



Energizing the North

Proceedings Report

Seminar on **renewable energies**

Geothermal | Solar | Wind | Bioenergy

and

Community Energy Co-operatives



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Message from the Chair

At the Northern Alberta Development Council (NADC) we are committed to working with northern communities to explore opportunities for economic diversification and social development by providing valuable information and resources to the people of our region. A continued priority for the NADC is to strengthen communities through local and regional engagement. The NADC was pleased to host the Energizing the North seminars held on March 28, 2017, in Athabasca and March 30, 2017, in Peace River.

Seminars like Energizing the North enable the NADC to connect key stakeholders with experts to advance important issues and fulfill our vision of a *stronger Alberta through a stronger north*.

Green energy innovations in the north present opportunities for economic diversification and greater energy self-sufficiency in northern communities. Energizing the North helped raise awareness of the potential of renewable energy sources such as geothermal, solar, wind and bioenergy for northern communities. It also provided a forum to discuss the potential of community energy co-operatives to support local skill development, jobs, and economic growth.

The feedback from the Energizing the North seminars was very positive, confirming the value of meaningful engagement and information sharing around renewable energy options for northern Alberta. We look forward to continued conversation with northern communities and organizations as we work together to create a strong and resilient north.

Sincerely,

Debbie Jabbour
MLA, Peace River
NADC Chair



Introduction

Northern Alberta Development Council

The Northern Alberta Development Council's (NADC's) mandate is to "investigate, monitor, evaluate, plan and promote practical measures to foster and advance general development in northern Alberta and to advise Government accordingly."

The Council is made up of nine public members and a Chair. The position of Chair is traditionally held by a Member of the Legislative Assembly (MLA) of Alberta. The Council reports through the Chair to the Minister of Economic Development and Trade. Council membership reflects the geographical, cultural, and vocational diversity of northern communities.



NADC Region: In Brief



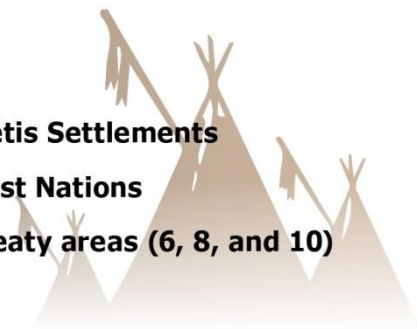
60% of Alberta's total land area
Natural region is largely Boreal Forest

10.6% of Alberta's population, 2011 Census
At least 88 native languages
Over 100 ethnic groups



- 19** Municipal Districts
- 23** Towns
- 9** Villages
- 11** Summer Villages
- 101** Hamlets
- 2** Cities (Cold Lake and Grande Prairie)
- 2** Specialized Municipalities (Mackenzie County and Regional Municipality of Wood Buffalo)
- 2** Improvement Districts (No. 24, Wood Buffalo and No. 349)

- 8** Métis Settlements
- 32** First Nations Treaty areas (6, 8, and 10)





Executive Summary

The NADC has identified green energy innovations as a potential opportunity for northern communities. Geothermal, solar, biomass, and wind energy have the potential to transform northern Alberta communities through innovation, economic diversification, and the creation of energy independence. Renewable local energy production offers the opportunity for investment in local businesses and communities.

To advance renewable energy production opportunities in the north, the NADC hosted two seminars: one in Athabasca on March 28; and one in Peace River on March 30, 2017. Presentations on geothermal, solar, biomass, and wind energy showcased energy technology, successful community energy projects, growing business opportunities, various provincial and federal funding programs, and the development of energy cooperatives.

Each seminar offered 12 diverse presentations, including an interactive question and answer period, as well as, opportunities for group networking and one-on-one conversations among delegates and experts. With the support of the NADC, the Alberta Community & Cooperatives Association (ACCA) prepared a toolkit and held post-seminar sessions. The Community Energy Co-operative Toolkit provided an overview of the potential for energy cooperatives, while the post-seminar sessions provided a venue to discuss the steps of co-op implementation. The Toolkit is available for review or download on our website.

Community Energy Cooperative Toolkit

The toolkit defined renewable community energy, highlighted several renewable energy funding programs, defined the types of cooperatives, provided the four developmental stages of community energy cooperatives, and offered community energy case studies. In the evening, ACCAC and the NADC hosted a session for participants to brainstorm and practice the different developmental stages of forming a cooperative to enhance learning and kick-start the formation of cooperatives in northern Alberta.

Seminar Participation

Both seminars were well attended, with a total of 115 delegates participating, representing many northern communities, municipalities, government and nongovernment groups, businesses, and private citizens. After the presentations, participants wrapped up the day with a round table discussion focused on:

- Renewable energy opportunities in their communities;
- Motivations to pursue renewable energy options; and
- Potential partners to collaborate on renewable energy projects.



Participant Feedback

The participants identified practical opportunities for northern Alberta to implement:

- Install solar panels on residences, community buildings, municipal buildings, commercial buildings, and existing infrastructure such as oil and gas well pads
- Transform brownfields and open spaces to solar farms
- Install solar carports in various community parking lots
- Adapt orphaned oil and gas wells to geothermal energy generation
- Use waste products (landfills, wood, and organic) for biomass energy generation and overall waste reduction



Participants were asked two important questions regarding future actions for renewable energy in northern Alberta:

- What do you think you will do with the information you have gained in this seminar?
- What should be considered or addressed, to move renewable energy forward in the north?

In response, five key themes emerged: collaboration, education, funding, research, and policy development.

Theme	Action
Collaborate	<ul style="list-style-type: none"> • Bring together government, Indigenous communities, industry, community groups, educators, developers, planners, and investors.
Educate	<ul style="list-style-type: none"> • Create venues to inform leaders, promote green innovation and technology, and advocate for alternative and renewable energy.
Fund	<ul style="list-style-type: none"> • Fund programs for technology and installation. • Improve payback values for generators feeding the grid.
Research	<ul style="list-style-type: none"> • Support feasibility studies for various energy options in northern Alberta, especially wind and geothermal
Policy	<ul style="list-style-type: none"> • Address regulatory limitations to support renewable energy development using geothermal, wind, and waste products. • Create policies related to liability in the use of oil wells for geothermal heat, use of Crown land for wind energy, and use of waste products for bioenergy production.

These recommendations speak to the possibilities of renewable energy diversifying the northern economy. The seminars on renewable energy, along with the opportunity to access the cooperative toolkit, significantly increased the knowledge of northern participants. The future of renewable energy is bright in northern Alberta.



Presentation Summaries

Geothermal 101

Scott Andrews, Operations Manager, Canadian Geothermal Energy Association (CanGEA)

The presentation included an overview of the technical aspects of geothermal energy, including a review of CanGEA's role in geothermal development and the potential for geothermal energy in northeast and northwest Alberta.

County of Grande Prairie's Geothermal Project (verbal presentation)

Chris King, Manager, Economic Development, County of Grande Prairie (Athabasca, March 28)

The County of Grande Prairie partnered with the University of Alberta and the Government of Alberta to undertake a study of the geothermal potential in the area.

Hinton Geothermal

Rob Mackin, Mayor, Town of Hinton (Peace River, March 30)

This presentation emphasizes the potential of geothermal in attracting new heat intensive industry, and potential development of greenhouses and a hot springs resort.

Solar – Energizing the North

Mikhail Ivanchikov, President, Dandelion Renewables

An overview of solar energy was provided and how solar PV systems are able to function effectively in northern Alberta. Presentation topics included the regulations around solar energy; solar potential in northern Alberta; and the economic case for solar.

Louis Bull Tribe's Journey

Desmond Bull, Councillor, Louis Bull Tribe (March 28)

This presentation outlined the Louis Bull Tribe's journey towards solar PV implementation. It highlighted the community's reason for seeking renewable energy, the grant application process, and the lessons learned that other communities may find helpful.

It's Time to Make a Difference: Northern Sunrise County Fire Hall Project

David LeBlanc, Fire Chief / Director of Protective Services, Northern Sunrise County (March 30)

A video of Northern Sunrise County's process towards solar PV implementation for the fire hall which highlighted the County's goals, the elements needed for solar implementation including materials, grants, and partners needed and the lessons learned from the process.

Harvesting the Wind: Alberta Wind Farms

Marc Stachiw, President, Alberta Wind Energy Corporation

A technical overview of wind energy in Alberta was provided, giving a description of the type of technology used, the ideal location and conditions for wind farms, the challenges and opportunities for wind projects in Northern Alberta, the new technologies now available, and the benefits of wind energy.



Bioenergy Discussion

Morley Kjargaard, Manager, Environmental and Renewable Industries Unit, Economic Development and Trade

The presentation provided a technical overview of bioenergy, defining and clarifying the different types of bioenergy.

Conversion of St. Paul Region Solid Waste to Value Added Products – Implementation Plan: Step 1

Glenn Andersen, Mayor, Town of St. Paul (Athabasca, March 28)

The presentation highlighted the Town of St. Paul's steps towards implementing bioenergy technology using regional solid waste to reduce landfills.

Peace River Pulp Division Bioenergy – Renewable Energy

Amber Armstrong, Communications and Public Relations Superintendent, Daishowa – Marubeni International Ltd. Peace River Pulp Division (PRPD) (Peace River, March 30)

An overview of PRPD's business in forestry products and the role of bioenergy were presented, including the challenges, opportunities, and bioenergy solutions for enhancing efficiencies in business.

Community Energy, Cooperatives and the Generation of Local Energy

Seth Leon, Manager, Alberta Community Cooperatives Association

Lorelei Hanson, Associate Professor, Athabasca University (Athabasca, March 28)

Juanita Marois, Athabasca University (Athabasca, March 28)

The presentation provided an overview of definitions, terms, and the benefits of cooperatives and community owned renewables.

Municipal Climate Change Action Centre: Energy Efficiency and Renewable Energy Funding Programs for Municipalities

Marc Huot, Manager, Municipal Climate Change Action Centre (MCCAC)

The presentation provided an overview of the types of funding programs offered by MCCAC for energy efficiency and renewable energies

Growing Forward 2: On-Farm Solar PV Grant Program

Kelly Lund, Research Engineer, Agriculture and Forestry

The presentation reviewed the On-Farm Solar grant program, offering a description of the program, a guide on how to fill out the online application form, and the current status and implications of the program as it undergoes a rate review.

Funding Sources for Renewable Energies

Northern Alberta Development Council

The NADC highlighted various other funding programs available for renewable energy projects.



Seminar Outcomes and Next Steps

During the facilitated table-top discussions, delegates identified opportunities in their communities for renewable energy generation and/or usage, as well as what factors motivated them to pursue these opportunities. Common responses arose in both the northeast and the northwest regions.

Opportunities Identified

Delegates identified the following opportunities in Alberta's north for renewable energy production:

- Installing solar on residences, community buildings, municipal buildings, commercial buildings, and existing infrastructure such as oil and gas well pads
- Transforming brownfields and other open spaces for the installation of solar farms
- Installation of solar carports in various community parking lots
- Adapting orphaned oil and gas wells to geothermal energy generation
- Using solid waste, wood waste, and organic waste for biomass energy generation and overall waste reduction



There was also some interest expressed in learning more about the capacity for wind energy generation in the north, as it has proven very successful in many parts of southern Alberta.

Motivating Factors

Delegates identified the following motivating factors to encourage the development of renewable energy in northern Alberta:

- Creates economic development and diversification
- Promotes innovation
- Creates less economic volatility
- Reduces human impact/footprint on the earth
- Leaves the world a better place for future generations



Recommended Future Actions

Participants were asked two important questions regarding future actions for renewable energy in northern Alberta:

- What do you think you will do with the information you have gained in this seminar?
- What should be considered or addressed, in order to move renewable energy forward in the north?

In response, five key themes emerged: collaboration, education, funding, research, and policy development.

Collaborate	<ul style="list-style-type: none">• Bring together government, Indigenous communities, industry, community groups, educators, developers, planners, investors
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The NADC will continue to participate in and facilitate discussions regarding provincial regulations and their impact on the development of alternate and renewable energy initiatives in the north. It will also work with stakeholders to assess the supports and barriers around accommodating community energy generation.



Appendices

Appendix A

Resources

Alberta Community & Co-operative Association <http://acca.coop/>

Alberta Green Economy Network <http://www.albertagen.ca/>

Bear Mountain Wind Park <http://peaceenergy.ca/bear-mountain-wind-park/>

Best Practices for Community Engagement and Public Consultation <http://canwea.ca/pdf/canwea-communityengagement-report-e-final-web.pdf>

Biomass Innovation Centre <http://www.biomassinnovation.ca/>

Canadian Biomass Magazine <http://www.canadianbiomassmagazine.ca/>

Canadian Co-operative Association: <http://www.coopscanada.coop/>

Canadian Geothermal Energy Association (CanGEA) <http://www.cangea.ca/>

Community Power Network <http://communitypowernetwork.com/>

Canadian Solar Industries Association <http://www.cansia.ca/>

Canadian Wind Energy Association <http://canwea.ca/>

Clean Energy BC <https://www.cleanenergybc.org/about/clean-energy-sectors/geothermal>

Co-operative Development Foundation of Canada <http://cdfcanada.coop/>

Distributed Wind Energy Association <http://distributedwind.org/>

Friends of Wind and Solar <http://friendsofwind.ca/>

Gray, Allan et al. (2012). Alberta exhibiting the need to systematically remove biased data. *Journal of Geophysics and Engineering*, 9. 534-548.

How to Make Wind Power More Reliable, Saskatchewan Research Council
<https://www.youtube.com/watch?v=UE7varh2VZY>

International Co-operative Alliance <http://ica.coop/>

Let's Talk Energy <http://energy.techno-science.ca/en/energy101/biomass.php>

Renewable Energy World <http://www.renewableenergyworld.com/geothermal-energy/tech.html>



Solar Energy Society of Alberta <https://solaralberta.ca/>

Starland County Solar Implementation Toolkit <http://www.starlandsolar.ca/toolkit-tools>

Starland County Solar Initiative <http://www.starlandsolar.ca>

Town of Banff Solar <https://banff.ca/solar>

Union of Concerned Scientists http://www.ucsusa.org/clean_energy/our-energy-choices/renewable-energy/how-geothermal-energy-works.html#.WMb7a1Xyu70

Wind. For My Community. <http://canwea.ca/wp-content/uploads/2014/01/canwea-AB-brochure-e-web-v1.pdf>

Wood Pellet Association of Canada <https://www.pellet.org/>

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