

Energy and Electricity Education Program

Kananaskis Country, Alberta

Summary Report

November 14 - 15, 2012





The 2012 Electricity and Energy Education Tour brought 19 teachers from across the province together to experience the dynamic and diverse story of electricity in Alberta.

For an energy rich province, competing in the global economy, in the context of increased pressures for sustainable development of natural resources, meaningful energy and electricity education is more important than ever. By sparking interest and deepening understanding of the science, technology and issues connected to powering Alberta among passionate educators, we are investing in that same spark and understanding in students across Alberta - our future leaders.

I think that it gave a chance to be a learner again, to explore and question. I look forward to sharing the information with my class.

Anonymous

The program equipped me to understand how electricity is generated and managed in Alberta. I appreciate the lengths that you go to create bias balanced experiences. You always provoke me to reflect on how I teach, and challenge me to pursue answers to questions that are raised on the tour. The learning continues long after the trip ends. Thank you!

Corinne Webb - Calgary

What we aimed to do?

- Understand the science behind how natural resources generate electricity
- Identify how transmission fits into Alberta's electricity mix
- Learn about small scale electricity generating facilities
- Explore innovations that are being developed within the electricity sector
- Bring current and meaningful electricity education to your classroom

How did we do it?

We designed the program for participants to experience electricity in Alberta from a variety of angles - touring both small and big scale generating facilities, drawing energy from both renewable and non-renewable resources, that represented both traditional technology and exciting new innovations. Throughout, teachers explored issues related to opportunities and challenges in the sector. They also had the opportunity to connect and share with each other about ways to bring the story back to their classrooms.

Wednesday, November 14

Welcome and Electricity 101

Rachel Hofman and Annette Cake, Inside Education

History of the Kananaskis Field Station

Susan Arlidge, Kananaskis Field Station

Thursday, November 15

Hydroelectricity 101, Kananaskis Plant Tour

Brian Courtney, TransAlta

Transmission in Alberta

Shan Bhattacharya, AESO

Natural Gas: Old Dog, New Tricks, University of Calgary Natural Gas Cogeneration Facility Tour

Keith Altenhof, University of Calgary

Solar and Wind Power in the Classroom, Sustainable Development Project Tour

Stephanie Bennett, Cochrane High School



It was fascinating to go underground and see firsthand the design that has served us for 100 years.

participant on touring Kananaskis Hydro Plant

Who came?

Anita Angulo
Chinook Winds Adventist
Academy
Calgary

Adam Argento
Oilfields High School
Black Diamond

MJ Buzak
Coloniale Estates School
Beaumont

Katherine Cook
C.W. Sears Elementary
Tofield

Zac Coupland
St. Joseph School
Coaldale

Nicole Dalwood
Sir John A Macdonald Junior
High
Calgary

Valerie Dove
St. Michael
Calgary

Salvador Galdamez
John Paul
Edmonton

Les Kiffiak
Ernest Manning High School
Calgary

Morgan Laird
Irma School
Irma

Kathy McLaughlin
Our Lady Queen of Peace
Airdrie

Anita Pohl-Dagge
Dr. Morris Gibson
Elementary
Okotoks

Cathy Samson
Hughenden Public School
Hughenden

Carlos Schroeder
Mountain View Academy
Calgary

Susan Seto
Palliser Regional Schools
Calgary

Stephanie Strong
Next Step Junior High
Calgary

Corinne Webb
James Short Memorial
Calgary

Kerrie Willis
C.W. Sears Elementary
Tofield

Aaron Wong
Elmer S. Gish School
St. Albert



Who made it possible?

Inside Education sincerely appreciates the time and support of our partners who came together to make this program a great success. These relationships have allowed us to offer a truly valuable professional development opportunity for teachers.

Thank you to all of the organizations that provided expert speakers, site tours and classroom resources for the 2012 Energy and Electricity Education Program. A special thank you to the partners who provided the financial support that made this program possible:

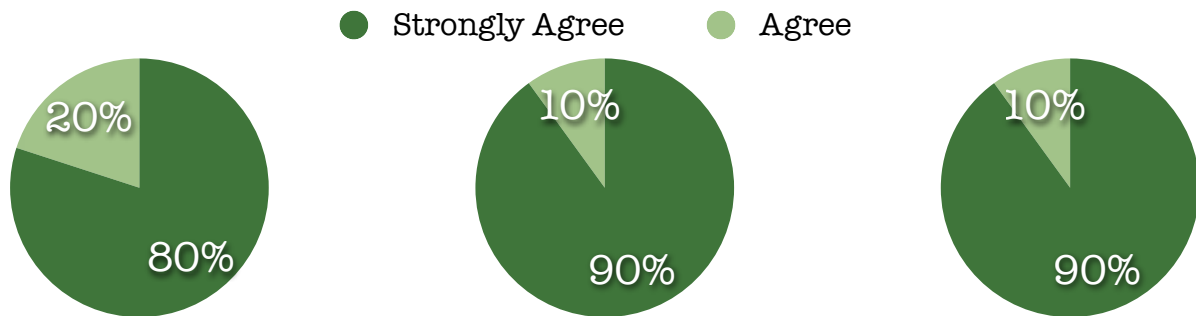


How did it go?

We strive to continually improve the quality and value of our programs. We survey participants and collect feedback on every aspect of their professional development experience and use the information to guide our development of future programs.

100% of respondents would recommend an Inside Education Professional Development Tour to their colleagues

100% of respondents described the tour as enjoyable, balanced and an overall high-value PD opportunity



This education program broadened my understanding of electricity transmission in Alberta.

This education program increased my overall understanding of how natural resources generate electricity in Alberta.

This experience will help me to provide informative, relevant, and meaningful learning experiences for my students.

It brought energy production alive. I now have a sense of how energy is produced and consumed in our province. I also have a broader understanding of the issues and concerns.
Stephanie Strong - Sherwood Park

I gained a lot of insight into the production of energy and will be able to transfer that to the students. Also the material that we received is invaluable. It is always easier to teach something when so see it first hand and don't have to read and interpret the material that way.
MJ Buzak - Beaumont

I shared the resources that I received at the Program with other teachers immediately after I returned. They were most impressed with the relevancy to the classroom, and the quality of the resources. Thanks for equipping participants to share their learning with their colleagues!
Corinne Webb - Calgary

Where do we go from here?

The 2012 Energy & Electricity Education Program was a success thanks to the commitment of our partners, enthusiasm of the highly dedicated teacher participants and the contributions of the time and expertise of the expert speakers and guides.

It is evident from the feedback above that this program is a highly valued professional development opportunity for educators across the province. Conversations about Alberta's electricity mix are critical in developing our understanding natural resources and energy. Inside Education is confident that the knowledge and experiences gained on this program will be transmitted through these teachers to the hundreds of students they work with throughout their careers.

For more information about this and other Inside Education programs contact:

Inside Education
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info@insideeducation.ca





ENERGY AND ELECTRICITY EDUCATION PROGRAM
NOVEMBER 14–15

Wednesday, November 14

Welcome & Introductions

Presenters: **Rachel Hofman and Annette Cake**, Inside Education

This interactive session will introduce you to Inside Education, your tour leads, the other participants and our sponsors. It will also serve to launch a discussion on Alberta's electricity story. You will receive background information for the tour to get the sparks flying as well as receive concrete ideas for bringing electricity education into your classroom. The presenters will share both resources and activities to support your education program.

Thursday, November 15

Tour: Kananaskis Hydroelectric Plant

Presenter: **Brian Courtney**, TransAlta Corporation

How does water produce electricity? Where does hydroelectricity fit into Alberta's current electricity picture? This session will answer your hydroelectricity questions as TransAlta's Brian Courtney takes you through the fundamentals of hydroelectricity. The tour will bring you to TransAlta's run-of-the-river hydroelectric plant located on the Bow River. The 19-megawatt plant was TransAlta's second power plant and is celebrating 100 years in operation this year. You will go on an interactive and in-depth tour of the facility which includes viewing the inside of the facility and a stop to visit the dam.

Transmission in Alberta

Presenter: **Shan Bhattacharya**, Alberta Electric System Operator (AESO)

There's no such thing as wireless electricity. With the province's renewable energy sector and overall electricity needs rapidly growing, is Alberta's electrical transmission system robust enough to handle the load? Shan Bhattacharya will provide an overview of the transmission system in Alberta and describe some of the challenges that his organization faces in ensuring that Alberta's electricity transmission and distribution needs are met.



Natural Gas: Old Dog, New Tricks

Tour: University of Calgary Natural Gas Cogeneration Facility

Presenter: **Keith Altenhof**, University of Calgary

Experience the power and the heat as you tour a cutting edge natural gas cogeneration facility at the University of Calgary. This tour will demonstrate how innovation and technology has transformed natural gas from a one use resource to one of many talents. Keith Altenhof will guide us through the facility which x natural gas to generate 12 MW of electrical power (enough to heat 12,000 homes) and then heats the University of Calgary campus using the waste heat generated from creating electricity.

Solar and Wind Power in the Classroom

Tour: Cochrane High School, Sustainable Development Project

Presenter: **Stephanie Bennett**, Cochrane High School

Observe first hand how solar and wind create electricity and help power a high school. The Sustainable Development Project at Cochrane High School has created a hands-on learning experience for students and teachers. Cochrane high school science teacher, Stephanie Bennett, will guide us through their project that includes solar panel installations and a small wind turbine. This tour will allow you to see first hand how electricity is generated from the wind and sun and you might even pick up some tips on how to incorporate solar and wind power at your school!