



**Alberta
Emerald
Foundation**

Emerald Youth Grants

Study Guides

ATCO and Three Nations Energy (3NE)



30th Annual Emerald Award Recipient
Energy

Syncrude

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About the Alberta Emerald Foundation



We're Alberta's environmental good-news storytellers!

The Alberta Emerald Foundation (AEF) is nonprofit organization that showcases and inspires our province's environmental achievements through the annual Emerald Awards. Through our Sharing Stories Communications Strategy, the incredible work of Emerald recipients is highlighted and celebrated year-round. What began as the Emerald Awards in 1992 has evolved into an ongoing conversation.

The AEF empowers the next generation by providing grants to youth-led and youth-targeted environmental initiatives in our province. The Emerald Educational Engagement Grants Program funds up to 30 groups a year for their dream environmental project inspired by the Emerald Documentary Series, What On EARTH Can We Do? Podcast, and Emerald Speakers Series. After finding inspiration from this content featuring Emerald recipients, submit your pitch to us online. If it's accepted, you will receive \$750, thanks to our sponsor Syncrude Canada Ltd., to make your project a reality.

We encourage you to use this study guide as a resource to help you along in your project's journey. For more information, please visit

www.emerald.foundation.ca

Overview

What they're all about

Project Name: Charting the path to a sustainable future: Fort Chipewyan Off-Grid Solar Farm and Storage

Mission: Delivering inspired solutions for a better world. Always there. Anywhere.

Fort Chipewyan (Fort Chip), a **remote community** of 1,000 people, has traditionally relied on **diesel** generation for its **electricity**, due to not being connected to the main Alberta power grid. Every year, diesel is transported by trucks on **winter roads** that are only open for a six-week period. The community was outgrowing the existing diesel tank supply and a **sustainable** solution was needed. Rather than add more diesel tank storage, ATCO and 3NE installed the largest **off-grid solar** and **storage** microgrid project in Canada, reducing the community's reliance on diesel generation.



Some of the great parts about this project is that it:

- Reduces **diesel** use by 800,000 L each year
- Reduces CO2 **emissions** by 2,145 tonnes each year
- Reduces number of diesel trucks on **winter roads** by 25 annually
- Is 25% **renewable energy**
- Does not increase community **electricity** rates
- Improves **air quality**, reduces noise, and has less environmental risk
- Enables **community ownership** and self-sustaining economic development through job creation, investment in infrastructure and revenue from the sale of clean energy.

The solar array is now completely owned by Athabasca Chipewyan First Nation, Mikisew Cree First Nation, Fort Chipewyan Métis Local 125.

Projects like this one help to set up **future generations** for success.

Key Terms

Know your lingo



Air quality: how clean or polluted the air is. If the air is clean, then it has good air quality.

Battery: a sort of container that stores energy until it is needed.

Community ownership: the members of the community are the owners of the project, rather than a government or company, and get to have control over what is done and how it is done. Community ownership recognizes that the knowledge of how to run programs and projects exists within and can be improved upon by the people, families, and neighbourhoods that host projects.

Electricity: the flow of particles called electrons and protons. Energy is created when electrons flow from place to place, and then can be used to power things like light bulbs.

Emissions: something being released out into the open. Most commonly, gases or substances being released into the air, which can be harmful to the environment. An example is carbon dioxide (CO₂) which is “emitted” through burning fossil fuels, like diesel.

First Nations: a term used to describe Indigenous peoples in Canada, who are not Métis or Inuit. First Nations people are original inhabitants of the land that is now Canada, and were the first to encounter sustained European contact, settlement and trade.

Future Generations: a generation is a group of people born and living at the same time. Future generations means the people that will be born and alive sometime in the future.

Renewable energy: energy from a resource that does not get “used up”, and that nature can replace. Examples include: wind, water, and sunshine. Also called “clean energy”.

Off-Grid: not connected to or served by publicly or privately managed utilities (such as electricity, gas, or water).

Solar Power: light, heat, and other energy given off by the Sun, which can be used as heat and to make electricity.

Sustainability: meeting our needs and using natural resources in a way that we could keep doing for a long time. This can be done through reducing the amount of resources that we use.

Winter Roads: roads that are on ice, and therefore only open for a few weeks in the winter when the ice is strong enough to drive on. These are common in Northern Canada, even including parts of Alberta.

Conversation Questions

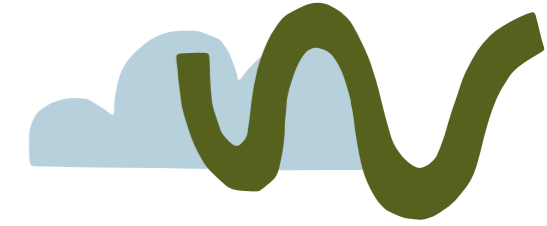
Let's talk about it

- What problem did ATCO and Three Nation Energy (3NE) address? How do they address the problem?
- What are some of the challenges of living remotely? What are some ways to address those challenges?
- What types of technologies use batteries? How do the batteries work?
- What are some of the benefits of the community being involved in the project?
- What can you do to help the next generation?



Continuing Work

Inspiration for your Emerald Youth Grant



- Spend a day trying to use no electricity at all to see what it would be like to not be connected to the energy grid, like many Northern communities in Alberta. Consider the ways that this would impact your everyday life.
- Count the number of items in your house that use electricity.
- Ask your school and/or community to install electric vehicle (EV) charging stations.
- Check and update your school or office's energy efficiency using an accredited guide, and do a fundraiser campaign to help install innovations to make your space more energy-efficient.
- Ask Solar Alberta to come speak at your school about the opportunities in the solar industry.
- Do a science project on a renewable energy source. See some ideas [here!](#)
- Go to an energy science conference, or host your own renewable energy fair.
- Do a fundraiser to install solar panels on your school or local community building.
- Hire an expert to teach you and your class how to build renewable energy projects.

Resources

Click to discover

[ATCO Project Webpage](#)

[Athabasca Chipewyan First Nation Website](#)

[MyHeat HEAT and Solar Maps](#)

[Municipal Solar Rebate Programs](#)

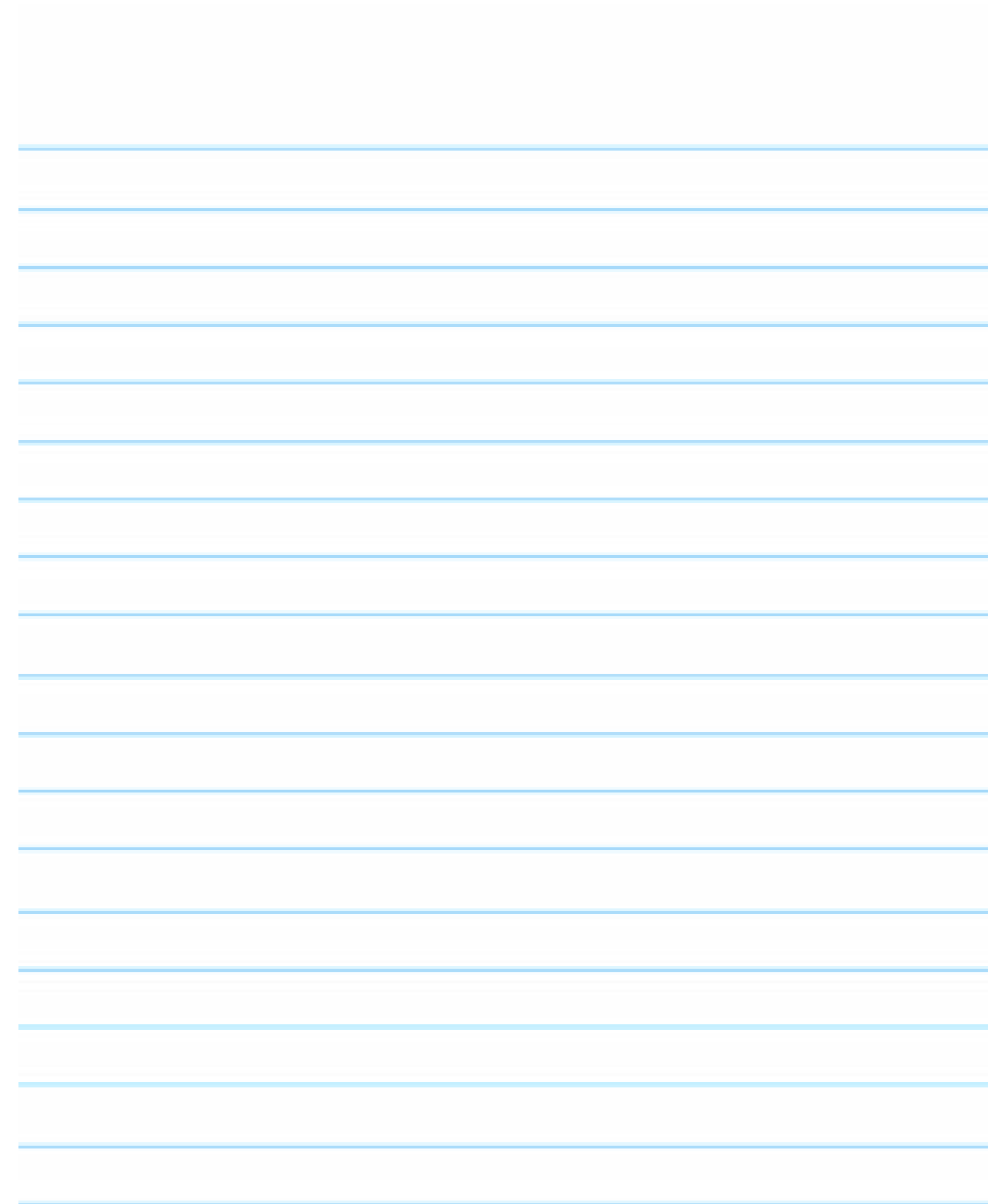
[Municipal Climate Change Action Centre](#)

[Federal Grants and Incentives](#)

[Britannica Kids](#) (used for Key Terms)

[36 environmental project ideas that you could get funding for!](#)

Notes





Emerald Youth Grants

The AEF would like to thank Syncrude Canada Ltd. for their sponsorship of the Emerald Youth Grants Program. As well, we'd like to thank Hoopla Media for their work on the Emerald Documentary Series.

This study guide was created and written by AEF Summer Student, Katherine Rogers.

[Click to apply for an Emerald Youth Grant!](#)

