

November 20, 2018

**Geothermal Energy in the Northwest Territories:  
 An Opportunity for Clean Heat and Power to Assist in Reducing Dependency on Fossil Fuels**

Dear Premier Robert R. McLeod,

**CanGEA would like to acknowledge the Government of the NWT's recent actions taken towards transitioning the territory towards a strong, healthy economy that is less dependent on fossil fuels.** The initiatives and action plan set out in the *2030 Energy Strategy*, the *2030 Energy Strategy Action Plan 2018-2021*, and the most recent announcement of the *GHG Grant Program* will all undoubtedly promote the development of a sustainable energy future for the NWT. CanGEA commends the NWT government for your demonstrated commitment to reduce GHG emissions proportionally to the Government of Canada's 2015 Paris Agreement commitments; all the while ensuring these solutions lower energy costs and promote engagement, participation, and empowerment for local communities.

**The purpose of this letter is to urge the Government of NWT to continue with the steps taken towards developing NWT's geothermal resources.** This letter will briefly highlight the most pressing barriers to geothermal development in the NWT and discuss how geothermal energy could be key to meeting climate and energy goals. The NWT's developable geothermal resources are among Canada's best, thus we urge that you look to geothermal heat and/or power to help meet your future energy needs.

CanGEA recognizes that the Government of NWT and municipalities within the territory have previously devoted efforts to geothermal energy development in various ways. However, with a new, long-term energy plan and increased funding for renewable energy projects, we would like to suggest that a renewed vision for geothermal energy also be taken. **A renewed support for geothermal energy in the territory and the deployment of projects could play a key role in meeting four out of your six identified 2030 Strategic Objectives (SO).** More specifically, *Strategic Objectives*:

- (1) *Work together to find solutions: community engagement, participation, and empowerment.*
- (2) *Reduce GHG emissions from electricity generation in diesel-powered communities by an average of 25%.*
- (4) *Increase the share of renewable energy used for space heating by 40%.*
- (6) *A longer-term vision: develop the NWT's energy potential, address industry emissions, and do our part to meet national climate change objectives.*

**Promoting the Development of Geothermal Energy in the NWT**

This section will briefly highlight the two main barriers preventing the development of geothermal resources within the NWT, an identified solution for meeting your *2030 Energy Action Plan* and present a case for why further consideration should be given to remove these barriers.

**1. Align the NWT Geothermal Favourability Study with the Canadian Geothermal Code for Public Reporting ("the Code").**

**Takeaway:** *Bringing the NWT's geothermal report up to the standards set out by the Code will allow for the report's results to be utilized more effectively for geothermal energy development in the territory.*

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The Canadian Geothermal Energy Association (CanGEA) is the collective voice of Canada's geothermal energy industry. As a non-profit industry association, we represent the interests of our member companies with the primary goal of unlocking the country's tremendous geothermal energy potential. Geothermal energy can provide competitively priced, renewable, round-the-clock energy to the Canadian and U.S. markets.

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In 2010, to promote the geothermal industry and establish an integrity baseline, CanGEO in cooperation with the global industry and stock exchanges, developed *The Canadian Geothermal Code for Public Reporting*. The Code is meant to provide transparency, consistency and confidence in public reporting of geothermal information with two primary objectives: (1) provide a basis that is satisfactory for investors, shareholders, and capital markets, and (2) align Canada's geothermal reporting standard with global standards to ensure all developers, including foreign developers, are able to easily interpret and utilize Canadian geothermal reports and favourability studies.

The 2011 "Geothermal Favourability Map Northwest Territories," produced by EBA Engineering Consulting Ltd for the Government of NWT's Ministry of Environment and Natural Resources was a first step, however, **the report did not include reservoir engineering estimates regarding the resource's technical and theoretical potential**. Additionally, the data used for the report was not presented in a full and easily accessible manner. **Complete, accessible data and reservoir engineering resource estimates are a crucial component necessary to meet Canada's and other international geothermal reporting codes because it allows for the project's report and findings to be more effectively scrutinized.**

CanGEO is prepared to assist in securing funding and identifying "qualified persons" to bring the 2011 report up to Canadian and new international standards, which will allow for the report findings to be further analyzed and to be more easily understood in terms of what geothermal applications could be developed. Bringing the report up to the standard is aligned with *SO 1, 2, 4, & 6* and it will present a more understandable representation of the resource for the public and developers, which could lead to further project development and coinciding electricity and heating GHG reductions.

## **2. Work with the NTPC and Stakeholders to Develop a Geothermal Energy Pricing Framework for the Territory.**

*Takeaway: The lack of an established geothermal energy-pricing framework has hindered the development of a project in the NWT with proven resources and promising applications.*

With the growing desire and necessity for renewable power, now is the time to develop appropriate energy pricing frameworks with relevant stakeholders. CanGEO would like to encourage that the Government of NWT work with the NTPC and stakeholders to develop a pricing framework for geothermal energy. In the absence of a transparent pricing signal for geothermal energy, developers are unable to confidently continue to investigate project development in your territory. The development of a geothermal power project within the NWT could serve as a model for future developments and play a key role in meeting or exceeding the goal to reduce GHG emissions by 40% from electricity generation in diesel-powered communities.

CanGEO is prepared to provide assistance to promote the development of a geothermal energy pricing framework, including, but not limited to, the preparation of global geothermal energy pricing framework case studies for reference. An established pricing system would enable project developers to bring projects online, which is aligned with *SO 1, 2, 4, & 6* because geothermal energy projects have the potential to provide local, clean, sustainable power, heat and jobs for NWT residents.

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### 3. Continue to Support the Development of Renewable Energy Heating Projects in NWT.

*Takeaway: Geothermal heating projects have the potential to meet the heating supply needs of several NWT communities.*

CanGEO acknowledges and commends the commitment to increase the share of renewable energy used for space heating in the NWT as demonstrated through the launch of the GHG grant program as well as within the *SO* and the *2030 Energy Action Plan 2018-21*. Space heating composes a significant portion of total energy use in Canada and the NWT. For example, 70% of Yellowknife's total energy consumption is devoted to space heating. A geothermal heating project in the NWT could be instrumental to meeting, or exceeding the share of renewable energy used for space heating by 40%. It is worth noting that the communities of Fort Liard, Fort Simpson, Fort Providence and Hay River were also identified as having geothermal resources adequate for both power and heating applications.

Geothermal heating is used extensively around the world to meet countries' heating needs, however Canada has yet to develop any significant geothermal heating projects. **CanGEO urges the Government of NWT to become a leader in Canada and give extra consideration to geothermal heating projects to help meet your 2030 Energy Action Plan SO commitments.** CanGEO is prepared to expand on the benefits and potential geothermal heating applications as well as provide relevant case studies.

#### Conclusion:

Once again, CanGEO would like to commend the Government of NWT for your commitment and leadership with regard to helping our country meet its climate goals. **At this point, CanGEO would like to request a phone meeting to further discuss how the barriers preventing geothermal energy development in the NWT can be removed, thereby allowing for projects to move forward and assist in meeting the goals set out in your 2030 Energy Action Plan.**

In an effort to keep this letter brief, many of the topics and identified barriers were mentioned in passing; CanGEO is prepared to expand on any topic mentioned within this letter.

Sincerely,

A handwritten signature in black ink, appearing to read "Zach Harmer".

Zach Harmer, MPP  
 Policy Director  
 Canadian Geothermal Energy Association (CanGEO)



Cc: The Honourable Wally Schumann, Minister of Infrastructure, Industry, Tourism and Investment  
 The Honourable Robert C. McLeod, Deputy Premier, Minister of Finance, Minister of Environment and Natural Resources, Minister Responsible for the NTPC  
 Michele Culhane, Climate Change Specialist, Department of Environment and Natural Resources

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