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**CANADA'S
ENERGY
LANDSCAPE**



**ENERGY
EDUCATION**

TOOL KIT

BY INSIDE EDUCATION



CANADA'S ENERGY LANDSCAPE

GUIDING QUESTIONS

- Why is energy so important to Alberta?
- Where does Alberta fit into Canada's energy story?
- How do we move energy resources across Canada?
- What environmental, social, and economic factors are considered when producing and transporting energy?

Canada is the fifth largest energy producer in the world and Alberta plays an important role in Canada's energy landscape. There are nine main natural resources used for energy in Canada.



Energy is transported through an extensive network of pipelines, rail lines, and transmission lines, allowing large amounts of oil, natural gas and electricity to be transported over long distances.

Pipelines move oil and natural gas. **Rail lines** move oil, natural gas and coal. **Transmission** lines move electricity. The network serves both Canada and the rest of the world.

There are many steps involved in producing energy including consultations, environmental assessments, resource extraction, transportation, reclamation and processing. We must consider the environment, society and economy every step of the way!



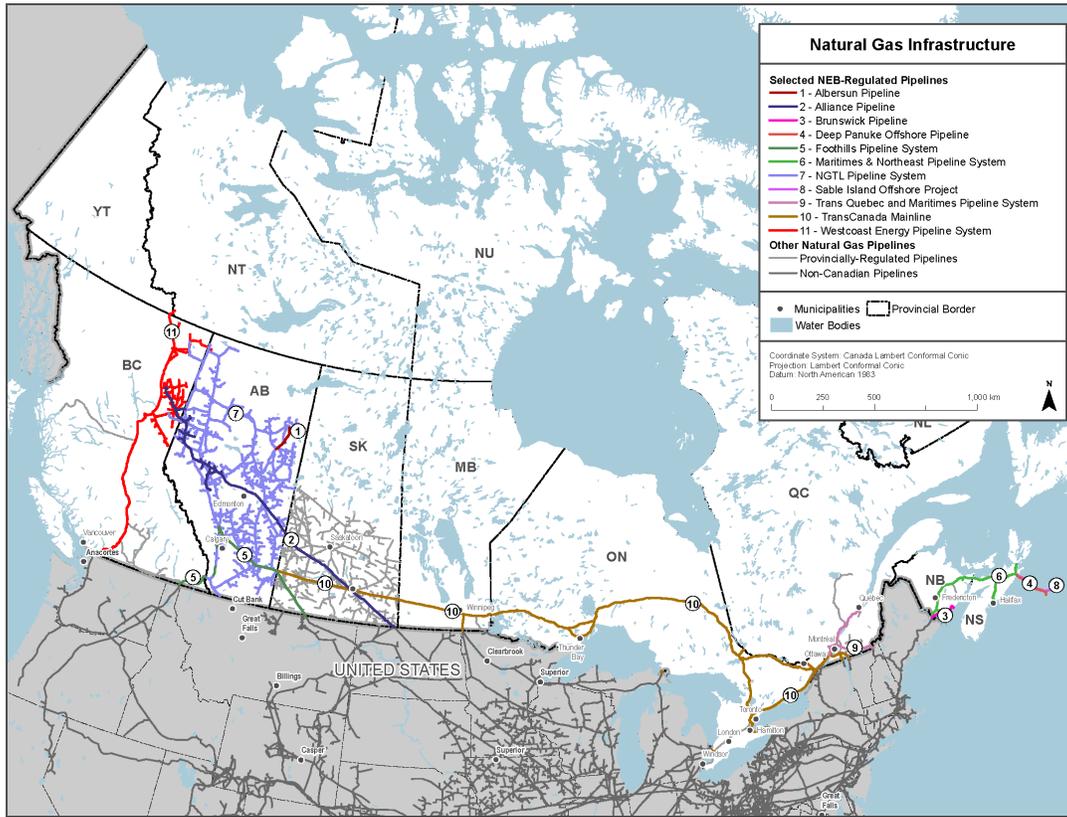
A pipeline carries oil or natural gas.



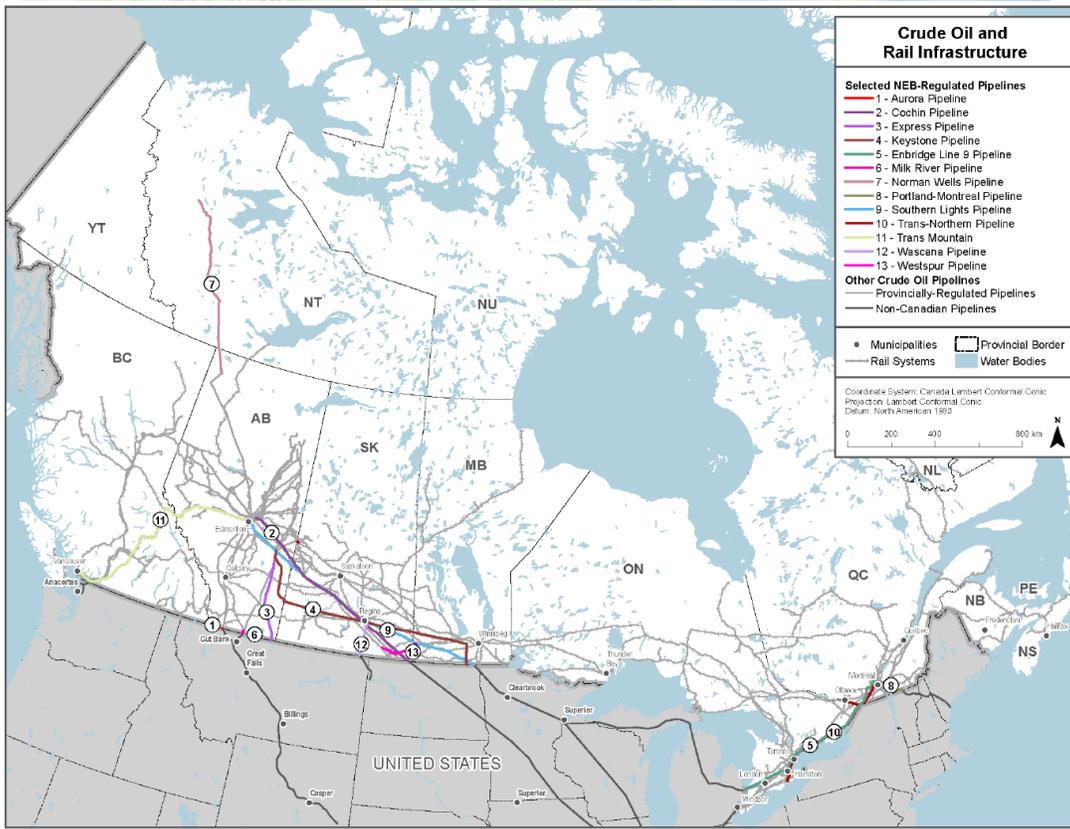
A rail line carries oil, natural gas or coal.



A transmission line carries electricity



Natural Resources Canada map of natural gas transportation by pipeline.



Natural Resources Canada map of crude oil transportation by pipeline and rail.

MATERIALS FROM KIT

- Energy Moves Board Game (1 roll-out board, 62 cards, 1 dice, 4 game pieces)

TRY THESE ACTIVITIES

- Play the Energy Moves Board Game!

CONSIDER ...

The energy products you use every day. Every time you turn on a light or drive in a car you are using energy. How can you reduce the amount of energy you use? Why is it important to reduce the amount of energy you use?

CONNECT ...

Electricity is transported to your home and school by transmission lines. Have you ever noticed a transmission line in your community?

Think about someone you know who lives in Eastern Canada or the United States. Some of the fuel in their vehicles likely comes from Alberta, and some from abroad. What are the benefits of using resources from Canada? What are the challenges?

LEARN MORE ...

Technology is improving to detect leaks before they happen and locate spills quickly.

Check out **SmartBall** technology:

- A SmartBall uses a hydrophone, which is an extremely sensitive microphone, to listen for high-frequency noises that indicate leaks.
- A SmartBall can locate holes that are as small as a pin!

Research how the energy industry is reducing impacts on wildlife populations.

Check out how **Cenovus Energy** is working to improve woodland caribou habitat:

- Planting 5 million trees on old seismic lines and roads
- Piling mounds of soil and trees on open pathways to make it harder for predators like wolves to find and catch caribou — a species at risk.
- Mounding soil in swampy areas creates drier conditions for trees to grow, which provide food and shelter for caribou.
- Sharing what they do with other companies so they can learn from each other.



<https://www.enbridge.com/Stories/Piping-Up-For-Technology-Part-8-SmartBall.aspx>



Caribou on an old seismic line

Cenovus Caribou Habitat Restoration Project

Over the past several decades, the oil and gas industry has created seismic lines, access roads and other types of linear disturbance in the forests of northern Alberta for resource exploration and development. While modern techniques for these activities are much less invasive and are designed to promote natural regeneration, some of the linear disturbance created 20 or 30 years ago did not naturally return to forest cover. These open corridors attract deer and moose as well as their predators into caribou habitat. This has made caribou more vulnerable to predation, especially by wolves.

Source: <https://www.cenovus.com/news/docs/Cenovus-caribou-project-factsheet.pdf>