

The project consists of developing an 8-MW hydroelectric plant on the Inukjuak River. The proponent suggests that this hydraulic resource will allow for a nearly complete transition from diesel and heating oil to renewable energy in the community of Inukjuak.

In accordance with the provisions of Chapter 23.3.20 of the *James Bay and Northern Québec Agreement* and section 200 of the *Environment Quality Act* and after analyzing the documents provided by the proponent and taking into account consultations with the public, the Kativik Environmental Quality Commission has decided that the Innalik Hydroelectric Project by the Innalik Hydro Limited Partnership should be authorized.

However, the Commission wishes to specify to the proponent that, given concerns voiced in the host community, it has provided conditions to ensure the project is properly supervised, to monitor and mitigate impacts, and to put compensation measures in place. This will allow corrective action to be taken if necessary, in the event of unforeseen or underestimated negative impacts. The Commission also wishes to point out that any future modification to the current project must be submitted for its authorization.

You will find enclosed a document presenting the main issues the Commission has identified and specifying the conditions underlying its decision. The Commission would like the proponent to review this document, so that it may take stock of the various elements that the Commission analyzed.

Cordially,



Pierre Philie, Chair

encl.: *Projet d'aménagement hydroélectrique Innalik 3215-10-005_Décision de la CQEK Juillet 2019_EN*

KATIVIK ENVIRONMENTAL QUALITY COMMISSION

**Decision on the Innavik Hydroelectric Project by Innavik Hydro
Limited Partnership**

July 2019

TABLE OF CONTENTS

TABLE OF CONTENTS	1
PROJECT ANALYSIS	1
1. BACKGROUND AND HISTORY OF THE DECISION	1
2. PRESENTATION OF THE PROJECT'S ENVIRONMENT	1
3. PRESENTATION OF THE PROPONENT	2
4. PROJECT DESCRIPTION	2
4.1 RATIONALE FOR THE PROJECT.....	2
4.2 SUPPLY CONTRACT FOR THE SALE OF ELECTRICITY	3
4.3 DESCRIPTION OF THE PROJECT AND ITS COMPONENTS	3
<i>Permanent infrastructure</i>	<i>3</i>
<i>Temporary infrastructure</i>	<i>5</i>
4.4 PROJECT SCHEDULE AND COST	7
5. CONSULTATIONS AND COMMUNICATIONS.....	7
5.1 PUBLIC HEARINGS	7
<i>Comments received or questions asked by the various stakeholders at the public hearing.....</i>	<i>8</i>
<i>Position papers submitted to the KEQC by the FCNQ and the KRG</i>	<i>9</i>
6. MAIN ISSUES.....	10
6.1 ISSUES IN THE CONSTRUCTION PHASE	10
<i>Socio-economic aspects.....</i>	<i>10</i>
<i>Workers' camp.....</i>	<i>12</i>
<i>Waste and building materials management.....</i>	<i>13</i>
<i>Borrow pits and restoration of disturbed sites</i>	<i>14</i>
<i>Water quality and drinking-water intake.....</i>	<i>15</i>
<i>Climate change and greenhouse gases.....</i>	<i>16</i>
6.2 ISSUES IN THE OPERATIONAL PHASE	16
<i>Socio-economic impacts</i>	<i>16</i>
<i>Land access</i>	<i>18</i>
<i>Mercury in fish</i>	<i>18</i>
<i>Finally, the KEQC stresses the importance of the Inukjuamiut being regularly informed of the monitoring and its results.....</i>	<i>19</i>
<i>Fish habitat.....</i>	<i>19</i>
<i>Wetlands</i>	<i>20</i>
<i>Greenhouse gases.....</i>	<i>21</i>
7. CONCLUSION	21
DECISIONS AND CONDITIONS.....	21

PROJECT ANALYSIS

1. BACKGROUND AND HISTORY OF THE DECISION

The Innalik Hydroelectric Project on Inukjuak Category I lands is an initiative of the Pituvik Landholding Corporation. Begun in 2008, the project stems from the community's desire to reduce greenhouse gas emissions and bring economic and social benefits to the village's 1,800 residents. It is part of the Government of Quebec's 2030 Energy Policy, one of the objectives of which is to reduce use of petrol products by 40%. A targeted priority is converting electricity production from fossil fuels to renewable energy sources in communities isolated from Hydro-Québec's transmission grids. Like other villages in Nunavik, Inukjuak is supplied in electricity by a diesel thermal power plant operated by Hydro-Québec Distribution, Réseaux autonomes.

Hydroelectric power plant projects, as well as structures associated with this type of development, are subject to the environmental and social impact assessment and review process under Section 23 of the *James Bay and Northern Quebec Agreement* (JBNQA) and Title II of the *Environmental Quality Act* (EQA).

As part of the environmental and social impact assessment and review process, the Kativik Environmental Quality Commission (KEQC) analyzed the preliminary information provided by the Ministère du Développement durable, de l'Environnement et des Parcs (MDDEP) on February 3, 2009. In directives issued on April 30, 2009, the KEQC informed the administrator of Section 23 of the JBNQA of the scope and content of the impact study to be conducted. The impact study and related documents were sent to the KEQC on March 8, 2010, and on March 22, 2010. A first set of questions and comments was sent to the proponent on October 13, 2010. This latter responded on November 15, 2016. Three additional sets of questions and comments were sent to the proponent, who responded with three documents containing its answers to the questions and comments. The proponent also filed a summary of the project's impact statement, as well as additional information following public consultations. Taking the form of a public hearing and a local radio hotline, these were held by the KEQC on March 11 and 12, 2019, in Inukjuak. The purpose of these consultations was to assess the public's perception of the environmental and social impacts resulting from the construction and operation of the hydroelectric project.

The KEQC wishes to point out that the analysis performed and the decision made relate solely to the Innalik Hydroelectric Project as submitted by the Innalik Hydro Ltd Partnership. Any request for potential modification to the Project must be submitted to the KEQC for authorization.

2. PRESENTATION OF THE PROJECT'S ENVIRONMENT

The community of Inukjuak, with a population of approximately 1,800, is located on the east coast of Hudson Bay, about 140 km north of the treeline.

According to 2016 Census data, the active population is about 700 people (62% of residents), working mostly in healthcare and social services and educational services. The unemployment rate was 23%.

Inukjuak's climate is typical of the climate of northern Quebec. The average temperature in July and August is 9°C, while in January and February it is -25°C. The Inukjuak River generally begins to freeze in November and the ice cover stays until the end of May. The project area is located in a continuous permafrost zone where the duration of the frost-free season averages 40 days.

The Inukjuak River basin covers an area of approximately 11,370 km². The Inukjuak River runs about 300 km, from its source in the hills of the Canadian Shield to Hudson Bay, passing in front of the village of the same name. Between Lake Qattaakuluup Tasinga, located at the boundary of Inukjuak Category I lands, and its mouth, the river has a longitudinal profile characterized by a series of natural falls interspersed with relatively long lentic sections. At the mouth, the flow rate is estimated at 100 m³. The tide extends to the first series of rapids about two km from the mouth of the river.

3. PRESENTATION OF THE PROPONENT

The Pituvik Landholding Corporation, identified as the proponent in the impact study documents, was founded in 1979. It holds ownership rights to Category I lands in Inukjuak and manages them for the community. It is a non-profit organization.

In 2014, Pituvik Landholding Corporation selected Innergex Renewable Energy Inc. as its technical and financial partner in the development of the Innavik Hydroelectric Project. The latter is an independent producer of renewable energies that develops, acquires, owns and operates various types of renewable energies projects, including hydroelectric power projects. The company's head office is located in Longueuil, Quebec.

The partnership between Pituvik Landholding Corporation and Innergex Renewable Energy Inc. was officially signed in October 2018. It is based on an equitable sharing of the project's costs and benefits.

In 2018, following the partnership agreements, a limited partnership was created, called the Innavik Hydro Limited Partnership, and a general partner, Innavik Hydro Inc. Innavik Hydro Limited Partnership is therefore the project proponent. As previously indicated, since Pituvik Land Corporation and Innergex Renewable Energy Inc. have equal representation on the board of directors of Innavik Hydro Inc., all decisions will be made jointly by the two parties.

4. PROJECT DESCRIPTION

The Project involves the development of a run-of-river power plant about 10.3 km from the mouth of the Inukjuak River. At this point, the river is composed of four natural waterfalls, with a total height of 14.3 m spread over 2.7 km. The Project's temporary and permanent infrastructure will be developed on Category I lands in the Northern Village of Inukjuak.

The Project does not provide for the possibility of storing water in the headrace. Indeed, the site topography would not lend itself to the construction of a retaining structures of this size. Also, any raising of the headrace would require the construction of retaining dikes, in addition to a rise in the level of Qattaakuluup Tasinga Lake. The proponent indicated that this project option would not be economically viable. Therefore, the river flow will only be modified in the development sector, since no water retention will be possible.

4.1 Rationale for the Project

As mentioned above, like other villages in Nunavik, Inukjuak is not connected to Quebec's main energy transmission and distribution system. Therefore, Inukjuak is supplied in electricity by a diesel thermal power plant operated by Hydro-Québec Distribution, Réseaux autonomes.

In the *2005–2014 Supply Plan for Independent Power Systems* submitted to the Régie de l'énergie du Québec, Hydro-Québec Distribution mentions that alternatives to thermal generation must be

considered for isolated systems, particularly to meet foreseeable increases in oil costs. In this regard, the proponent notes that the current cost of energy production in Inukjuak is about 60 cents per kilowatt-hour.

The proponent also indicates that the community of Inukjuak wishes to significantly reduce the use of thermal energy, with a view to sustainable development. Thus, for much of the year, the energy produced by the Innalik Hydroelectric Project will replace the thermal energy currently used by hydroelectric energy to meet basic needs for electricity, as well as for domestic space and water heating. Therefore, the Project will reduce the production of greenhouse gases and contribute to a reduction in energy production costs.

The project name (Innalik) was found by means of a contest held in Inukjuak. This word means “a pocket inside which a flint stone and moss are kept to light a fire” in Inuktitut. This choice of name symbolically reflects the Project, which will be both a source of energy and a socio-economic lever for the community.

4.2 Supply contract for the sale of electricity

On May 27, 2019, the promoter, Innalik Hydro Limited Partnership represented by Pituvik Landholding Corporation and Innergex Renewable Energy Inc, and Hydro-Québec announced the signing of a 40-year power supply agreement. This contract provides for a fixed annual amount in return for guaranteed energy and power. This contract will be submitted to the Régie de l'énergie for approval in 2019.

In addition, it is expected that the Government of Quebec (via the Société d'habitation du Québec, the Kativik Municipal Housing Bureau (KMHB) and Transition énergétique Québec) will support the program to convert water heating and diesel spaces to electricity, a key element of the project that will maximize the use of renewable electricity by the entire community (over 480 homes). During public consultations, the proponent indicated that this conversion would be done on a voluntary basis.

4.3 Description of the project and its components

This section briefly describes the Project's permanent and temporary infrastructure.

Permanent infrastructure

The permanent infrastructure will mainly include the various structures that make up the hydroelectric development, namely the power plant, including the intake and tailrace canals, the spillway, and the dam, as well as the headrace and tailbay (Figure 1). Also planned are permanent associated structures, including access roads, a bridge across the Inukjuak River and a power transmission line.

Hydroelectric development

The plant's two generating units will have an installed capacity of 7.5 MW at a design flow of 40 m³/s or 20 m³/s for each. It will be located on the right bank of the Inukjuak River, near the dam. The tailrace canal will return turbinated water to the Inukjuak River. The 390-m-long canal will be excavated on the right bank, downstream of the power plant. The excavated width will vary from 10.25 m at the outlet of the power plant to 32 m at its downstream end. The hydrological regime of the Inukjuak River would only be altered along the approximately 400-m stretch between the proposed dam and the tailrace canal return point.

FIGURE 1: ILLUSTRATION OF THE INNAVIK HYDROELECTRIC PROJECT



Source: Excerpt from the document answering the second set of questions and comments

1. Flood evacuator; 2. Diversion channel; 3. Dam; 4. Water intake; 5. Power plant; 6. Access road; 7. Tailrace canal.

The dam (cofferdam) will be made of a rockfill structure with a sheet pile core filled with concrete. The proponent states that this method allows the core to distort as a response to the loads caused by the northern climate. This type of construction will also limit the quantity of materials to be transported by boat, including the cement to make the concrete mixture.

The construction of the various infrastructures making up the hydroelectric development will retain water upstream of the dam and spillway, designated as the headrace. The elevation will be confined to approximately 3 km upstream of the structures and over an area of approximately 1.2 km² and will not affect Qattaakuluup Tasinga Lake.

The spillway, with a 130 m long crest, will be located on the left bank of the Inukjuak River. The excavation will be carried out above the highwater mark. The structure will allow the power plant to release unturbined water into the Inukjuak River.

Access roads

The proponent indicates that the existing access road, which runs from Inukjuak to the project site along Tasiq Tullipaaq Lake, will be used as part of the project. Rehabilitation and upgrading work is to be planned, but the proponent indicates that no additional damage to the sites of archaeological interest identified by the Avataq Cultural Institute is anticipated.

The road will only be upgraded for the required sections. A 6-m wide surface, with a maximum width of 10 m, is planned. If necessary, balance culverts will be installed when the access road crosses wetlands.

A 3.641-m long bridge over the Inukjuak River is also planned. Located to the right of the first waterfall, this bridge will provide access to the river's left bank. Initially planned as a temporary structure, the bridge will be built to stay permanently if the community so requests.

Power transmission line and substations

A 25-kV transmission line will be installed along the access road. Installed on wooden poles, this line will connect the switchyard adjacent to the plant with the arrival station. Hydro-Québec's existing switchyard, which is located north of Inukjuak, will serve as the arrival station for distribution of the power produced by the plant to the community.

Temporary infrastructure

The main infrastructure to be developed during the construction phase includes the temporary diversion canal and cofferdam at the hydroelectric development site. This section also presents the methods of supply of granular material required for the construction of the various infrastructures, the management of domestic and construction waste, as well as the energy supply options at the hydroelectric development construction site.

At the hydroelectric development site

To facilitate work being carried out in front of the dam and spillway site, it is planned to install a cofferdam upstream of the main waterfall, as well as to dig a temporary diversion channel. This will dry out the riverbed by diverting the water to the temporary diversion canal.

The temporary diversion will consist of a 15-m wide canal on the left bank of the river. The canal will be excavated above the highwater mark, so the excavation will be dry. The total length of the canal will be approximately 180 m. It will be closed after construction and before priming of the headrace.

The cofferdam will be built of rockfill and will be equipped with a geomembrane on its upstream face to ensure its watertightness. It will be integrated into the permanent dam. So therefore, it will not be dismantled at the end of the construction phase.

The work site could be powered by generators, but the proponent is also considering the possibility of using the new transmission line that will be built to supply energy to the work area.

Workers' camp

Temporary housing will be provided for and accessible to workers during the construction period. This camp will be located at the northern end of the village at the junction of the access road to the site. The site was selected in collaboration with the Municipality of Inukjuak. Covering an area of 0.9 ha, the camp will have a 128-person capacity and accommodate two 10-11 hour shifts and staff rotations. The camp will be in operation mainly during the construction season, over the 3 years of work. Housing will be provided in temporary trailers, including a cafeteria and services. Transportation between the site and the camp will be ensured exclusively by the contractor, who will provide vehicles for this purpose.

The camp will be self-sufficient and provide everything necessary for the workers who reside there. The latter will work in cycles of 28 working days followed by 14 days of leave. In their free time, workers will be able to go to the village. Three flights per week are planned (chartered by the proponent), which is a capacity for carrying 30 workers per week.

Once the construction of the power plant is complete, the camp will be dismantled and returned to its point of origin. However, it is possible that dormitory units be transferred to the village to a camp owned by community members with a view to increasing their capacity. Or the site may be left as it is, at the request of the community, to be used later for new construction or other needs.

Domestic waste generated by the camp and the construction site during the construction phase (i.e., food scraps, household waste, non-recoverable lumber, packaging boxes, etc.) will be burned in an incinerator to be located on the camp site. The proponent estimates that approximately 150 kg of waste will be incinerated each day during the construction phase.

Quarries and borrow pits

For construction purposes, 9,000 m³ of concrete, 165,000 m³ of rock to be excavated and 150,000 m³ of granular materials will be required. To obtain the equipment, 3 borrow pits and quarries will be operated on a total operating area of 28.8 ha.

A crusher and screening system will be installed on site near the future hydroelectric power plant. The excavated rock can be used in concrete manufacturing or as granular material for backfilling work and storage areas. Some of this equipment will be used as concrete sand. A concrete plant will also be installed at this location.

The proponent has undertaken not to operate the borrow pits within 75 m of water bodies and streams. The first borrow pit that will be operated will be used to build the access road. The existing road from Inukjuak provides access to this borrow pit.

The proponent indicates that it will discuss with the Pituvik Landholding Corporation, as well as with the Northern Village of Inukjuak, before proceeding with the closure and restoration of the borrow pits. Given the low availability of granular materials in several villages in Nunavik, including Inukjuak, the proponent is considering the possibility of offering the Northern Village or the Landholding Corporation the opportunity to continue operating borrow pits after the construction phase of the project, particularly for community purposes.

In addition to the three borrow pits, the proponent plans to use the excavated material from the excavation of the diversion channel, power plant and tailrace canal. These will be stored in a dedicated area near the plant site and used to complete the backfilling of work and storage areas, widen access roads and build the cofferdam and the dam. In fact, the proponent plans to install a crusher and a screening machine near the plant to optimize the use of excavated rock as borrow material or coarse aggregate for concrete production. A concrete plant will be installed near the site planned for the plant's development.

Management of construction waste

In the responses to the second set of questions and comments (RQC2-24), the proponent submitted a construction-waste management plan. This plan indicates how each type of waste will be disposed of and managed. As mentioned above, this plan foresees that domestic waste and some construction waste will be incinerated in an incinerator located on the camp site. Non-recyclable construction waste will also be sent to a site authorized to receive this type of material, located south of Wemindji.

4.4 Project schedule and cost

The proponent wishes to initiate site preparation work in the fall of 2019, with the installation of the workers' camp, the upgrading of road infrastructure and the construction of a bridge over the Inukjuak River. Construction work on the various infrastructures will begin in 2020 and continue until 2022.

At the public hearing, it was mentioned that the proponent was aiming for a commissioning of the site in December 2022. The year 2022 is a special year for the community, as it marks the 100th anniversary of the release of the film *Nanook of the North*, which was shot in 1922 in the Inukjuak area.

The proponent estimates the cost of the Project at approximately \$104 million. This amount includes a down payment of approximately \$24 million from Pituvik Landholding Corporation and Innergex Renewable Energy Inc. The remaining amount will be obtained from financial institutions via long-term loans.

As indicated above, the electricity produced by the hydroelectric facility will be sold to Hydro-Québec under a 40-year supply contract.

5. CONSULTATIONS AND COMMUNICATIONS

As early as 2005, the Pituvik Landholding Corporation sought to assess the potential of various alternative energy sources in the Inukjuak region and, in 2008, it opted for the development of a run-of-river hydroelectric plant to produce clean and renewable energy. From that time on, the Landholding Corporation began planning the pre-feasibility study and environmental impact assessment and began discussions with Hydro-Québec with a view to signing an electricity supply contract for the community of Inukjuak. Information meetings with the local population and with the various government authorities were initiated and continued by the proponent. In March 2010, the Inukjuamiut voted in a referendum on the Inukjuak Hydroelectric Project. More than 72% of eligible voters showed up on polling day and, of these, 83% were in favour of carrying out the project.

5.1 Public hearings

In the weeks leading up to the public hearing held in Inukjuak on March 11 and 12, 2019, the KEQC invited the Nunavmmit and organizations from the region to attend this public hearing. The agenda for the public hearing was announced in the *Nunatsiaq News* newspaper, in an information document distributed to Inukjuak households and in messages broadcast on Inukjuak Community Radio. The public was invited to actively and widely participate in the public hearing.

The KEQC visited Inukjuak in March 2019 to listen to the comments, concerns and questions of the Nunavimmiut, more particularly the Inukjuamiut, and the various regional organizations who wished to be heard. All those in attendance were also able to question the proponent on issues of concern to them.

Several organizations or companies were present at this public hearing: the Fédération des Coopératives du Nouveau-Québec (FCNQ), Makivik Corporation, Hydro-Québec, the Kativik Regional Government (KRG), KMHB, and CRT Construction. Representatives from the Northern Village of Inukjuak, Innalik School and some members of the Pituvik Landholding Corporation were also present to comment, and ask and answer questions.

About 40 people, including some who returned on several occasions, participated in this public hearing (both at the two meetings held on March 11 at the local community centre and on community radio on March 12). KEQC members also asked the proponent several questions to clarify certain points for the audience and KEQC members who were in attendance. Of those who expressed their views or asked questions, 54% were male and 46% were female. Thirty-nine percent (39%) expressed support for, 39% disagreed with and 22% had reservations about (i.e., not in agreement but not in disagreement) the Innavik Hydroelectric Project.

Comments received or questions asked by the various stakeholders at the public hearing

Positive impact of the Innavik Hydroelectric Project

Several individuals and organizations (KRG, Makivik Corporation, Inukjuak Municipal Council) approve the proposed Innavik Project and even hope that other alternative energy projects will eventually be carried out in Nunavik. Although the transition from diesel and oil to clean renewable energy will be gradual (at first, in KMHB housing), many people hope that the regional organizations (Kativik Iisarniliriniq, Nunavik Regional Board of Health and Social Services, KRG, Makivik Corporation) will follow suit by also modifying the heating system in their housing and warehouses (conversion to electric heating).

Work on the project now, otherwise Hydro-Québec will eventually pursue the project and keep the profits. (SW)

For many Inuit, non-Indigenous employees who are not from Nunavik should receive training to increase their awareness of Inuit culture.

Several participants welcomed the opportunity for the community to invest in structuring and promising projects for young people. The project is a driver of economic development that is specific to Inukjuak.

This is our project. It was initiated by us. We will have some control over it. (CP)

From an environmental perspective, many people believe that the construction and operation of the power plant will only slightly change the environment: the river, the coast of Hudson Bay, ice conditions, etc. Studies on the evolution of mercury levels in fish should be carried out and a passage that could facilitate fish migration to the lakes should be considered.

In addition, the bridge that will cross the river will provide access to the land on both sides of the river.

Several participants expressed their agreement that the community should reduce its dependence on fossil fuels and its greenhouse gas emissions, which would consequently improve air quality.

Negative impacts of the Innavik Hydroelectric Project

Since the referendum vote was held about 10 years ago, many participants wished a new vote on the Project could be held. Many of today's young adults, who did not have the opportunity to

comment in 2010, expressed their disappointment because their opinions on the subject were not taken into account.

Many believe that the community will not reap much economic benefit, unlike the communities (Salluit, Kangirsujuaq and Puvirnituq) that have signed agreements with mining companies (Glencore and Canadian Royalties) and gained monetary compensation for it.

Many Inukjuamiut also believe that the Landholding Corporation could have been the majority owner of the Innavik Project rather than contenting itself with 50% of shares.

The quality of drinking water at the time of dam construction and operation is Inukjuak residents' main concern. Proposals were made to relocate the current pumping station upstream of the future dam.

Several participants who spoke at this public hearing expressed concern that the level of mercury in fish may increase as a result of the dam's construction.

The majority of participants in the meeting at the community centre and many of those who commented during the discussions on community radio believe that their environment will be deteriorated and that the animals currently present in the region will be dispersed (and made sick) to gain access to a handful of dollars. Some believe that ice conditions will change and that the dam could affect the Hudson Bay coast. Also, the increase in waste during the construction period could be problematic.

Part of our hunting territory will be affected (ET)
Animals and fish will be affected. We'll see how it goes. An impact on migratory flyways (SI)
Are they using our river as a test? (LNA)

While some doubt Innergex's professional experience in the North, others believe that the anthropological study was not sufficiently developed.

We do not want outsiders telling us what to do

Position papers submitted to the KEQC by the FCNQ and the KRG

FCNQ position paper

The FCNQ believes that the Innavik Hydroelectric Project will directly reduce sales of petroleum products. This decrease would result in the loss of three full-time delivery driver positions and the loss of commissions paid by the FCNQ to the Inukjuak community, estimated at over \$400,000 per year. This reduction in the local cooperative's income would in turn decrease the annual dividends paid to its members. For the FCNQ, the fact that Innergex's 50% of revenues will eventually leave Nunavik is a bad thing. It also criticizes the proponent for creating few jobs for the Inuit of Inukjuak and for not employing positive discrimination measures in favour of Inuit organizations when awarding contracts (construction, marine or air transportation, etc.).

The FCNQ recommends to the KEQC that the project take these negative impacts into account and, in the event that the Innavik Hydroelectric Project goes forward, that satisfactory mitigation

agreements be established between the proponent, the Inukjuak Co-operative Association and the FCNQ.

KRG position paper

The Innavik Hydroelectric Project meets many of the KRG's objectives and priorities, and the goals of Nunavik in general. The KRG is working to encourage governments and industry to reduce the region's dependence on fossil fuels. According to this regional organization, clean energy production in the communities must also promote job creation and economic development for the region's residents and businesses. They believe that the Innavik Project will significantly reduce Inukjuak's dependence on fossil fuels, help reduce its greenhouse gas emissions, create local jobs and support local businesses.

Regarding the Inukjuamiut's main concern (the quality of drinking water), the KRG committed to preserving and ensuring the quality of the water that supplies the community, during and after the construction phase.

The KRG feels that there will need to be further discussion in regards to employment and training at the local level. The KRG strongly recommends that its Sustainable Employment Service, Kativik Ilisarniliriniq and the Pigiursavik Training Centre coordinate their efforts to optimize the number of jobs to accessible to Nunavimmiut. The KRG also recommends that the environmental authorization be conditional to the creation of an environmental and social monitoring committee. Once the project is complete, the KRG expects that electricity be adjusted to reasonable and affordable rates with a view to supporting business start-up and development. Waste disposal is also a concern, as the Innavik Project will generate a considerable quantity of waste and exert additional pressure. In the KRG's opinion, the proponent should therefore develop, in collaboration with Inukjuak municipal council and the KRG, a waste management and disposal plan to minimize the quantities of household and construction waste. Finally, the KRG recommends that the Municipality have access to gravel pits, quarries and a crusher so that gravel can be stored to meet the community's future needs.

6. MAIN ISSUES

The following sections identify the main biophysical and social issues during the construction phase.

6.1 Issues in the construction phase

Socio-economic aspects

Jobs and training

The construction phase will provide an opportunity for members of the Inukjuak community and, given the scope of the proposed work, for Inuit from other Nunavik communities to be directly or indirectly involved in the implementation of a major infrastructure construction project.

The planned work will require an average 40 workers on site. In peak periods (i.e. in 2020 and 2021), 100 workers will be on site. The employment or business opportunities for the population and businesses of Inukjuak and Nunavik during the construction phase are mainly:

- Work as day labourers
- Operation of heavy machinery
- Involvement in procurement activities
- Support in environmental monitoring activities
- Lodging and accommodations for workers and staff who will be called to periodically visit the site
- Supply of sand and gravel

Project management and communications with the local population will also require some recruitment.

In addition to these jobs, several other opportunities for employment will arise from the Project, such as:

- Upgrading Hydro-Québec's entire distribution system
- Building Hydro-Québec's new back-up thermal power plant
- Building the new substation
- Building and operating new projects (i.e., a greenhouse for vegetables)
- Maintaining the access road to the Innavik Project

The proponent has not set a specific target for workers from the Inukjuak community or more generally the Nunavik region. Its intention is to hire (in order of priority) workers from Inukjuak, Inuit workers from other Nunavik communities and finally, workers from elsewhere in Quebec. In this respect, it foresees the inclusion of a clause specifying that offers maximizing the local hiring will be favoured. Therefore, companies that hire locally will be given priority.

A field team is expected to monitor that all workers who are available and have adequate training are prioritized. The contractor selected for the construction of the project has already developed a plan to maximize Inuit employment and is in contact with the main organizations working in the sector. Contact has been made with the Inukjuak Trade School to plan training for workers who could be directly involved in the work. It would be an opportunity for graduates or students to join contractors' teams and thus acquire the experience necessary to obtain their certificate of competency in their respective trades. The training this school offers includes carpentry, plumbing and electricity. Other training offered, including in restoration, would allow community members to be involved in related services. The contractor the proponent has retained plans to identify a local representative, particularly for interviewing in the goal of making the worker selection process more transparent and improving communication with local workers. It also plans to train outside workers about customs and habits in Inuit communities, specifically Inukjuak.

The KEQC considers that the construction period will have a positive impact on the socio-economic situation of the region, in particular because of the opportunities it will generate for direct and indirect training and employment.

The KEQC wishes to receive, before the beginning of the work and each year of the construction period, a summary assessment of the steps taken to maximize local and regional employment, of the training provided and of the results of the hiring (numbers of workers and their home towns).

Monitoring and consultation committee

The proponent has indicated that it will set up a monitoring and consultation committee at the beginning of the construction phase. This committee will be mandated with ensuring that the development, construction and operation of the run-of-river power plant is carried out in a spirit of cooperation with the host community. Its role will be to monitor and improve, when necessary, the process for receiving and processing comments and complaints at their periodic meeting, without being directly involved in the actual process. The main objective remains to correct problematic situations as quickly as possible.

The committee could include representatives from the Northern Village of Inukjuak, KRG, Pituvik Landholding Corporation, Inukjuak Hunting Fishing Trapping Association, Hunters and Trappers Committee association and Innergex. The proponent has indicated, in response to questions from the KEQC, that it will be possible for one or more Inukjuak residents to participate on this committee. In addition, the contractor will attend the meetings of this committee. The proponent wants regular updates on construction activities to be communicated to the community to keep its members informed. Community members without political designation will also be on the monitoring and consultation committee. In particular, the proponent would like an Elder and a woman, designated to represent the community, to sit on this committee.

The KEQC would like to receive, for information purposes, the final composition of the Monitoring and Consultation Committee before the start of construction work.

Workers' camp

Considering the arrival of a significant number of workers from outside the community to a temporary camp nearby, the KEQC asked several questions regarding the Project's potential social impacts. It also requested that the proponent present the measures it intends to implement to mitigate any potential negative impacts, in particular to prevent an increase in social problems related to smuggling and over-consumption of alcohol in the community of Inukjuak.

First, the proponent indicated that the camp will be alcohol and drug free. A security officer will be assigned to the camp to monitor comings and goings, and ensure compliance with rules. In addition to regular and constant monitoring of the possible problems created by the presence of the site, an annual review will be carried out after each intensive construction season with a view to identifying the necessary corrective measures for the following season. The proponent indicated that the existence of a yearly break (i.e., winter, when work cannot be carried out) will be an opportunity for the proponent to solve any issues before the next intensive work period.

Second, as mentioned above, workers from outside will receive training on the habits and customs of the Inuit of Inukjuak.

Before the start of the work, a protocol for monitoring the social impact of any behaviour that is inappropriate or threatens the peace will be developed and a confidential mechanism for handling complaints and problem cases will be put in place. These measures will be submitted to and discussed by the Monitoring and Consultation Committee. If needed, a complaint handling report, made by the proponent, will be provided to this committee.

During the last year of construction, a "landing" protocol will be put in place. Its objective will be to ensure that the worksite is completed under the best possible conditions. This process includes taking stock of the construction's impacts on the community's social fabric and normal activities. It will be carried out in collaboration with the Monitoring and Consultation Committee, in the goal

of providing measures to facilitate a return to normalcy. The proponent indicates that this process must begin before the end of construction to ensure everyone's commitment to the process. To carry out these measures, the proponent may hire the services of specialized consultants and other necessary resources.

The proponent has indicated that all these measures will be communicated to the community before the work begins. Similarly, reminders will be issued at regular intervals throughout the construction of the project.

The KEQC believes that this project is of great importance to the Inukjuak community and that the resulting social impacts must be analyzed and documented by the proponent. To this end, the KEQC would like the Monitoring and Consultation Committee to be consulted on the protocol for monitoring social impacts, on the planned mechanism for confidential handling of complaints and problematic cases, and on the "landing" protocol. The KEQC is of the opinion that the proponent must enlist the services of social impact specialists (e.g., anthropologists, sociologists, medical consultants, environmental health specialists, psychologists, etc.) to develop these measures.

The KEQC is also of the opinion that the communication strategy relating in particular to complaints, the mitigation measures implemented and the progress of work must be developed in collaboration with the Monitoring and Consultation Committee.

Finally, the KEQC wishes to be informed of the social impact monitoring protocol, of the planned mechanism for confidential handling of complaints and problem cases once these latter have been agreed upon within the Monitoring and Consultation Committee, before the start of construction work, with the exception of the "landing" protocol, which must be sent to the KEQC before the beginning of the last construction season.

Waste and building materials management

During the three-year construction phase, a significant amount of waste will be generated. In addition to the various types of waste generated by the construction work, there will also be waste from the temporary 128-person camp. As mentioned above, the proponent has proposed a waste management plan with a view to not increasing the volume of waste currently sent by the community to the Inukjuak Northern Landfill. Waste for disposal will be transported by sea from Inukjuak to Wemindji, in James Bay. A tug and a barge will be assigned exclusively to this project and will ensure the transfer of scrap and recoverable materials during the navigable season. The waste management plan excludes any work to optimize the electrical system in homes and to convert them to the electrical system.

The work in the construction phase covered by the management plan has been grouped into broad waste-generating categories, namely the camp, garage and maintenance, marine transportation and construction.

The waste management plan includes the following:

- A container for non-recyclable construction waste (plastic waste, rubber and miscellaneous waste) will be installed for recovery and then disposed of at an approved landfill site south of Wemindji.
- The metal (tin cans and metals of all kinds) will be recovered in a container and then sent to a metal recovery site.

- Domestic waste (camp and construction site) will be incinerated in a small portable incinerator equipped with two combustion chambers. Approximately 150 kg of waste will be incinerated each day.
- Waste oil will be recovered in a tank and then burned in a waste-oil heating system.
- Wood and cardboard will be piled up and burned in the open.
- Boxes and explosive products will be recovered in a secure container and incinerated, as per regulation.
- The wastewater from the camp will be treated in the treatment system of the Northern Village of Inukjuak. Domestic waste will be incinerated and wastewater from marine transportation will be sent to the treatment system in Northern Village of Inukjuak. A verification was carried out with the Pituvik Landholding Corporation regarding his ability to treat the additional wastewater. The proponent obtained a positive response. However, formal agreements are still forthcoming to ensure that the additional wastewater can also be treated.

The KEQC invites the proponent to focus its efforts on ensuring minimal burial in the community's northern landfill. As much as possible, the proponent should also opt for waste management according to the source reduction, reuse, recycling, recovery and disposal method. The KEQC considers that the proponent should work with the Inukjuak municipal council and the KRG in regard to their waste management plans.

Borrow pits and restoration of disturbed sites

The operation of the borrow pits, the crushing and screening system and the concrete plant will cause nuisances, such as noise, dust and truck traffic in the construction zone. Several mitigation measures will be implemented to reduce these impacts, including:

- Machinery traffic will be restricted to work areas and traffic areas will be provided for this purpose
- Water potentially affected by the concreting will be directed to a basin intended for this purpose and different from the basin intended for the wastewater generated during the excavation of the canal
- Water from washing the equipment and tools used for concreting will not be sent into the river or within 20 m of its banks
- The borrow pits will be located more than 75 m from any watercourses
- The borrow pits will be restored as per the regulations and after prior consultation with local authorities
- The access road will be outside village limits and the community will be informed of the construction schedule

The purpose of redevelopment and restoration is to restore the quarry and sandpits to the terrain's surrounding topography and for natural vegetation to repopulate these areas. The proponent also suggests that some of the borrow pits operated could be taken over by the community at the end of the construction work.

The KEQC is of the opinion that the restoration work to be carried out, including that related to the borrow pits, should be assessed before the end of the project. The assessment must describe the work to be carried out and its schedule and relate discussions with the municipality of the Northern Village, specifying who will be responsible for the redevelopment work, if their responsibility is transferred. This information must be sent to the KEQC before the end of the construction period.

Water quality and drinking-water intake

During the construction phase, a temporary water intake will be installed upstream to avoid any contamination of the drinking water for the Northern Village of Inukjuak. The CRT workers' camp will require an estimated 10,000 litres of drinking water per day.

Two options for the location of the temporary water intake are considered by the proponent, namely: 1) in the Inukjuak River, upstream of the location of the hydroelectric power plant, or 2) in one of the lakes located near the village, either Tasiq Tullipaaq.

The proponent has begun to outline the water quality monitoring program with the main stakeholders, namely the Northern Village of Inukjuak and the KRG. Monitoring will cover the location, frequency and analysis of the water sampling. Samples will be taken before construction begins, at a frequency that will be agreed upon with the Village and the KRG to validate whether the water from the temporary drinking-water intake can be treated through the village distribution system, with or without additional treatment. However, the Northern Village is responsible for the water distribution system.

During the construction period, water quality will be continuously monitored and the frequency of testing will be adjusted according to the level of risk and validated by the project team.

The proponent will develop an emergency measures plan to ensure that the quality of drinking water shall not be degraded at no point and under any circumstances and, if it is, that appropriate response measures are taken. If, as a result of an incident during the construction of the hydroelectric power plant, a water-quality problem occurs, the emergency measures plan would be put in motion and the water would be drawn from the temporary intake previously authorized by the authorities, until the situation returns to normal.

The KEQC notes that the final location of the temporary drinking water intake and the emergency plan have not been established and that discussions are still ongoing with the stakeholders.

The KEQC is of the opinion that an emergency measures plan that clearly identifies all the intervention and communication steps and the responsibilities of each stakeholder must be completed, in consultation with the stakeholders concerned, before the work begins. This plan must take into consideration incidents, however unlikely, and provide for the interventions to resolve any eventual issues. The proposed measures must take into account the potential duration of the disruption, the availability of trucks and drivers, and the amount of water required to supply the village and the workers' camp during this period.

This plan must also specify a review mechanism should a problem be encountered, and preventive measures must be put in place at the work site.

The KEQC also believes that the equipment for the temporary drinking water intake must be available before work begins to ensure quick reaction in the event of an incident. The equipment must be inspected and maintained regularly.

The KEQC wishes to be informed of the final choice of the location of the water intake, the follow-up planned before and during the work, the incident review mechanism and the final version of the emergency plan in the event of compromised water quality.

An annual report on water-quality monitoring, incidents and incident response and review measures must be submitted to the Monitoring and Consultation Committee and to the KEQC.

Climate change and greenhouse gases

In terms of total greenhouse gas emissions, the proponent estimates that the construction phase will emit 34,344 tonnes of equivalent carbon dioxide (tCO_{2e}) over a 4-year period.

When designing the project, the proponent indicates that the infrastructure design took into account anticipated changes in the hydrological regime, including increased precipitation (i.e., average annual flows, winter flows, early spring flooding and reduced ice cover). The proponent indicates that, since the structures will be built on rock foundations, the impacts of climate change on the project design are limited to the following points:

- Reduction in ice cover resulting in a decrease in ice forces on structures and an increase in the storage volume of frazil under the ice cover
- Higher ambient temperatures, resulting in a reduction in the annual volume of frazil generated upstream of the reservoir

The KEQC notes that the proponent has taken climate change into account in the design of its project.

6.2 Issues in the operational phase

Socio-economic impacts

Jobs and training

During the operation phase, two direct local jobs will be created. The proponent plans to target well in advance potentially interested Inuit candidates in Inukjuak who hold the basic qualifications to fill these positions. Complementary training needs will be identified and measures implemented to ensure workers acquire missing qualifications, if any. In addition, the proponent intends to offer potential candidates internship opportunities at an Innergex hydroelectric power plant currently operating in southern Quebec so that they may fully understand the tasks of an operator.

It is also envisaged that three part-time staff people will be hired for the inspection, monitoring and maintenance of the hydroelectric site and one full-time staff member for its administration. Additional staff would be hired to ensure communication with the public. Two part-time positions are foreseen for this purpose. Additional workers would be required to maintain, expand or repair the electrical distribution and transmission system.

The Pituvik Landholding Corporation aims to ensure that the project's implementation will not only promote the use of a renewable energy sector, but also serve as a major socio-economic development lever for the community of Inukjuak. Under current conditions, this non-profit organization reinvests a portion of its surplus in various local development initiatives, for a sum of about \$80,000 each year. The implementation of the Innalik Project would significantly

enhance the budgetary envelop attributed to these initiatives. The actions envisaged in this regard include, in particular:

- The creation of a youth development fund (a capital amount would be invested over 10 years, and the revenues generated would be reinvested in community projects related to youth development), up to \$125,000 per year with an indexation factor
- The creation of a “Clean Energy” fund for community development projects (\$250,000/year and growing)
- The distribution of an indexed \$250,000 per year for social development
- The operation of the project for training purposes, through training activities in science, geography and the environment for elementary and secondary school students, as well as through internships offered to students at Inukjuak’s vocational school.

In addition, the projected heating system conversion will require annual maintenance and servicing of these heating systems. A team of three full-time workers will be required. Measures to maximize Inuit hiring are also planned in this regard.

Concerns raised regarding socio-economic impacts

As mentioned in the section on public hearings, for the FCNQ, the Project would have the potential repercussion of eliminating three permanent jobs in the community (delivery drivers) and of leading to the loss of profits for the local co-op and for the FCNQ due to the decrease in heating oil and diesel sales. According to the FCNQ, this loss of revenue for the cooperative movement could even have an impact on the prices of goods for the local co-op and on annual member dividends.

It should be noted that the KRG position paper calls for further discussion on local employment and training. It strongly recommends that its sustainable employment department, Kativik Iisarniliriniq and the Pigiursavik Training Centre coordinate their efforts to optimize the number of jobs to be filled by Nunavimmiut.

The KEQC acknowledges the FCNQ’s concerns regarding the losses that could be caused by the project. However, the KEQC also notes that the economic spin-offs generated by the construction phase would be significant locally and regionally, given the proponent’s efforts to maximize Inuit employment. It shares the KRG’s view that every effort should be made to maximize local employment and training.

During the operating phase, the KEQC notes that positive economic spin-offs are also to be expected in the operating phase through the Project’s creation of direct and indirect temporary and permanent jobs. Moreover, the reinvestment of the profits from energy production for socio-economic development purposes will also give rise to various projects that are likely to improve the quality of life in the community of Inukjuak. The KEQC is of the opinion that the proposed reinvestment projects must be presented to the Monitoring and Consultation Committee for discussion before being carried out. In this regard, it wishes to receive an assessment every five years following the plant’s commissioning of the hiring and socio-economic development projects carried out in the community of Inukjuak as a result of the Project.

Finally, reducing an Inuit community’s dependence on fossil fuels will inevitably generate losses for this economic sector even if fuel-storage facilities and the diesel plant itself are maintained. However, the KEQC considers, from a perspective of sustainable development and

in the context of climate change, that the overall environmental and socio-economic gains that will be generated by this Project should exceed the foreseen losses.

Land access

The project will significantly change the pattern of accessibility to the land. The road network providing access to the power plant will remain accessible at all times, with the exception of specific periods during the construction phase, for safety reasons, particularly during blasting. Access to the land during the operating phase will be facilitated by the improvement of existing roads and also by the installation of a bridge to the left bank of the Inukjuaq River. Moreover, the proponent will ensure that the access roads to its facilities are maintained throughout the life of the Project.

Already, the village's hunters and fishermen are taking the existing road to Qattaakuluup Tasinga Lake. Access may be difficult during the construction period, particularly due to the borrow pits and heavy traffic. To address this concern, Pituvik and Innergex will evaluate the possibility of developing a reserved lane within the right-of-way that will be improved to maintain community members' easy and safe access.

The bridge across the Inukjuaq River, which is slated to be built at the beginning of the project, is also a major gain in community access to the land. However, facilitated access will create increased pressure on resources use in an area of Inukjuaq Lands I and II that was previously less easily exploitable. As the Pituvik Landholding Corporation is both a privileged partner in the project and the manager of Lands I, it is particularly well-placed to plan for the use and development of this area.

The KEQC is well aware that in Nunavik this type of access infrastructure most frequently paves the way for future development. Consequently, it considers that the planned Monitoring and Consultation Committee should be informed and involved in the mitigation and planning measures for the use of this land that should be implemented during the construction and operating phases.

Mercury in fish

In the Nord-du-Québec region, including Nunavik, mercury in ecosystems comes mainly from coal combustion and waste incineration. After being airborne over long distances, it is deposited on soils, vegetation and water. The inorganic form is relatively harmless since it is not easily assimilated by living beings. However, bacteria on the bottom of lakes and rivers can transform the inorganic form of mercury into methylmercury. This latter, which is very stable, is easily assimilated by living beings. In addition, it is biomagnified and its concentration amplifies throughout the food chain. Humans can absorb mercury by eating fish, particularly piscivorous species that accumulated more mercury in their flesh than non-piscivorous species.

The increase in mercury in fish flesh following the priming of hydroelectric reservoirs is a well-documented phenomenon. Indeed, the significant presence of flooded vegetation, erosion of river banks created by reservoir priming and tidal action, and the presence of anoxic zones, are factors that increase mercury levels in fish in these reservoirs. However, this phenomenon is not very observable in run-of-river power plants like the Innalik Hydroelectric Project since this type of structure is not associated with the priming and management of a reservoir. The small surface areas flooded, the very short priming period (a few days) and the very short renewal rate in the headrace are factors that contribute to a significant decrease in methylmercury levels in the water and,

consequently, in the fish found there. In addition, the Innavik Hydroelectric Project will be located in an area where average and annual temperatures are relatively low, thus contributing to reducing bacterial transformation from the inorganic form of mercury to methylmercury.

In view of the above, the proponent indicates that it does not anticipate any concerns regarding the risk of increased mercury levels in fish. However, this aspect remains a concern for the Inukjuak community and was raised several times during the consultations the proponent held on the Project, as well as during those conducted by the KEQC in March 2019. Thus, the proponent has undertaken to monitor mercury levels in fish flesh over a period of 15 years after priming the headrace. The fish species that will be targeted by this monitoring are lake whitefish and brook trout, two generally non-piscivorous but opportunistic species, as well as lake trout, a species generally considered to be piscivorous.

The proponent plans to inform the Inukjuak population of the implemented monitoring and their results. In particular, it proposes to broadcast public announcements on local radio and to inform the Monitoring and Consultation Committee.

Although the KEQC shares the proponent's conclusions on the low probability that the Innavik Hydroelectric Project will significantly increase mercury levels in fish, it notes that this aspect remains a major concern for the Inukjuamiut.

The KEQC is therefore of the opinion that monitoring of mercury levels in fish flesh, as proposed by the proponent, must be implemented. Follow-up reports must be submitted to the KEQC.

Finally, the KEQC stresses the importance of the Inukjuamiut being regularly informed of the monitoring and its results.

Fish habitat

Fish habitat in the section of the Inukjuak River located between the dam and the outlet of the tailrace canal will be altered by the development and operation of infrastructure. A portion of this section, totaling 4,652 m², will be permanently flooded between the dam and the spillway outlet. The maximum exposure will be observed during wintertime low-water periods when all the water in the Inukjuak River is turbinized by the generating station and no spills flow through the spillway. According to the proponent's estimates, this situation could occur on average 69 days per year. In this situation, the maximum dewatered area would total 36,954 m² between the dam and the outlet of the tailrace canal. During the rest of the year, the flooded area will vary seasonally with the natural flow of the Inukjuak River. According to the habitat and fish community characterization study, this section of the Inukjuak River that will be dewatered could be used as a feeding area for brook trout and landlocked salmon.

The proponent indicated that it paid particular attention to the design of the diversion channel. Its goal was to maintain natural water levels upstream of the proposed cofferdam for all flows during the diversion period to avoid a change in flow conditions in areas likely frequented during salmonid and coregonid spawning.

To compensate fish habitat losses, the proponent has committed to develop a compensation plan in consultation with local stakeholders (Uumajuit warden, municipality, etc.). It indicated that compensation could take the form of habitat creation, improvement or other works. These options will also be discussed with the appropriate authorities in the Quebec Ministère des Forêts, de la Faune et des Parcs (MFFP) and Fisheries and Oceans Canada (FOC).

In response to community members' recommendations, the proponent has also committed to monitoring the developments for 10 years. Community members will be consulted to develop appropriate compensation measures for the modification of fish habitat. The monitoring program will be developed in collaboration with MFFP and FOC stakeholders, as appropriate.

Wetlands

The proponent conducted wetland characterization studies in the project study area and made the observations required to identify plant species with special status. No species with special status have been observed in the sectors inventoried, either in wetlands or on land. The inventoried sectors are distributed over the entire study area and cover all existing habitats within it.

Following the localization of wetlands, the proponent optimized the project's planned locations to minimize the risk of wetlands (i.e., by abandoning or repositioning portions of roads, a borrow pit or modifying the boundaries of some and repositioning some infrastructure (area of deposit of material, placement of the crusher, etc.)). The proponent also indicated that it has adjusted the project planning to minimize impact on wetlands. In general, the reuse of existing infrastructure and trails was favoured to mitigate impact on natural environments.

Following the optimization of the project to avoid wetlands and minimize impact on them, the proponent carried out an assessment of the encroachments caused by the Project. Flooding upstream of the dam is by far the component that will affect the largest area of wetlands, since it alone will transform nearly 22 ha of wetlands into large areas of open water. The construction of other infrastructure (road, camp, etc.) will result in less loss of wetlands (i.e., 1.1 ha).

The proponent has undertaken to compensate the inevitable loss of wetlands and set up a consultation with municipal stakeholders (Uumajuit warden, municipality, Elders, youth, women, etc.). The proponent has indicated that other measures will also be proposed for the construction of infrastructure at the plans and specifications stage. These details will make it possible to identify all the components for which mitigation measures must be proposed with a view to limiting impacts, particularly on wetlands.

The proponent presented more generally the ecological functions of all wetlands in the area under study.

The KEQC agrees with the proponent's proposals to develop compensation plans for fish-habitat and wetland losses. These must be submitted to the KEQC for a decision before the end of the construction phase and must be implemented no later than 2 years after commissioning. The proponent must present the consultations conducted and the feedback received, including ones from the Monitoring and Consultation Committee. Compensation plans should include monitoring of the planned development.

In addition, an avoidance and mitigation plan to contextualize the significance of wetland losses and the planned efforts to avoid and mitigate the project's impacts must be submitted to the KEQC for a decision. The planned compensation must make it possible to compensate the surface area and ecological functions of the wetlands lost because of the project. The KEQC is also in favour of compensation in northern environments taking the form of a knowledge-acquisition project (for example, on the ecological and biodiversity valuation of wetlands).

Greenhouse gases

During the operating phase, which is expected to last 40 years, the proponent estimates that the project will emit an average of 386 tCO_{2e} per year, for a total emission of 15,453 tCO_{2e}. The proponent estimates total greenhouse gas emissions will be 49,797 tCO_{2e} over the Project's entire life cycle, including construction. According to the proponent, the Innalik Hydroelectric Project will result in a reduction of approximately 696,000 tCO_{2e}, when compared to the quantities of GHG currently emitted, in the situation in which electricity in Inukjuak is supplied by a diesel thermal power plant.

The KEQC notes that the project is not only in keeping with the Government of Quebec's 2030 Energy Policy, it will also meet the community of Inukjuak's desire to reduce its greenhouse gas emissions.

7. CONCLUSION

The KEQC considers that the social concerns stemming from the Project take precedence over its other issues. The social acceptability of the project seems to have been achieved, although concerns persist, in particular with regard to the economic benefits for the community and risks for the community if the supervision the proponent foresees for the construction phase is not carried out properly. Nonetheless, the KEQC is aware that this project will involve major changes for the Inukjuak community.

The KEQC sees the transition from thermal energy use to hydroelectric power as a very positive development for the community of Inukjuak. However, the fuel-storage facilities, fuel transportation and the maintenance of the diesel plant lead us to consider that no project is perfect. In a broader sense, solutions adapted to each community must be considered when planning energy supply in Nunavik.

In light of the above, the KEQC is of the opinion that the project must be authorized. However, given the concerns of the host community, the KEQC provides conditions that will allow the project to be properly supervised and the impacts to be monitored and mitigation and compensation measures to be put in place. This will allow corrective action to be taken in the event of unforeseen or underestimated negative impacts.

DECISIONS AND CONDITIONS

In accordance with Section 23 of the *James Bay and Northern Quebec Agreement* and Title II of the *Environment Quality Act*, after analysis of the documents provided by the proponent and taking into account consultations with the public:

**The Kativik Environmental Quality Commission decides that the
Innalik Hydroelectric Project in Inukjuak by
Innalik Hydro Limited Partnership must be authorized.**

This decision relates to the project presented in *Environmental and Social Impact Assessment - Innalik Hydroelectric Development Project* and supporting documents. Any modification or addition to the authorized Project must be submitted to the KEQC for decision.

This decision is conditional on compliance with the conditions listed in below.

Condition 1 : This authorization is valid to the extent that the construction of the hydroelectric power plant is undertaken within five (5) years from the date of authorization of this Project pursuant to the provisions of Title II of the *Environment Quality Act* and Section 23 of the *James Bay and Northern Québec Agreement*.

Condition 2 : The Monitoring and Consultation Committee planned by the proponent for this Project must be established by the beginning of the construction phase and its composition must be communicated to the KEQC for information by that date. This Committee will be consulted by the promoter, in particular in regards to:

- The confidential complaints mechanism;
- The proponent's communication strategy with the public;
- The progress of the work and the implementation of mitigation measures, including those that may be required by the road accesses created and the opening up of the land;
- The results of the various environmental or social monitoring programs and compensation projects carried out by the proponent or required under this authorization.

Condition 3 : A program to monitor the social impacts attributable to the Project must be in place to cover the construction phase and a representative portion of the operations phase. The program has to be develop with the collaboration of social impact specialists. The arrangements for carrying out the Project must be submitted to the KEQC for authorisation within six months of the Project's authorization.

Condition 4 : Before the beginning of the work and each year of the construction period, a summary report of the steps taken to maximize local and regional employment, the training provided and the hiring results (number of workers and home towns) made must be presented to the KEQC for information purposes.

Condition 5 : The proposed reinvestment projects must be submitted for discussion to the Monitoring and Consultation Committee prior to their implementation. Every five years following plant commissioning, a report on the hiring and the socio-economic development stemming from the construction of the hydroelectric plant in the community of Inukjuak must be submitted to the KEQC.

Condition 6 : The KEQC must be informed by the start of construction of the final choice of location for the temporary drinking water intake. The nature of the work required to put it in place must also be presented, as well as the opinions of the organizations affected by the Project.

Before work begins, an emergency response plan that clearly identifies all response and communication and the responsibilities of each stakeholder must be completed, in consultation with the stakeholders concerned. This plan must take into consideration incidents, even unlikely incidents, and provide for interventions to be carried out to deal with any eventuality. The proposed

measures must take into account the potential duration of the disruption, the availability of trucks and drivers, and the amount of water required to supply the village and the workers' camp during the period of disruption. In the event of a problem, a mechanism for reviewing the incident must also be provided for and preventive measures must be put in place at the site. The emergency response plan must be submitted, for information purposes, to the KEQC before the start of the water environment work.

In addition, equipment for the temporary drinking water intake must be available before work begins so as to ensure fast response in the event of an incident resulting in contamination of the drinking water. The equipment must be inspected and maintained regularly.

An annual report on the monitoring of the quality of the drinking water provided during the construction period must be sent to the KEQC for information purposes. Incidents, mitigation measures taken and observations made during discussions with the Monitoring and Consultation Committee should be included in this report.

Condition 7 : The results of the monitoring program for mercury levels in fish must be reported to the KEQC for information purposes. The communication of the results to the public and the specific measures to be taken related to fish consumption, if required, should be done in consultation with the government agencies concerned, including the Nunavik Regional Board of Health and Social Services.

Condition 8 : In the final year of construction, the proponent must submit to the KEQC, for information purposes, a document detailing the measures it intends to take and the monitoring it intends to carry out to facilitate what it describes as the Project's "landing" protocol. This document will report on discussions with stakeholders, including the Monitoring and Consultation Committee.

Condition 9 : In the final year of construction, the proponent must also submit to the KEQC, for information purposes, an assessment of the areas affected by the Project and details of the restoration, clean-up and redevelopment measures that are planned. In the event that certain sectors are not restored as planned, any new measures will necessarily be the subject of a prior decision by the KEQC. In the event that the redevelopment of certain sectors, including the borrow pits, should be entrusted to another entity, KEQC must be informed of any agreements made to ensure that this restoration work is carried out.

Condition 10 : Before the completion of the construction work, the proponent must submit to the KEQC for its approval the compensation plans for fish habitat and wetland loss. The proponent must present the consultation procedures carried out and the feedback received. In both cases, it will be necessary to specify whether work related to the construction of access or infrastructure is required. Compensation plans should include monitoring of planned developments. These compensation plans must be implemented no later than two (2) years after the plant is commissioned.