuss the following:
 - a. How do you use energy on a daily basis in your home? At school? At work?
 - b. What do you know about the energy sector?
 - c. What are different sources of energy? Have you seen these energy sources in action? Where?
 - d. Why does the way we create and use energy matter?
 - e. How do you think the government influences how we create and use energy?

2. Ensure you take note of the responses given as these will be revisited after watching the video.

Post-Video Activities

After watching the video, dive into these post-video activities to further discussions and deepen learning.

Minds On Revisited

Whole Group, 15 minutes

1. Revisit the items discussed in the Minds On activity. Is there anything to add or edit?
2. Focus on the question: How do you think the government influences how we create and use energy?
 - a. Ensure students have a good grasp of the answer.
 - b. Rewatch the introduction and "How is energy shaped by policy?" as needed.

Policy Review

Independent - Whole Group - Pairs/Small Group - Whole Group, 45+ minutes

Special thanks to Cole Nychka for providing the example regulation listed below.

1. Ask students to take 10-15 minutes to review the federal policy: [Clean Fuel Regulations](#).

Summary: As described by Cole Nychka, this is an incentive program for companies providing liquid fuels like gasoline and diesel to lower carbon emissions. Companies get tax credits from the government for blending biofuels into their product or helping customers use lower carbon fuels like electricity, natural gas, or renewable natural gas. This credit can also be on top of any provincial/federal benefit under the Greenhouse Gas Pollution Pricing Act, so in some places companies get paid twice to reduce emissions once. This is driving new renewable natural gas facilities, EV charging networks, and natural gas/renewable natural gas vehicle fueling.
2. As a class, discuss the following:
 - a. What is the difference between a policy and a regulation?

ANSWER: Regulation sets the specific rules and requirements for how the law is applied and enforced. Legislation sets the direction and goals.
 - b. What are the Clean Fuel Regulations?
 - c. How do they work?

3. With a partner or in a small group, ask students to review the [Clean Fuel Regulations success stories](#).
 - a. Which success story do you find most compelling? Why?
 - b. Which success story do you have more questions about? Where might you research to find out more?
4. As a class, review the following detailed description of Cole's work. How would the Clean Fuel Regulations influence Cole's work?

Description of Cole's work: Cole helps manage rules and approvals for ATCO's electricity and gas utilities in Alberta. Includes exciting projects like bringing new, cleaner energy sources, such as Renewable Natural Gas, into the system.

TEACHER ANSWER KEY

Response from Cole

"One of the ways liquid fuel providers can lower their emissions is to use renewable natural gas. Renewable natural gas lowers emissions by recycling the carbon from organic waste (food waste, unused or spoiled crops, manure, etc.) and capturing methane that would be released as this organic waste decomposes. The Clean Fuel Regulations are a government policy that gives liquid fuel providers payments to use more renewable natural gas.

We, as a gas utility, help the companies producing renewable natural gas put their product into pipelines that connect them to liquid fuel providers. When the Clean Fuel Regulations encourage more renewable natural gas, we are able to put more renewable natural gas onto our pipeline system, less fossil natural gas is used, and greenhouse gas emissions are reduced."

5. As a class, discuss:
 - a. What other industries might this policy influence?
 - b. How might this policy influence your daily life?

Assessment: Worksheet

Whole Group - Independent, 30 minutes

1. As a class, review the worksheet completed for [Video 5: What does the government do & how does it relate to public policy?](#)
 - a. If your class has yet to complete this worksheet, take 7 min to watch [Video 5: What does the government do & how does it relate to public policy?](#) as a refresher.
2. Ask each student to complete [Appendix 1: Levels of Government and Energy Policy](#) to demonstrate their knowledge from this video. While completing the worksheet, students will be asked to:
 - a. Identify how each level of government influences public policy within the energy sector.

- b. Identify how each policy area impacts them, or consider what elements of each policy area they are interested in.
3. Ask students to hand in their completed worksheet. Use these to assess student learning. Follow up with individual students who may need more clarity.

Extension Activities

Interested in continuing the learning? Try the activities below.

Carbon Capture and Storage Regulations

Whole Group – Small Groups – Whole Group, 45+ minutes

Special thanks to Alexandria Shrake for providing the descriptions of the acts & regulations listed below.

1. Ask the class what is carbon capture and storage? Collect any responses from students.
 - a. Take a moment to consolidate the discussion with a definitive answer.
NOTE TO TEACHER: You can choose to research this answer beforehand and provide it to students or include students in the research process.
2. There are many regulations that collectively form the frameworks in which carbon capture, utilization, and storage is possible. Discuss as a class:
 - a. What is the difference between a policy and a regulation?
ANSWER: Regulation sets the direction and goals, while regulations establish the specific rules and requirements for how the law is applied and enforced.
3. Break students into three groups. Each “expert group” will look more deeply into one of the regulations below. Provide each student with the corresponding page for their regulation from [Appendix 2: Carbon Capture and Storage Regulations](#).
4. Allocate an amount of time for “expert groups” to review their regulation while considering the following questions:
 - a. Describe your regulation in 2-5 sentences.
 - b. How does your regulation influence carbon capture and storage?

Alert the class that everyone needs to take notes as each student will be responsible for sharing their learnings to a new group.
5. Put students in new “jigsaw groups”, ensuring there is at least one member from each of the three “expert groups” represented in each “jigsaw group.” Allocate a certain amount of time for each “expert” to share their knowledge and answers to the discussion questions with their new group.
6. Ask each “jigsaw group” to pick the regulation they think has the biggest potential to impact carbon capture and storage. Discuss:

- a. Why did they choose this regulation?
 - b. What challenges do they foresee in implementing this act or regulation?
 - c. What successes could come from it?
7. Regroup as a class and have each “jigsaw group” share their chosen regulation and a short summary of their answers to the discussion questions.

A. Carbon Capture, Utilization and Storage Regulations: [Alberta Energy Regulator](#)

Special industries such as car manufacturing and the energy sector can't construct facilities or operate without guidelines that instruct them on construction standards and operational procedures. Just like getting a driver's license or registering a car, companies need licenses or permits to operate and to register their carbon capture facilities. How carbon capture facilities should operate is like the rules we follow on the road to operate safely. These regulations dictate how to build carbon capture facilities and where to store the captured carbon underground, thousands of meters deep. Alberta, with a history in oil and gas regulation, licensing, and reclamation – has a strong regulatory body that has developed clear regulations for carbon capture, utilization, and storage.

B. Incentives for Investment: [Canada Growth Fund](#)

Regulations also create conditions for companies to invest in the steel and metal infrastructure required for carbon capture and safe storage. Around the world, countries advertise their Nation's incentives to encourage investment. An example of this in Canada is the Canada Growth Fund. A \$15B fund for decarbonization technologies and projects. This may sound like a lot, but early-stage technologies are one industrial project that can cost anywhere between \$200M and over \$1B Canadian dollars.

C. Creating a Carbon Market: [Alberta Technology Innovation and Emissions Reduction Regulation](#)

A carbon market is a system where companies buy and sell carbon credits, allowing them to offset their greenhouse gas emissions by supporting projects that reduce or capture carbon. To create a carbon market, governments or organizations set emission limits and issue carbon credits to companies that meet or exceed these limits, incentivizing lower emissions. Companies that cannot meet the limits can buy credits from those with extra, creating a financial incentive to reduce emissions. In Alberta, an example of this is the Technology Innovation and Emissions Reduction Regulation.

Deep Dive Class Discussion

Whole Group, 20+ minutes

The energy sector in Canada is a big topic. Depending on your class interests you may want to dive deeper through a class discussion.

1. As a class, continue your discussion about the energy sector. Consider the following discussion starters using direct quotes from the video.
 - a. "Energy policy is super important because Canada is a major producer and exporter of energy. In Canada, we have many energy sources, including oil, natural gas, hydro, nuclear, wind, and solar, and many more."
 - i. What do you know about Canada's energy production and exporting? What do you want to know more about?
 - b. "Energy policy in Canada aims to find the balance between economic benefits, like jobs, environmental protection, like reducing emissions, and energy security, like ensuring a stable supply."
 - i. Why are each of these areas important?
 - c. "Access to energy means a lot of intangible things, too. It means more stability in our society. It means access to good food. It means healthier lives. It means longer lives. It means better literacy rates in your community. So energy to me is quality of life. And having access to energy means a better quality of life."
 - i. How does access to energy impact each of these elements: access to good food, healthier lives, longer lives, better literacy rates in your community?
 - ii. Do you agree with Kay's description about how access to energy impacts quality of life? Why or why not?

Mini Research Project

Independent (Optional: Pairs), 20+ minutes

If the room is still buzzing with interest in the energy sector, consider beginning an independent (or partner) mini research project with students.

1. Ask students to think about what questions the video brings up about energy production, energy use and energy policy in Canada.
2. Ask students to write down 1-5 questions. After reflection, ask students to choose 1-2 questions to look into further.
 - a. Optional: Ask students to discuss their questions with a partner. As a pair, pick 1-2 questions to explore together.
3. Ask students (or pairs) to do a quick internet search to answer their question(s). They must refer to 2-3 reputable sources. Ask students (or pairs) to write a brief one paragraph answer to share back to the class.

About the Policy 101 Video Series

The Policy 101 Series breaks down public policy into digestible content for students through engaging videos, podcasts, and teacher guides. These modules empower students to learn the basics of public policy and critically analyze its implications. The series aims to sow the seeds for a future where youth play an active role in shaping the policies that shape their lives.

Appendix 1: Levels of Government and Energy Policy

Level of Government: PROVINCIAL/TERRITORIAL
How does this level of government play a role in energy policy?
How does this policy area impact you? Or what elements of this policy area are you interested in?

Level of Government: FEDERAL
How does this level of government play a role in energy policy?
How does this policy area impact you? Or what elements of this policy area are you interested in?

Level of Government: INDIGENOUS
How does this level of government play a role in energy policy?
How does this policy area impact you? Or what elements of this policy area are you interested in?

Appendix 2a: Carbon Capture and Storage Regulations

Carbon Capture, Utilization and Storage Regulations

Carbon Capture, Utilization and Storage Regulations: [Alberta Energy Regulator](https://www.aer.ca/providing-information/by-topic/carbon-capture)

<https://www.aer.ca/providing-information/by-topic/carbon-capture>

Special industries such as car manufacturing and the energy sector can't construct facilities or operate without guidelines that instruct them on construction standards and operational procedures. Just like getting a driver's license or registering a car, companies need licenses or permits to operate and to register their carbon capture facilities. How carbon capture facilities should operate is like the rules we follow on the road to operate safely. These regulations dictate how to build carbon capture facilities and where to store the captured carbon underground, thousands of meters deep. Alberta, with a history in oil and gas regulation, licensing, and reclamation – has a strong regulatory body that has developed clear regulations for carbon capture, utilization, and storage.

What is carbon capture and storage?

Describe your regulation in 2-5 sentences.

How does your regulation influence carbon capture and storage?

Appendix 2b: Carbon Capture and Storage Regulations

Incentives for Investment

Incentives for Investment: [Canada Growth Fund](https://www.cgf-fcc.ca/)

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Regulations also create conditions for companies to invest in the steel and metal infrastructure required for carbon capture and safe storage. Around the world, countries advertise their Nation's incentives to encourage investment. An example of this in Canada is the Canada Growth Fund. A \$15B fund for decarbonization technologies and projects. This may sound like a lot, but early-stage technologies are one industrial project that can cost anywhere between \$200M and over \$1B Canadian dollars.

What is carbon capture and storage?

Describe your regulation in 2-5 sentences.

How does your regulation influence carbon capture and storage?

Appendix 2c: Carbon Capture and Storage Regulations

Creating a Carbon Market

Creating a Carbon Market: [Alberta Technology Innovation and Emissions Reduction Regulation](https://www.alberta.ca/technology-innovation-and-emissions-reduction-regulation)

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A carbon market is a system where companies buy and sell carbon credits, allowing them to offset their greenhouse gas emissions by supporting projects that reduce or capture carbon. To create a carbon market, governments or organizations set emission limits and issue carbon credits to companies that meet or exceed these limits, incentivizing lower emissions. Companies that cannot meet the limits can buy credits from those with extra, creating a financial incentive to reduce emissions. In Alberta, an example of this is the Technology Innovation and Emissions Reduction Regulation.

What is carbon capture and storage?

Describe your regulation in 2-5 sentences.

How does your regulation influence carbon capture and storage?