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September 18th 2013

BY-ELECTRONIC MAIL: info@nirb.ca

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Jaswir Dhillon
Technical Advisor
Nunavut Impact Review Board
P.O. Box 1360,
Cambridge Bay, NU
X0A 0B0

Re: Comment Request for NIRB's Revised Draft Scope and Draft EIS Guidelines for QEC's Iqaluit Hydroelectric Project – NIRB File # 13UN006

Dear Jaswir Dhillon,

On August 16th 2013, the Nunavut Impact Review Board (NIRB) requested comments on the Revised *Draft Scope* and *Draft EIS Guidelines* for Qulliq Energy Corporation's (QEC or Proponent) Iqaluit Hydroelectric Project Proposal currently under Part 5 review. The Qikiqtani Inuit Association (QIA) Department of Lands and Resources would like to thank the Nunavut Impact Review Board for providing the opportunity to comment on the Draft Scope and Draft Guidelines for this proposal.

QEC is currently proposing a two-phased project which would see two hydroelectric dams built on the southern shore of Frobisher Bay. Phase 1 would be located at Jaynes Inlet while Phase 2 would be located at Armshow South.

This letter provides a summary of QIA's technical and community concerns which include a list of requests for guideline development. Most importantly however, due to the significant level of concern QIA has uncovered, it is unclear now whether we can approve this project as it is currently proposed.



Technical Concerns

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QIA has a particular issue with the fact that QEC has identified many barriers to construction of the Armshow South site, yet still wishes to proceed with this component of the overall hydroelectric project. In QEC's Project Proposal several issues have been identified that put the adequacy of construction plans at Armshow South in question. These issues relate to the dam abutment, the penstock route and the dam and penstock foundation. QIA would like to draw attention to the following excerpts from the QEC project description:

- The right abutment has a thick blanket (greater than 5 m thick) of bouldery till on moderate slopes. There are no indicators of bedrock on the slope. Small terraces were observed on the hillsides that are interpreted to be the result of solifluction (downslope movement of seasonally thawed soil over the permafrost). This is considered to be a high risk dam site due to the unknown depth to bedrock in the right abutment.
- The first 3.0 km of the penstock route would be in moderate slopes of bouldery till. This material is potentially frost susceptible and is showing signs of solifluction movement. The entire hillslope may be creeping towards the river. Maintenance of a penstock on this material may present a design challenge.
- An asphalt-core rockfill dam is proposed at the outlet of the existing lake due to the potentially low strength foundations. It is possible that suitable foundations will not be found without considerable excavation. A possible alternative is an earthfill dam that can be constructed over the in situ till. The construction of earthfill dams on permafrost foundations has many risks.
- The surface soils (of the potential penstock route) are potentially deep glacial tills that appear to be creeping. These foundation conditions could damage the penstock due to movement.

It is clear that these issues should prevent the proponent from attempting to construct a dam at Armshorn without first undertaking further studies and reporting back to stakeholders.

Regarding operational plans, QIA has identified project components which are concerning and will require further analysis. For example, sewage and water discharge are elements of particular importance to QIA as this practice could potentially have effects downstream of the Armsham south site.

QEC has stated that it will likely treat sewage in a packaged sewage treatment plant and it would then be discharged to the Bay of Two Rivers. This is concerning to QIA based on the importance of the Bay of Two Rivers for Inuit harvesters and at this point, it is unclear what effect the discharge of treated sewage would have on the ecosystem.



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QEC also states that their plans for “constant discharge of water to the river at the onset of winter will create the conditions for an enlarged persistent ice-covered pool extending further downstream to the tidal flats”. It is unknown at this time how this could potentially negatively affect local Inuit who are accustomed to using that area for travel, fishing and/or hunting. QIA requests that this topic be further explained by the proponent by including an assessment of alternatives, mitigation measures and potential impacts.

Community Concerns

During the past year, QIA has had the opportunity to meet with our local Community Lands and Resource Committee (CLARC) members in Iqaluit and Kimmirut to discuss this proposed project and their comments and concerns have formed the basis for previous submissions to NIRB. Most recently, QIA was given the opportunity to participate in community scoping sessions held by the NIRB in the potentially affected communities of Iqaluit, Kimmirut and Pangnirtung during September 10th to 12th 2013. As a method of providing NIRB with as many sources of local knowledge regarding the potential project, QIA also arranged to have some of our local CLARC members, Community Directors and Community Liaison Officers sit in on the scoping meetings in their respective communities. As QIA was able to attend these NIRB Scoping sessions we would like to report on several themes that emerged from community member comments.

Harvesting and food security

Hydroelectric generation is a new technology to Nunavut. There is widespread concern regarding how this type of project could affect local species including fish, whales, clams, birds, etc., wherever a hydro dam is constructed. More specifically however, residents in the three consulted communities shared the same sentiment that if a project were to be constructed at the Armshow South site, community members could potentially lose a vital area that has been used for generations to harvest beluga, seals and most importantly Arctic Char.

It is clear so far that a hydro dam at Armshow South will cause a large impact in the area. The proponent plans to have a barge landing area right in the Bay of Two Rivers to shuttle construction supplies to the site. The barge landing is proposed to be built in direct vicinity of Nungarut's prime fishing waters. Most importantly to consider is the fact that the proponent must use this area during the open water season which happens to be the time that this area is most important to Inuit. Inuit have not been consulted on how this significant impact could be mitigated.



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- Provide a thorough assessment of barge landing locations at Armshow South that takes into consideration impacts to local harvesters during the open water season.
- Identify how they plan to mitigate any impact to local harvesters and fish habitat including an assessment of potential impact to fish and other species downstream from the dam operations from mercury and other contaminants present in the soils.
- QIA also requests that clams, as a locally important marine species, be included in baseline studies, impact predictions and become listed as a valued ecosystemic component (VEC).

Kimmirut trail and Katannilik Territorial Park access and safety

In the project plans, QEC has proposed to flood the upper lake at Armshow South increasing the height of the lake by 25 meters. This is of concern to Inuit for a variety of reasons. First of all, an important segment of the snowmobile trail between Kimmirut and Iqaluit lies on upper Armshow South Lake and it is unclear whether Inuit would still have access to this lake for travelling between the communities after the project is constructed. QIA hypothesizes that raising the lake water level and continuously draining it over the winter months will create a potentially dangerous environment for snowmobile travel. A specific concern is that air pockets may form under the ice due to the varying water levels and as snowmobiles attempt to cross they could potentially fall through the ice. Furthermore, the Iqaluit CLARC has stated that because of the topography in the region of the upper lake, it will be nearly impossible and potentially dangerous to find another route to travel between the communities of Kimmirut and Iqaluit.

Another concern raised by many Inuit is with water flowing out from the heat-traced Tailraces at both Jaynes Inlet and the Armshaw South sites due to the importance of ice for travel during the winter and spring.

OIA requests that OEC

- Provide an assessment of the Upper Lake characteristics during the different seasons. For example, QEC should provide information on variance in lake heights, volume, accessibility, and ice conditions.
- Provide an assessment of the impact of outflow of water to the quality and quantity of ice on the lakes, trails, and pack ice which takes into account that water will be warmer than the surrounding environment.
- Develop visual aids such as dioramas to help people understand the significance of the damming on the lakes.



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Project and electricity costs

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At this point, it seems that community members are under the impression that this project will lower electricity costs for residential users. However, due to the massive capital investment required it may be many years before residents see any reduction in electricity costs. Inuit have stated that they are concerned that electricity rates or taxes will be raised to help QEC pay for this development.

- QIA requests that QEC submit a clear plan for how they will fund this development and also make it clear if at any point residents may see a decrease in electricity prices.

Project Alternatives

In a letter dated August 3rd 2013 regarding the draft scope and guidelines for the QEC project, QIA had stated that sufficient alternatives have not been presented for the location of the second phase of this project.

- QIA requests that the proponent provide a thorough discussion of the alternative hydro generation sources in the area and also provide an explanation as to why Armshow South was chosen. It is clear to QIA that QEC has not used information gained from consultations with Inuit in communities in developing this project proposal as there are many concerns with regards to the Armshow South site.
- QIA also requests that the proponent more fully describe their evaluation of the current and future electricity demand of Iqaluit. This description should also include an assessment of alternative methods of satisfying electrical demand such as implementing energy efficiency retrofits within the community.

Conclusion

Based on the level of technical and community concerns encountered and described in this letter, QIA has come to a point where we had to make a decision on whether we can support this project as it is presently submitted. We have convened our Iqaluit CLARC members on September 16th and 18th 2013 to discuss our options moving forward. It is clear that QIA and the CLARC agree with the sentiment shared by community members about the location of the proposed hydro development at Armshow South. This location, also known as *Nungarut*, is of utmost importance to residents in Iqaluit and Kimmirut as it is a vital fishing, hunting, and travelling area. The Proponent has not proven that this project will be worthwhile for Inuit in an economic sense nor has it shown any evidence that the Armshow South component can be built in a way that is safe without affecting food security, access to the land and the Inuit way of life.



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QIA is hereby requesting that the proposed Project be returned to the Proponent for modification based on the fact that it is unclear if this project will enhance and protect the existing and future well-being of communities if food security and access to the land are compromised. It is also unclear if the project can be built at Armshow South in a safe manner based on the technical issues present. At this time, QIA and the Iqaluit CLARC have concluded that we will only consider approving any permits for Qulliq Energy Corporation if the proponent agrees to resubmit this project proposal without the Armshow South hydro dam component.

Please note that today September 18th 2013, the Iqaluit CLARC have passed a resolution to support QIA in its request to have the project modified. Please see the attached document for a signed copy of the resolution.

Should you require more information about these comments, do not hesitate to contact Joel Fortier, QIA Environmental Assessment Coordinator, at jfortier@qia.ca or (867) 975-8400.

Sincerely,

B. Hardee

Bernie MacIsaac
Director of Lands and Resources
Oikigtani Inuit Association



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September 18th 2013

On September 18th 2013, the Iqaluit Community Lands and Resource Committee (CLARC) convened to review QIA's attached letter regarding Qulliq Energy Corporation's Iqaluit Hydroelectric Project – NIRB File # 13UN006.

The CLARC agrees that the concerns raised by QIA in its letter are consistent with Inuit concerns. The Iqaluit CLARC has resolved on September 18th 2013 that the Nunavut Impact Review Board support QIA's request to have Qulliq Energy Corporation modify their project to remove the Armshow South Hydro Dam Component.

Sincerely,

Alice Joamie,

Iqaluit CLARC Member

Moses Atagoyuk, M.ATA Goyuk

Iqaluit CLARC Member

Ben Kovic
Iqaluit CLARC Member


Aksaqtunguaq Ashoona,
Iqaluit CLARC Member

