

# Energy Literacy in Alberta

Starting the Conversation - February 2020

## Why is energy literacy important for Alberta students?

Students need to understand our energy choices in the context of environment, society and economy to be active citizens during this time of energy transition that will be a key factor in their lifetime. Preparing students to deal with the complexity and challenges of an energy transition is crucial for Alberta - both for our future prosperity and for dealing with climate change. Students do understand Alberta's context - our economic prosperity and need for oil and gas. They also hear all of the climate crisis messages and the polarized conversations around these topics. They don't know what to do and this leads to anxiety about their future. Engaging them in deep learning around energy and the environment gives them hope that the energy transition can be managed to ensure continued prosperity and provide climate solutions and this then also gives them hope for their future.

These are some high-level ideas on what deep learning would help students be able to do.

- Create innovative solutions that are 'win, win' instead of 'either/or' for environment, society and economy.
- Be critical thinkers and problem-solvers - how to think, not what to think.
- Analyze energy costs, savings and greenhouse gas emissions to help them develop innovative solutions.
- Use "yes, and..." thinking to navigate a constantly changing future. E.g. YES Alberta's heritage and prosperity is based on our energy industry and YES there is a current need for these energy sources and YES Alberta can be an energy leader in the global energy transition to a low carbon economy providing both prosperity and a healthy environment.

## What is Energy Literacy?

At a workshop in August 2019, ACEE and energy education colleagues reviewed the [Energy Literacy Framework](#) definition of Energy Literacy as well as other definitions. They generated a working definition of Energy Literacy:

**Definition:** Energy literacy is an understanding of the forms, properties, role and impacts of energy in the world and in our daily lives, accompanied by the ability to apply this understanding to answer questions and solve problems.

An energy-literate person:

- Can trace energy flows and think in terms of circular energy systems.
- Knows how much energy they use, for what purpose, where the energy comes from (including production, transformation and distribution) and environmental impacts.
- Can assess the credibility of information about energy.
- Can communicate about energy and energy use in meaningful ways.
- Is able to make informed energy policy decisions and strives to make personal energy use decisions based on an understanding of impacts and consequences on our economy, society and environment.

## What do students need to know to be energy literate?

We are currently reviewing relevant work that can help guide what students need to be energy literate in an Alberta context and gathering input from energy, environment and education professionals. There has not been much work done to identify what it means to be energy literate and we know this is a fast-changing topic. We've pulled together some recent work to help you begin thinking about 'what students should learn about energy?'

The [Energy Literacy Framework 2017](#), created by the Environmental Protection Agency, outlines seven essential principles and fundamental concepts:

1. Energy is a physical quantity that follows precise natural laws.
2. Physical processes on Earth are the result of energy flow through the Earth system.
3. Biological processes depend on energy flow through the Earth system.
4. Various sources of energy can be used to power human activities, and often this energy must be transferred from source to destination.
5. Energy decisions are influenced by economic, political, environmental and social factors.
6. The amount of energy used by human society depends on many factors
7. The quality of life of individuals and societies is affected by energy choices.

On August 26th, Alberta energy educators reviewed the Energy Literacy Framework and also identified some key concepts they feel are important for energy literacy.

- Circular energy systems - the big picture - or energy in a societal context
  - What is energy? Sources
  - Where does it come from? Production, transmission, distribution, delivery
  - How do we use it?
  - What is its value to our society and economy/quality of life?
  - What are the impacts? Air/climate, land and water
  - What actions can we take to reduce impacts?
- Solutions that instill hope and act on climate change:

- Efficiency, conservation
- Energy transition - renewables, low carbon
- Innovation and technological advances
- Globalization of energy - understanding the global context and the national and provincial context and then urban, rural and Indigenous context
- Preparing for careers/jobs of the future - options in trades/college/universities - new jobs

## What will we do with the information gathered in the workshops?

We will use this information to update the [Curriculum for a Sustainable Future](#) - a document created in 2014 to assist curriculum developers in understanding what students need to know to be environmentally, climate and energy literacy. We will then share the 2020 version with Alberta Education and other education leaders in Alberta and invite you to join us in doing this.

**Note: A curriculum tells teachers WHAT to teach, not HOW to teach**