

MEMO

SUBJECT: Iqaluit Nukkiqsautiit Project Overview and Outlook for 2025

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PREPARED FOR: General Use

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Iqaluit Nukkiqsautiit Project Overview

Project Description

The **Iqaluit Nukkiqsautiit Project** aims to enhance the social, economic, and environmental sustainability of Iqaluit, Nunavut, through the development and implementation of key community-driven initiatives. A primary focus of the project is the construction of a **15-30 MW capacity waterpower facility** that will provide a reliable, renewable energy source to meet the growing needs of Iqaluit while aligning with sustainable energy practices.

The project's primary objective is to create long-term benefits for the people of Iqaluit and the broader Qikiqtani region by focusing on the following key areas:

1. **Community Engagement & Inuit Involvement:** A central focus of the Iqaluit Nukkiqsautiit Project is to ensure active and meaningful participation of Inuit residents in all aspects of the project. This includes leveraging the knowledge and skills of local Inuit firms, providing career development opportunities for youth, and promoting Inuit-led solutions to community challenges. Emphasis will be placed on strengthening the capacity of local businesses and creating opportunities for professional growth and skills transfer.
2. **Waterpower Facility Development:** The core of the project involves the design and construction of a **15-30 MW capacity waterpower facility**, which will harness the natural energy of local water resources to provide clean, renewable electricity to Iqaluit. This facility will replace the diesel power plant as the prime power source in Iqaluit. This will reduce the community's dependence on diesel power generation, lowering both dependence on the Southand environmental impacts, and contribute to long-term energy sustainability. The project will ensure that the facility is designed with the latest technologies, adhering to industry standards while considering the environmental and cultural needs of the region.
3. **Infrastructure Development & Improvement:** In addition to the waterpower facility, the project will include the development and improvement of key infrastructure within Iqaluit, particularly in areas that support community well-being, such as public facilities, transportation systems, and housing. This

infrastructure development will take into account the unique environmental and cultural needs of the region, ensuring that sustainable materials and methods are used throughout the project lifecycle.

4. **Cultural Heritage and Education:** The Iqaluit Nukkiqsautiit Project will prioritize the preservation and promotion of Inuit cultural heritage. This will include the establishment of educational programs for contractors that teach the history, language, and traditions of Inuit communities to ensure culture context is understood and respected. The project will incorporate and abide by Inuit Qaujimajatuqangit throughout each phase with a focus on consent to continue development given by the community at each decision gate. The project will also foster collaboration with local schools and cultural institutions to ensure that Inuit youth are able to connect with their heritage and learn in a supportive environment.
5. **Environmental Sustainability:** Recognizing the critical importance of environmental conservation in the Arctic, the project will be guided by principles of environmental stewardship. The Project has a responsibility to align with environmental stewardship principals, which subsequently have aligned to date with requirements set out by Rightsholding Organizations. The construction of the waterpower facility will be carefully managed to minimize any potential negative impact on local ecosystems and wildlife. Sustainable practices will be embedded in every stage, from planning through to execution, to ensure the protection of the environment. Efforts will focus on energy efficiency, waste reduction, and the preservation of natural habitats.
6. **Economic Development and Job Creation:** A key component of the project is the stimulation of Iqaluit's local economy. By supporting Inuit businesses, fostering entrepreneurship, and providing training and employment opportunities, the Iqaluit Nukkiqsautiit Project will contribute to reducing unemployment and building a resilient economy. The development of the waterpower facility will create both short-term construction jobs and long-term operational roles, ensuring ongoing economic benefits for the community and enabling the participation of Inuit in energy infrastructure ownership.
7. **Capacity Building & Workforce Development:** The project will focus on developing the skills of Iqaluit's residents, particularly Inuit youth, in areas such as construction, project management, energy generation, and environmental monitoring. Special attention will be given to mentorship programs and hands-on training that provide job-ready skills and qualifications that benefit both individuals and the community. The operation of the waterpower facility will also offer ongoing career development opportunities in energy and environmental fields.

The **Iqaluit Nukkiqsautiit Project** is a transformative initiative that will not only provide a sustainable, reliable, renewable energy source to Iqaluit but will also contribute to the social, cultural, and economic prosperity of the Territory. Through meaningful Inuit involvement and the collaborative efforts of all stakeholders, this Project will help shape the future of Iqaluit and serve as a model for community-driven, sustainable development in the Arctic.

Project History

The Project is classified according to the Phase-Gate system (shown in Figure 1), which helps mitigate risk, and ensure the optimal solution is carried through, and ensures free, prior, and informed consent from Inuit Leadership and Beneficiaries under the NLCA. This approach to project development is broken down into phases, which are separated by decision gates. The phases constitute development work including the execution and completion of key activities and deliverables. The gates are decision checkpoints, whereby the Project does not proceed to the following phase until agreement and signed approval from all key Project decision makers.

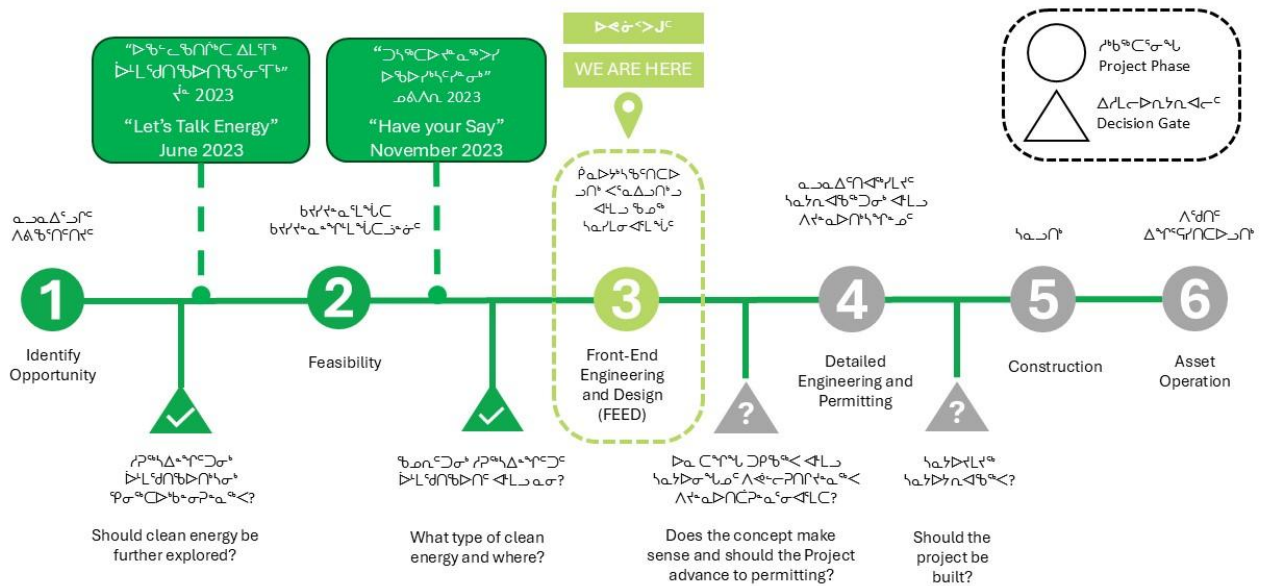


Figure 1: Phase-Gate Approach to Project Development

The Project is currently in **Phase 3 – Front-End Engineering and Design (FEED)**. A brief summary of activities completed during Phase 1 and 2 is given below.

Phase 1 (2023) Included a review of the Project to understand if an opportunity exists, with a specific focus placed on developing an Inuit Rightsholder approach to Project development. This stage also included a review of possible project configurations and high-level economics. What was critical here was evaluating the market and recognizing Project strengths and weaknesses. The purpose of this phase was to confirm agreement among Project partners and Inuit Rightsholders to proceed to a deeper level of evaluation.

Phase 2 (2024) Focused on further developing the business case and Project plan. This includes generating and evaluating various viable development alternatives and some preliminary engineering work, including data collection and analysis. The purpose of this phase is to assess confidence in the Project feasibility while considering the initial outcomes of the Tusaqtavut Study and any data collection campaigns, market assessments, and economics before proceeding. This phase includes ongoing Inuit Rightsholder engagement and community consultations/stakeholder engagement all of which are critical to project success. During this phase, 16 renewable energy options were identified and presented to the community. The community selected a conventional waterpower option as their top choice, with the location at the McKeand river being selected as the preferred site (now known as the Kuugaluk Site).

Phase 3: Front-End Engineering and Design (FEED)

Phase 3 Completed and Planned Activities

Phase 3: Front-End Engineering and Design (FEED) began in late 2024. Key aspects of Phase 4 are commercial activities, preliminary engineering, investigative, and engagement. Table 1 outlines the key activities that have taken place in each category since the start of Phase 3 and the activities planned to be completed in 2025.

Table 1: Phase 4 of the Iqaluit Nukkiqsautiit Project – Completed and Planned Activities

Activities Completed as of February 21, 2025	Planned Activities in 2025
Commercial Activities	Commercial Activities
• Conversations with the utility on commercial and operational framework • Techno-economic study completed • Project Business Case, Including Bookend Economics	• Financial modelling • Cost-benefit analysis • True cost of diesel comparison • QEC commercial framework decision and O&M strategy
Engineering & Design	Engineering and Design
• Hydrometric station installation • Project Controls Plan (Phase 2) • Power & Energy Models – Alternatives • Alternatives Generation & Selection Report	Preliminary Design of the following components: • Hydrology and Hydrotechnical • Preliminary Geotechnical Investigation • Access Road / Site Area / Laydown • Headwords (Main Dam / Saddle Dam design, Spillway Design, Low Level Outlet, Borrow Areas) • Conveyance System (Hydraulic, Intake, Tunnel, Intake Gate and Mechanical Equipment, Penstock, Bifurcation) • Powerhouse (Turbine Generator Groups, Powerhouse, Tailrace, Auxiliary Systems) • Electrical Systems (Power System and Substation, Control and Protection, Transmission Line, Interconnection) • Preliminary Construction Planning
Investigative Activities	Investigative Activities
• Environmental Consultant EOI and RFP • Archaeological Assessment Consultant RFP • Environment & Regulatory Review • Tusaqtavut Study	• Commencement of Environmental Impact Assessment • Commencement of environmental baseline studies at the main reservoir • Archaeological Assessment • Geophysical/geotechnical Data Campaign - Non-invasive geophysical data collection - Use of ground-penetrating-radar (GPR) - Test pitting for surface materials • LiDAR Data Collection RFP • LiDAR Data Collection

- Dependent on budget and schedule, the IQ Study will also proceed in 2025. This study will be led by the Qikiqtani Inuit Association.
- Temporary Camp RFP and Establishment
 - Support of on-site activities for the 2025 field season including a range of consultants.
 - Supply of lodging, communication tools, and supply of necessary supplies for extended occupation of the camp.

Engagement Activities	Engagement Activities
• Community & Stakeholder Engagement Plan Let's Talk Energy – This event focused on community education about renewable energy, to help Iqalungmiut understand the differences between various technologies, and learn how other Arctic communities have made the transition away from diesel to renewable energy. Have Your Say – Shaping Iqaluit's Energy Future – This event aimed to share specifics about all 16 renewable energy options that were identified around Iqaluit, and all data from the technical /economic, environmental, and social /cultural streams of analysis that equally determined a ranking order according to overall viability. A ranked ballot vote was held amongst participants, whereby ~75% chose the Kuugaluk conventional waterpower option as their top choice. Let's Talk Waterpower – This event focused on providing more details for Iqalungmiut about how waterpower works, the current conceptual design options that are being explored for the Kuugaluk site, in accordance with the results of the "Have Your Say – Shaping Iqaluit's Energy Future" event. Feedback was sought from participants on whether they wanted only the base case (electrical load) developed, or if they were interested in NNC studying two additional options to expand the scale of the project: (1) electrical load + heating load, and (2) electrical load + an industrial customer. This event focused on providing more details for community members about waterpower and the current options that are being explored in	May 2025 • Validate field season data collection program plans with Rightsholders and incorporate Inuit Qaujimajatuqangit. • Continue to engage with the Amaruq Hunters and Trappers association on routing the Project access road and other linear infrastructure. June 2025 • Share finalized data collection program plans with the public • Advertise field work employment opportunities for Iqalungmiut • Summer, 2025: monthly updates from the Site on field data collection program progress November 2025 • Validate field season data and associated analysis with Rightsholders and incorporate Inuit Qaujimajatuqangit. • Continue to engage with the Amaruq Hunters and Trappers association on routing the Project access road and other linear infrastructure • Conduct a project naming initiative with Inukshuk high school. General Engagement Activities Throughout 2025 • Socio-economic Study – RFP • Commencement of the Socio-economic Assessment • Commence engagement with the community of Pangnirtung

response to the Have Your Say – Shaping Iqaluit’s Energy Future.

Trip to Inukjuak Waterpower Facility with Inuit Leadership - NNC organized a site visit with Inuit Leadership from Iqaluit to the Innavik Hydro Project in Inukjuak, QC in July 2024 to hear from Inuit leaders in Nunavik on their clean energy journey. Representatives from QIA, Amaruq HTA, Qikiqtaaluk Corporation, and Inuit youth joined NNC for a tour of the Innavik facility, a presentation from Inuit leadership from Inukjuak on the project history, and some knowledge sharing across Inuit Nunangat.