Request for Proposals

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New Brunswick Geothermal Resource Assessment

RFP Release Date: Friday, August 22, 2025

Proposal Due Date: Wednesday, September 24, 2025, at 1:00 PM ADT

Contact:

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1.0 Introduction

Net Zero Atlantic (NZA) is a leading energy research organization advancing Atlantic Canada's transition to a low-carbon future. We are encouraging growth of a sustainable energy sector by identifying knowledge gaps, connecting experts to projects, and leading applied research. Our work covers critical areas in need of development, such as clean fuels, electricity, geothermal, carbon management (carbon capture, storage and utilization (CCUS)), and energy system modelling, among others. Our team is dedicated to an inclusive and successful transition in Atlantic Canada, and our focus is on credible and unbiased research that will best prepare policymakers, industry leaders and workers, and sector investors to work together on pathways to decarbonize our region's economy, mitigate climate change impacts, and move Atlantic Canada toward net-zero emissions.

NZA has an active and growing portfolio of work in New Brunswick, supporting the province's transition to a low-carbon economy. This includes the Emerging Concepts and Technologies (ECT) program and the Atlantic CCUS Roundtable hosted in Moncton. The organization has also led engagement and knowledge-sharing initiatives such as the 2023 Natural Climate Solutions workshop and the Net Zero Blueprint engagement. Ongoing collaboration with institutions like UNB and other Atlantic Canadian universities supports pro-climate behavior research, and the Atlantic Canada Energy System (ACES) model has been applied to explore decarbonization pathways in the province.

NZA has led various geothermal projects, including the Community Geothermal Resource: Capacity Assessment and Training Program (GeoCAT)[1], and the Nova Scotia Phase I Geothermal

[1] https://netzeroatlantic.ca/research/community-geothermal-resource-capacity-assessment-and-training-program-geocat

Resource Assessment and Phase II: Direct Use of Geothermal Heat in Nova Scotia[2],[3]. The GeoCAT program focused on building local capacity for mid-depth geothermal energy development by training community representatives in twelve rural and five Mi'kmaq communities in Nova Scotia to assess geothermal potential, engage residents, and explore viable project opportunities. Phase I provided a province-wide assessment of geothermal potential, while Phase II examined the feasibility of direct-use geothermal heating in specific regions within NS with higher resource potential.

NZA, in collaboration with the New Brunswick Climate Change Secretariat and with support from the New Brunswick Climate Change Fund, is building on this momentum by leading an assessment of the province's geothermal potential, similar to the Phase I work completed for Nova Scotia.

2.0 Context

Geothermal energy is a renewable and stable source of thermal energy that can be used for heating and cooling buildings, industrial processes and electricity generation. In New Brunswick, geothermal energy is already in use – primarily through ground-source heat pumps (GSHPs). Expanding the use of geothermal energy offers an opportunity to reduce emissions from fossil fuel combustion and decrease electricity demand currently used for heating.

As New Brunswick transitions toward greater reliance on variable renewable energy sources, like wind and solar, reducing peak demand on the electricity grid becomes increasingly important. One of the key benefits of geothermal systems is the ability to provide consistent, stable heating independent of weather conditions or time of day. This stability helps shift

[2] https://netzeroatlantic.ca/research/phase-i-assessment-geothermal-resources-onshore-nova-scotia

[3] https://netzeroatlantic.ca/research/phase-ii-direct-use-geothermal-heat-nova-scotia

heating loads off the electrical grid, supporting grid reliability and making it easier to integrate variable renewables into the province's energy mix.

GSHPs have been adopted in residential, commercial, and institutional settings within New Brunswick.[4]. However, despite its proven reliability and efficiency, the resource remains significantly underutilized relative to its potential.

This project will assess New Brunswick's geothermal resource based on the province's geological and subsurface conditions, identifying the physical characteristics and technical requirements needed to enable broader adoption of geothermal energy.

NZA is seeking a consultant to carry out the geothermal resource assessment portion of this work. The consultant will be responsible for evaluating the geothermal potential of onshore New Brunswick using available geological and subsurface data and providing deliverables that will inform a comprehensive report.

NZA will compile the consultant's analysis and findings into a report that evaluates potential emissions reductions, identifies key barriers to geothermal development, and outlines how geothermal energy can contribute to New Brunswick's clean energy mix. This report will be made publicly available to support communities, developers, and policymakers interested in advancing geothermal opportunities in the province.

3.0 Objective

The objective of this RFP is to obtain the services of a qualified consultant (the Proponent) to develop a comprehensive report that will evaluate the geothermal resource potential of onshore New Brunswick and outline the technical constraints and limitations to its development.

[4] https://renewablesnb.ca/geothermal/

4.0 Scope of Work

The following tasks will be undertaken by the Proponent to meet the project objectives:

1. Compile, analyze, and evaluate existing data on geothermal resources in New Brunswick.
2. Review the geology in the province and provide an assessment of geothermal potential based on rock type, geothermal gradient, and potential for thermal extraction.
3. Prepare maps that define the geothermal potential of the province.
4. Identify technical constraints and limitations to geothermal development in New Brunswick.

Each task is further detailed below.

4.1 Research and Data Collection

- **Existing Geothermal in New Brunswick:** Research and summarize New Brunswick's current use of geothermal energy and provide examples of the types of current applications.
- **New Brunswick Geologic and Geothermal Data Compilation:** Compile, review, and summarize publicly available data. Data of interest includes, but is not limited to:
    - Geological mapping
    - Borehole databases
    - Geothermal gradients
    - Historic mining data
    - Geophysical data
    - Data on existing subsurface reservoirs such as abandoned mines.

4.2 Geothermal Resource Assessment

- **Geothermal Resource Assessment:** Assess the geothermal potential based on the following:

a. Rock type
b. Geothermal gradient
    i. Shallow depths for geo-exchange systems
    ii. Mid-depth for thermal applications
    iii. Deep geothermal for electricity generation
c. Potential for thermal extraction
d. Include existing subsurface reservoirs such as abandoned mines

- The assessment must address all areas of the province, even if only briefly, including those not typically considered for geothermal resources due to low reported geothermal gradients
- The assessment should include the current context and identify where there are technical constraints or limitations to successfully and sustainably harness geothermal energy resources. Technical constraints include but are not limited to:
    - Presence of suitable hydrothermal systems
    - Geographic location
    - Geologic and reservoir conditions (e.g., rock porosity and permeability, temperature, pressure, depth etc.)
    - Drilling and wellbore challenges
    - Heat extraction
    - Data availability and limitations

4.3 Prepare Maps

- **Map geological information and geothermal resources and potential:** Compile the geologic information and geothermal assessment from Task 4.2 into a series of maps to define the geology and the geothermal potential of the province.
- Integrated maps should group regions with similar characteristics, with data grouped by geothermal gradient, rock type, porosity/permeability, and depth to target temperatures to delineate zones of similar geothermal resource potential.

  - E.g., High-gradient, porous/permeable zones should be grouped as high-potential resource areas. Low-gradient, tight (low-permeability) rock zones should be grouped as low-potential or technically challenging areas.

- Maps should aid in prioritizing areas for potential development or future data acquisition. The map data and files will be part of the project deliverables The following will be required:
  - Compatible file types: Shapefile / ESRI geodatabase files / GEO TIFFs or normal TIFF files
  - Projection/Datum: NAD83(CSRS) / New Brunswick Stereographic - EPSG:2953
  - Metadata information, such as:
    - Dataset name for identification
    - Data description, including a list of key geologic and geometric features (
    - Indication of known data issues (e.g., not topologically structured, no standards, currentness, accuracy, completeness, etc.)
    - Indication of the extent of dataset (e.g. provincial, Acadian Peninsula, etc.) and size of dataset (e.g., 1894 1:10,000 tile @ 10MB/tile; prov file @ 400MB raster image)
    - Indicate the georeferencing method (projection, datum, reference system)
    - Specify any packages used.

4.4 Identify Technical Constraints and Limitations to Geothermal Development

- **Suitability Assessment:** Provide an assessment of the suitability of geothermal project development within the province, considering factors such as proximity to infrastructure, geologic factors, and density of potential end-users in the area. There should be a distinction between geothermal for heating and geothermal for electricity.
  - The assessment should be presented in two parts:

1. Geothermal Resource Potential: Evaluate the quality of the geothermal resource based on geological and subsurface conditions alone.
2. Development Suitability: Assess geothermal potential in combination with surface-level factors, including proximity to infrastructure and end-users, to identify areas that may be suitable for development. Identify and describe a few example locations in New Brunswick that meet favourable development conditions, with a rationale for each.

- **Opportunities**: Highlight any significant opportunities or strategic advantages these areas offer for geothermal development (e.g., co-location with industrial facilities, proximity to potential end-users, etc.).
- **Constraints and Limitations**: Identify, analyze and discuss the technical constraints and limitations for geothermal development within New Brunswick, including but not limited to:
  - Research and knowledge gaps.
  - Data limitations.
  - Geographical and geological limitations.

- **Geothermal Applications and Examples:** Provide examples from other jurisdictions that have been effective in developing geothermal applications and that have similar geological resource potential as New Brunswick. At least one example and discussion will be provided for each of: ground source heat pumps, mid-depth geothermal for heating, mine water geothermal heating, and deep geothermal for electricity generation. These assessments will provide brief summaries of the developments and the enabling conditions that allowed for development. The enabling conditions can include geological conditions, infrastructure, energy demand, regulatory and technical considerations, as appropriate. The assessments will also include a comparison of the enabling conditions in the other jurisdictions to the conditions in New Brunswick.

Examples that may be included in this assessment are encouraged to be provided in the proposal.

- **Options for Overcoming Barriers:** Provide suggestions for de-risking targeted areas in terms of new subsurface modeling, imaging, or drilling.

Scope Assumptions

- This work will focus on New Brunswick onshore territorial limits. Offshore geothermal is excluded from this scope.
- The mapping will not include suitability for ground source heat pumps; however, it is expected GSHP to be described in the research and assessment.
- NZA will not be providing datasets to the proponent. Engagement with industry and/or government is expected in finding data sources.

5.0 Deliverables

The Proponent will be responsible for the following deliverables:

1. **Report**

A written report that includes:

- A summary of New Brunswick's existing geothermal applications and potential.
- Descriptions of geothermal development types (shallow, mid-depth, deep).
- Examples of geothermal projects from other jurisdictions, with relevance to onshore New Brunswick.
- A technical assessment of geothermal resources across the province, including maps describing the provincial geology and geothermal potential, and an analysis of limitations and technical constraints.

2. **Synthesis Maps**

A series of geologic and geothermal resource maps that define the geothermal potential of the province. These maps will:

- Compile geological and geothermal assessment data.
- Be suitable for public access via GeoNB.
- Include metadata and meet specified technical requirements (e.g., file types, projections, and formats compatible with ArcGIS Pro).

3. Digital Geospatial Files

Digital files to accompany the maps, including:

- Shapefiles, ESRI geodatabases, and/or TIFFs (GeoTIFF or standard TIFF).
- Appropriate projections/datum (e.g., NAD83(CSRS), EPSG:2953).
- Complete metadata documentation covering dataset description, extent, accuracy, georeferencing, and any known limitations.

The Proponent is required to attend monthly Research Management Committee (RMC) meetings and provide bi-weekly project updates via progress reports. As the project progresses, the Proponent will provide the following:

I. **Draft Report and Synthesis Maps** summarizing the results of the scope of work described above. The draft report will be provided to the RMC, which may propose reasonable revisions for incorporation by the Proponent into the final version.
II. **Final Report and Synthesis Maps** with the RMC's revisions and comments addressed. Both draft and final versions will be submitted in PDF format.
III. **PowerPoint Presentation** to the RMC to accompany the submission of the draft report. The presentation will review the project and its main findings.
IV. **Public Webinar** summarizing the report. The webinar will be organized by Net Zero Atlantic and made available to the public.

V. **Datasets and GIS Layers** of the compiled geothermal and geologic data. The dataset should be accompanied by metadata delivered in one of the following formats: Shapefile / ESRI geodatabase files / GEO TIFFs or normal TIFF files

6.0 Timelines

To support effective communication and project coordination, the Proponent is expected to host regular project status meetings via video conference. At project onset, the desired frequency of project status meetings will be determined. The Proponent is expected to host the kickoff meeting. The following timeline outlines Net Zero Atlantic's expectations with respect to timing.

Project Timelines	
Item	**Date**
RFP Release Date	*August 22, 2025*
RFP Q & A Close Date	*September 12, 2025 (2:00 PM AT)*
Proposal Due Date	*September 24, 2025 (1:00 PM AT)*
Project Kickoff	*Week of October 6, 2025*
Draft Report	*December 22, 2025 (latest)*
Final Report	*January 30, 2026*

7.0 Project Funding

Funding for this project will be allocated through a competitive bid process and is capped at a maximum of $30,000.00 CAD, including all related expenses but excluding taxes. Proposals that exceed this amount will not be considered. Note that proposals will be rated first in terms of experience/team/work plan and second in terms of value.

Please include a cost-task breakdown (time per person per task), including hourly or daily rates. The detailed budget should provide a breakdown of costs by task and a separate line item for any applicable taxes.

8.0 Proponent Qualifications

The successful applicant must:

- Demonstrate a proven track record in conducting comprehensive studies related to the assessment of geothermal resources of various gradients including shallow, mid-depth, and deep.
- Proven experience in geothermal resource assessment and geothermal project assessment or development.
- Demonstrate strong GIS and geologic mapping skills specific to geothermal, and an ability to produce high-quality maps.
- Familiarity with geologic and geothermal databases is necessary for performing a geothermal assessment.
- Possess a deep understanding of the geologic landscape, energy needs, and environmental challenges specific to New Brunswick.

9.0 Proposal Requirements

The proposal should:

- Be concisely worded with clearly described objectives, methods, budget, schedule, and deliverables. Maximum 15 pages, excluding appendices, title pages, and cover letter. The proposal should include a work plan outlining how and when all the tasks will be completed.
- Describe the Proponent's organization and its relevant experience with similar projects and detail the relevant work experience of the key staff assigned to this project and their

roles on the project. This material should be summarized in the body of the proposal and can be presented in more detail, if needed, in an appendix.

- Provide confirmation that the Proponent's team will be adequately resourced to execute all deliverables by January 30th, 2026.
- Provide a detailed fixed fee budget including project tasks, team member's daily or hourly rates, and their intended number of days/hours to work on each project component. The detailed budget should provide a breakdown of costs by task and a separate line item for any applicable taxes.

To submit your proposal:

- Prepare a single electronic document in PDF format. Ensure that the proposal or cover letter is signed by an officer or equivalent with authority to bind the Proponent to the statements made in the proposal.

- Upload an electronic copy to the Net Zero Atlantic- FTP site available at https://netzeroatlantic.sharefile.com/r-rebfa8ab492df4c77a49d16aec65508e8

10.0 Questions and Clarifications

Net Zero Atlantic will accept content-related questions from interested applicants on an ongoing basis until September 12, 2025, at 2 pm, AT. Please email the Project Manager, Sarah Kennedy, at skennedy@netzeroatlantic.ca with any questions prior to this date.

A Q&A page will be available on the Net Zero Atlantic website:

https://netzeroatlantic.ca/opportunities/request-proposals/new-brunswick-geothermal-resource-assessment

The names and organizations of those submitting questions will remain anonymous; only the question and Net Zero Atlantic's response will be posted. Interested parties are encouraged to check the Q&A page for updated information and clarifications that may help in completing

their proposal. The Q&A page will only be available if content-related questions have been received.

11.0 Evaluation

This project will be administered through Net Zero Atlantic. The weighting table below demonstrates the weighting associated with each proposal component. Proposals will be quantitatively evaluated against a set of criteria developed by the RMC. Proponents should demonstrate good value for money but note the lowest cost will not necessarily be selected.

Factor	Weight
Experience and Knowledge: Qualifications, experience and capabilities of the company and delivery team; demonstration of knowledge relevant to this study.	30%
Project Plan, Approach and Methodology: Proponent demonstrates an understanding of the project service requirements and has outlined a comprehensive and effective work plan. Proposal describes the objectives, methodology, milestones and deliverables, and a sound approach in undertaking this project. Communication format and frequency between the Proponent and Net Zero Atlantic are clearly described.	40%
Schedule and Work Distribution: Proponent describes an achievable schedule and demonstrates the ability to complete the work on or before the desired completion date.	10%
Proposal Presentation and Organization: The proposal includes all RFP requirements and tasks, demonstrates attention to clarity, grammar, presentation, and comprehensibility.	10%
Value: The project will offer good value for the proposed budget. The budget is clear, convincing, and well-described.	10%
Total:	**100%**

Please Note: Net Zero Atlantic reserves the right to fully award, partially award or not award this project .