Investigative Studies for the Iqaluit Nukkiksautiit Project

Non-Technical Project Description

The **Iqaluit Nukkiksautiit 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 Iqalungmiut and the broader Qikiqtani region by focusing on the following key areas:

1. **Community Engagement & Inuit Involvement:** A central focus of the Iqaluit Nukkiksautiit 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 South and 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 Nukkiksautiit 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 Nukkiksautiit 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 Iqalungmiut 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 Nukkiksautiit 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 Nunavut Land Claims Agreement. 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.

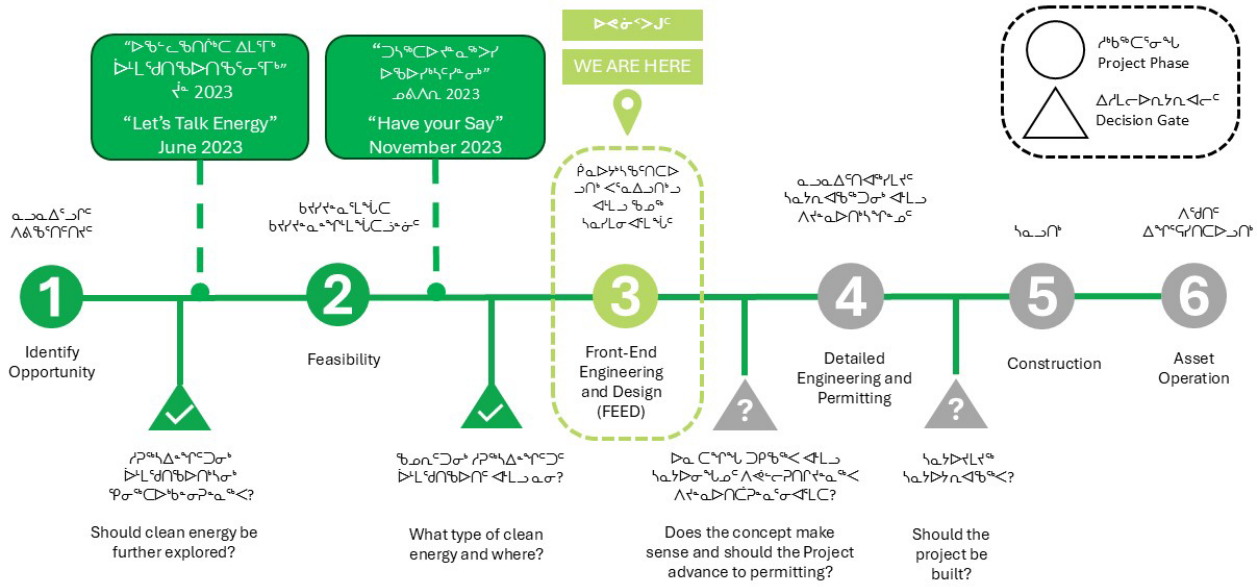

Figure 1: Phase-Gate Approach to Project Development

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.

Planned and Ongoing Work

Phase 3: Front-End Engineering and Design (FEED) began in late 2024. Key aspects of Phase 3 are commercial activities, preliminary engineering, investigative, and engagement. Below is a list of field activities to be completed in 2025.

Environmental Baseline Studies

- **Geophysical**
  - Opportunistic field sampling (soil, surface water, groundwater) will be completed in Year 1 in cooperation with field teams deployed for other disciplines.
- **Terrestrial**
  - An extensive network of wildlife cameras surrounding the primary proposed reservoir will be deployed and in a buffered area surrounding the road routing. These cameras allow also for non-wildlife analysis.
  - During camera deployment, the wildlife team will be accompanied by a terrestrial ecosystem specialist to complete ecosystem and wildlife habitat assessments at each camera location.
- **Birds**
  - Aerial surveys and point count surveys for breeding birds
  - Count stations distributed throughout areas of proposed disturbance
  - Standwatch surveys along the proposed road routes to document current patterns of bird flight behaviour where vertical structures may be constructed.
- **Fish and Fish Habitat**
  - Opportunistic field sampling will be completed in Year 1 in cooperation with field teams deployed for other disciplines.
  - With permitting requirements for fish sampling and collection, it is anticipated that this sampling would be limited to water sampling.
- **Groundwater Hydrology**
  - Opportunistic field sampling in cooperation with field teams deployed for other disciplines.
  - Continuation of hydrometric monitoring

Archaeological Assessment

The assessment will be carried out on foot, and by ATV, using two boats with outboard. The team will move systematically through the entire shoreline that will be flooded, scanning the surface for archaeological material. Newly recorded sites will be mapped, including individual features. Although the surface of the site will be examined for artifacts, there will be no collections made, and no digging or site alteration will be undertaken.

Geophysical/Geotechnical Data Campaign

Use of ground-penetrating-radar (GPR) or similar methods for non-invasive geophysical data collection. Additionally test pitting for surface materials will be completed for both engineering and environmental purposes.

LiDAR Data Collection

LiDAR Data Collection of the proposed Project area including potential corridors for linear infrastructure will be completed. The primary goals of the LiDAR Data Collection are to capture topographic data and Orthophotos for the Project area. This data will help with engineering and design as well as planning.

Temporary Camp Establishment

This camp will support on-site activities for the 2025 field season. Supply of lodging, communication tools, and supply of necessary supplies for extended occupation of the camp.

Human Environment

- **May 2025**
    - Validate field season data collection program plans with Rightsholders and incorporate Inuit Qaujimajatuqangit.
    - Continue to engage with the Rightsholders and stakeholders 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**
    - Commencement of the Socio-economic Assessment
    - Commence engagement with the community of Panniqtuuq