

CAREERS IN THE CANADIAN ELECTRICITY INDUSTRY

Overview

In this activity, students will explore a variety of careers in the energy sector. Students will begin by brainstorming where careers in the energy sector may be found across Canada using the Electricity Human Resources Canada Giant Floor Map. Students will then learn about careers through videos embedded in the map, discuss what professional skills and personal interests would be assets for different careers, and consider unique features about different job locations. Next, students will choose a subset of careers to explore in more detail. The activity will end with students sharing the careers they discovered, and reflecting on how obtaining a career in the energy sector can be a climate-positive action.

After completing the lesson, students will be able to answer the questions:

- Why might some energy careers be found in certain regions of Canada?
- What careers are available in the electricity sector?
- What professional skills and education qualifications are necessary for different energy careers?
- What do workplaces look like in the electricity sector?
- What personal interests might lead to a career in electricity?
- How can a career in energy help contribute to Canada's commitment to net-zero emissions?

Lesson implementation

Minds on (15 minutes)

Have students walk around the Giant Floor Map and ask them to locate the QR codes. Ask them what they think the QR codes will lead to, using clues found on the map. Each QR code is outlined with a specific colour. Explain that there are 73 QR codes on the map which will lead to a collection of short videos profiling different careers and organizations in the Canadian energy sector. Explain the colour coding system so students understand that the videos have been categorized according to career type: yellow for college programs, green for skilled trades, blue for university programs, gray for special projects, and pink for corporate positions.

In small groups, ask students to brainstorm different careers they know of in the energy sector (e.g., technicians, construction workers, engineers, scientists, researchers, analysts, operators, health and safety workers, human resources).

Looking at the map, ask groups to identify where in Canada these careers might be located and why. Discuss answers as a class.

For example, the Prairies have the highest solar potential due to their flat topography, latitude, and climate. Here, you would find careers involved in solar technology, such as a solar technician. Similar to solar resource potential, southern Alberta and Saskatchewan (as well as coastline regions in many of the maritime provinces) have incredible wind power potential. These locations can support wind technology and careers such as that of a wind turbine technician.

Action (60 minutes)

Part 1: What are the unique characteristics of careers in the electricity sector?

In this activity, students will explore careers in the energy sector through videos and think about the responsibilities and unique characteristics associated with each job. If needed, explain the terms on the **Career matching cards**. Ask students to help you distribute the **Career matching cards** around the Giant Floor Map. (Students will be moving around to pick these up so ensure they are spaced out evenly and mixed up.)

Divide students into small groups and give each group a device. (**Note:** Students will be watching videos on these devices. If there are too many videos playing simultaneously, consider giving each student their own device to use with headphones).

Explain to students that they will be learning about careers in the energy sector through videos created by Electricity Human Resources Canada (EHRC) using the Giant Floor Map's QR codes. The videos can be viewed by scanning the associated QR codes with a smartphone or tablet. On the phone or tablet, open the built-in camera app. Point the camera at the QR code. Tap the banner that appears on the phone or tablet.

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Time

90 minutes (can be divided)

Grade

4 - 12 (modifications provided for younger students)

Subjects

- Environmental science
- Science
- Social studies
- Technology
- Careers

Topics

Renewable energy; climate change; Civics and careers

Materials

- Devices that are connected to the internet and have QR code scanning ability (i.e. phone or tablet) (1 per group)
- Energy careers worksheets (4 per group)
- Dry erase markers
- Career matching cards (40)
- **Optional:** Headphones

Follow the instructions on the screen to open the video in YouTube. Encourage students to walk around in their groups and locate a QR code to scan. They can then watch the associated video to learn about that career.

After watching the video, give students a few minutes to walk around the map and locate three **Career matching cards** that they believe relate to their career. The cards contain a range of topics, including personal interests, professional skills, education, working conditions/environment, and location. Students should note that there are many cards that may apply to their career, but they may only select three.

Example: A group may watch a video about a wind turbine technician and choose the cards "risk," "technology" and "physical work." There would be risk involved in working at elevated heights, it is physical work to maintain turbines, and you would need an understanding of technology to safely work on this machinery. Health and safety is of the utmost importance in the electricity sector, and this is reflected in the vigorous training and safety precautions found in every career.

Note: If students are having difficulty choosing or locating a card, have them come up with their own keyword(s). Remind students to be aware of their surroundings as they move around the space and that it is not a race.

Once students have their three cards, ask each group to share with the class the career they learned about, what career category it belonged to, and why they chose those three **Career matching cards**. Once groups have finished, have students replace the cards and repeat the activity again, asking students to watch a different video from a different career category. This activity can be repeated numerous times or students can move on to the next activity to consider these careers in more detail.

Part 2 (or alternate activity): A road map to careers in the energy sector

In this activity, students will watch up to five videos (one from each career category) and explore the skills and education requirements for each career.

Divide students into small groups and distribute up to five **Energy careers worksheets** and a few dry erase markers per group. **Note:** If needed, please see instructions in Part 1 about how to scan QR codes and how to distribute devices among students.

Have students move around in their groups and select up to five QR codes to scan (one from each career category: skilled trades, university programs, college programs, special projects, or corporate positions) and watch the associated videos. If students also completed part one of this section, ensure the videos they watch are different than the ones previously viewed. After watching the videos, students should discuss the careers they learned about and fill out the worksheets as a group. Encourage students to do research if they are unsure about the skills or education required of a career. Once the groups have finished profiling their careers, bring the class together again.

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Learning objectives

Upon completion of the lesson students will be able to:

- Appreciate how Canada's geography impacts where energy careers are found in the country.
- Identify a variety of careers in Canada's energy sector.
- Name professional skills and educational backgrounds required for different careers.
- Understand how a career in Canada's energy sector can be a path to supporting Canada's commitment to reducing greenhouse gas emissions.

Connections to the Canadian Geography Learning Framework

Geoinquiry

- Interpret and analyze
- Evaluate and draw conclusions
- Communicate
- Reflect and respond

Geospatial skills

- Foundational elements
- Spatial representations

Concepts of geographic thinking

- Spatial significance
- Patterns and trends
- Interrelationships
- Geographic perspective

Conclusion (15 minutes)

Ask students what surprised them most about the different careers they researched. Some answers might include: the variety of careers in the energy sector, the amount of careers related to sustainable and renewable energy, the educational requirements of different careers, or a career that interested them that they had not considered before. Ask if any students would like to share a career that they are now interested in learning more about. Students can reflect on the professional skills they currently have and their interests, and how those could align with a career they learned about in this activity.

Conclude the activity by having a discussion about how the different careers discussed in this activity can provide a means of supporting Canada in its pledge to reduce greenhouse gas emissions. Explain to students that Canada has a goal to reach **net-zero emissions by 2050**. Advancements in "green" technology and renewable energy sources are essential to help Canada reach this goal. How can a career in the energy sector help our society mitigate climate change? As we saw today, there is a large variety of careers in Canada's renewable energy sector. All of these careers are integral to the organizations and facilities that are helping accelerate renewable energy production which reduces Canada's reliance on fossil fuels.

Ask students to reflect on what type of environmental future they would like to see for the planet. How is their home powered? How do they get around? What does the infrastructure of their city look like? Have an informal discussion about what advancements and changes need to happen in Canada to make this happen. Careers in the energy sector are helping make these advancements and changes a reality. People in these careers are making a real change in the world, and this change needs to be sustained long-term for the benefit of people and the planet as a whole.

Modifications

There are many ways in which this activity can be modified for different age groups. Here are some of our suggestions:

Younger students:

- Perform the activities as a class rather than in groups.
- Reduce the amount of **Career matching cards** required for each career.
- Reduce the amount of videos groups need to watch.
- Remove any **Career matching cards** you feel are not appropriate for your class.
- Focus only on professional skills in the **Career matching cards**. At the beginning of the activity, explain what each professional skill means. Run a role-playing activity where students need to demonstrate each skill in a scenario (e.g. Practice active listening by listening to a partner describe their morning routine by staying still and making eye contact.) Use the EHRC's [Introduction to Professional Skills](#) website for more information.

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Older students:

- Have students create a full profile of a career that interests them, including educational institutions offering the training required and the cost of tuition, salary, companies that hire for this position, a projected career path and potential volunteer, intern, or work-integrated learning (WIL) opportunities.
- Have students research current job opportunities in the energy sector for a career that interests them.
- Increase the amount of videos to be watched.
- Do a more in-depth exploration of Canada's geography using the Giant Floor Map and how that geography would present different opportunities for renewable energy.
- In groups, have students debate which **Career matching card** is most important for their career.

Extend your learning

Once students have had a chance to interact with the Giant Floor Map, encourage them to take their learning beyond the classroom! Here are some extension activities which should allow students to take action based on their knowledge of careers in Canada's energy sector:

- Have students select a career in the energy sector that interests them and organize an interview with someone in that position.
- Students can research how to get started in the electricity sector by exploring EHRC's [Getting Started](#) website. Here they can learn about work-integrated learning (internships, co-ops), mentorship programs, and more.
- Some Indigenous students (ages 10-13) may be eligible for the [Bright Futures Energy](#) camp, which seeks to encourage interest in careers in the electricity sector through STEM.

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Supporting resources

- [Canada's Energy Transition](#)
- [EHRC Bright Futures Energy Camp](#)
- [EHRC Getting Started in Electricity: Students](#)
- [EHRC Introduction to Professional Skills](#)
- [The future of Canada's energy sector](#)