Canadian Northern Economic Development Agency
Agence canadienne de développement économique du Nord
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September 16, 2013

Amanda Hanson
Director, Technical Services
Nunavut Impact Review Board
PO Box 1360
Cambridge Bay, NU
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Via email: info@nirb.ca

RE: NIRB 13UN006: Request for Comments on the *Draft* Scope and *Draft* EIS Guidelines for Qulliq Energy Corporation's "Iqaluit Hydroelectric" Project Proposal

Dear Ms Hanson,

Thank you for your letter dated August 16th, 2013 requesting comments from federal departments on the *Draft* scope and *Draft* EIS guidelines for the Iqaluit Hydroelectric Project. I am responding on behalf of the federal departments including Aboriginal Affairs and Northern Development Canada, Environment Canada, Fisheries and Oceans Canada, Natural Resources Canada and Transport Canada.

The federal departments have conducted a review of the revised *Draft* scope and *Draft* EIS Guidelines for Qulliq Energy Corporation's "Iqaluit Hydroelectric" Project Proposal. As requested, I am pleased to provide the NIRB with the comments from the federal departments (see attached Table 1).

A contact list from federal departments for the Iqaluit Hydroelectric Project is also attached (see attached Table 2).

We look forward to participating in future stages of the review of this proposed Project.

Sincerely,

Matthew Spence
Director General
Northern Projects Management Office

cc:
Erika Marteleira, Aboriginal Affairs and Northern Development Canada
Daniel Ingram, Environment Canada
Todd Shwartz, Fisheries and Oceans Canada
Kathleen Cavallaro, Natural Resources Canada
Meighan Andrews, Transport Canada
Tineka Simmons, Northern Projects Management Office

Enclosed (2):
Table 1: Qulliq Energy Corporation's Iqaluit Hydroelectric Project - Comments on the Scope from Federal Departments
Table 2: Qulliq Energy Corporation's Iqaluit Hydroelectric Project - Federal Departments Contact List

Canada

Table 1

Qulliq Energy Corporation's Iqaluit Hydroelectric Project
Comments on the Revised Draft Scope and Draft EIS Guidelines from Federal Departments

(FOR SUBMISSION TO THE NIRB)

#	Department	Section Title (with Section number)	Reference (Scope and EIS Guidelines)			Comment / Rationale	Suggested Text
			Document	Page	Paragraph		
1	AANDC	Alternatives Section 5.6	EIS Guidelines	15	2	As part of the alternatives assessment, the proponent should indicate the rationale for selecting the location for each of the proposed project sites, and include an assessment for other sites.	5.6.3 Alternative Locations for the Project The Proponent must outline the selection criteria used to determine the locations of the project, including potential socio-economic and ecosystemic impacts of each location as outlined in Section 7.6. The alternative locations and the rationale used in the location selection process must be provided.
2	AANDC	Section 7.10 (b) vi.	EIS Guidelines	35	4	This should also include changes to timing of ice break-up.	vi. Changes to the timing of ice formation and ice breakup.
3	AANDC	Section 7.10 (c)	EIS Guidelines	35	5	Climate change impact scenarios should also be run to include relevant hydrology models.	c) It is recommended that the range of future climates considered by the Proponent include hydrology models, scenarios used in the Arctic Impact Assessment Report (ACIA, 2005) as well as those in the relevant Intergovernmental Panel on Climate Change assessments for polar regions (IPCC 2007).
4	AANDC	Section 7.11 (b)	EIS Guidelines	36	4	Potential cumulative impacts can occur from any activity in the area, as well as from development activities.	*A longer temporal scale (as defined in Section 7.5.2):* this will enable the Proponent to consider all activities and developments from the past into the present time and the reasonably foreseeable future for a more accurate analysis of variability and significant long-term effects;
5	AANDC	Section 8.2.10.1	EIS Guidelines	61	2	The Proponent should provide baseline information for current utility prices for all categories of users (ie. home-owners, property management firms, government, commercial, private)	8.2.10.1 Baseline Information e) Describe current utility prices for all categories of users (ie. home-owners, property management firms, government, commercial, private)

6	**AANDC**	**Section 8.2.10.2**	**EIS Guidelines**	**61**	**3**	The Proponent should provide an impact assessment of the potential impact the project will have on utility prices for all categories of users (ie. home-owners, property management firms, government, commercial, private).	8.2.10.2 Impact Assessment e) Discuss potential impacts the project will have on utility prices for all categories of users (ie. home-owners, property management firms, government, commercial, private).
7	**DFO**	**8.1.9.2 Impact Assessment**	**EIS Guidelines**	**47-48**		While this section provides good general guidance on impact assessments for the project, since this is a hydroelectric project I feel that some specific guidance related to Hydroelectric project impacts should be added.	r) Evaluate and discuss the potential impacts from the hydroelectric development including: turbine mortality for the turbine type selected and fish species impacted; designs for fish screens to prevent/minimize entrainment of fish; spillway mortality including barotrauma and risks of impacts with flow dissipaters/diffusers; risk of gas bubble disease; operation including impacts from flow ramping (e.g. cycling or pulse between high and low flows to meet changes in demand for electricity) and alternating flows between spillways and powerhouse/tailrace on fish and invertebrate stranding and fish habitat in receiving waters; emergency shut downs and impacts to flows on fish and fish habitat in receiving waters;
8	**DFO**	**9.4.12 Aquatic Effects Management Plan**	**EIS Guidelines**	**72**		While this section provides good general guidance management of impacts for the project, since this is a hydroelectric project I feel that some specific guidance related to Hydroelectric project impacts should be added	h) Evaluate and discuss mitigation measures and monitoring studies necessary to manage the potential impacts from the hydroelectric development including: turbine mortality for the turbine type selected and fish species impacted; designs for fish screens to prevent/minimize entrainment of fish; spillway mortality including barotrauma and risks of impacts with flow dissipaters/diffusers; risk of gas bubble disease; operation including impacts from flow ramping (e.g. cycling or pulse between high and low flows to meet changes in demand for electricity) and alternating flows between spillways and powerhouse/tailrace on fish and invertebrate stranding and fish habitat in receiving waters; emergency shut downs and impacts to flows on fish and fish habitat in receiving waters;
9	**DFO**	**9.4.14 No Net Loss Plan**	**EIS Guidelines**	**73-74**		DFO's No Net Loss Policy is going to change with the implementation of the new Fisheries Act. This section of the EIS will change before an Authorization is issued for the project. I recommend that an editorial comment/placeholder be written at the top of this section indicating that changes should occur so they should discuss this aspect of the EIS with DFO prior to submittal.	[Editorial Note: When the updated Fisheries Act comes into force it is anticipated that the Policy for the management of Fish Habitat (DFO 1986) will also be updated. DFO's No Net Loss policy is also expected to change. Please contact the DFO assessor for this project when you are preparing the EIS to ensure you are following the most up to date policy.]
10	**DFO**	**9.4.14 No Net Loss Plan**	**EIS Guidelines**	**73**		First paragraph has the wrong date for the Policy for the Management of Fish Habitat (DFO, 1991) The policy is dated 1986	Policy for the Management of Fish Habitat (DFO 1986)
11	**DFO**	**12.0 LITERATURE CITED**	**EIS Guidelines**	**81**		Literature cited Wrong date for the DFO Policy for the Management of Fish Habitat (DFO, 1991) The policy is dated 1986	DFO (Fisheries and Oceans Canada). 1986. Policy for the Management of Fish Habitat. Department of Fisheries and Oceans, Ottawa, Ontario: 32 pp.

12	**EC**	**Section 1) b. iii) Ancillary Infrastructure and Additional Details**	**Scope**	**3**		The Draft Scope outlines that the temporary camp will include • *Disposal of sewage (15 cubic metres per day (m3/day)) using a packaged sewage treatment plant;* • *Disposal of greywater (6 m3/day) and drilling brine (1 m3/day) through a sump which will then be treated in the sewage treatment plant or stored in a container and shipped off-site.* The document does not specify where discharge from the packaged sewage plant will be diverted and which effluent quality standards will be achieved after treatment.	The scope of the assessment should include detailed identification of waste disposal options and fate and effects of any discharges.
13	**EC**	**Section 1) b. iii) Ancillary Infrastructure and Additional Details**	**Scope**	**3**		The Draft Scope outlines water utilisation at the Jaynes and Armshow South hydroelectric dam, which is expected to be 765,000 cubic meters per day.	The scope of the assessment should include provision of a water balance for withdrawals and discharges through the life of project.
14	**EC**	**Section 1) b. iv) Abandonment, Decommissioning and Reclamation**	**Scope**	**4**		The Proponent has proposed that at closure, all waste materials will be disposed of either on-site in a landfill or in a facility off-site.	The scope of the assessment should include a full inventory and characterization of waste streams and the associated management and disposal.
15	**EC**	**Section 2. Anticipated ecosystemic and socio-economic impacts of the Project**	**Scope**	**4-6**		The Draft Scope outlines the potential impacts on the environment and socio-economic features, caused by the project components, activities, and undertakings. The environmental and socio-economic features are listed without specifying which impacts will occur at various phases within the project lifecycle.	The scope should specify that an overview be provided detailing when each of the listed potential impacts will occur and how they will change spatially and temporally throughout the project lifecycle.
16	**EC**	**Section 3. Anticipated Effects of the Environment on the Project**	**Scope**	**6**		The Draft Scope outlines the potential anticipated effects of the Arctic environment on the project. Further details may be helpful to the Proponent in expanding the scope.	Suggested text could include: specify various factors for climate and meteorology, and what they may affect. Suggested text: *3, a. Climate and meteorology, including:* *i) Climate example A: has potential to affect project component _____ during phase(s) _____.* *ii) Meteorology example A: has potential to affect project component _____ during phase(s) _____.* *iii) .....*
17	**EC**	**Section 4 f. Mitigation measures**	**Scope**	**6**		The Draft Scope outlines steps which will be taken, including contingency plans, to avoid and mitigate adverse impacts. Within Section 4f), there should be further direction to the Proponent on including monitoring and adaptive management in connection with mitigation measures.	The scope of the assessment should request that the proponent present how mitigation and adaptive management will be used, including a description of monitoring and thresholds for action.

18	**EC**	**Section 1) b. iv) Abandonment, Decommissioning and Reclamation**	**Scope**	**3**		The Draft Scope reclamation section should include management of exposed sediments following dewatering of the impoundment area.	Suggested text: *1, b) iv.)* ▪ *Management of exposed sediments following dewatering of the impoundment area*
19	**EC**	**Section 8.1.8, Sediment Quality**	**EIS Guidelines**	**46**		Due to the changing ability of sediments to bind and release contaminants under changing conditions, sediments have the potential to act as both sink and source for contaminants. This, in turn, has a direct affect on the aquatic environment. Comparable to the baseline information requirements for groundwater and surface water quality, a discussion of chemical characteristics of sediment should include: - baseline levels of contaminants - seasonal variation in sediment quality - comparison to relevant sediment standards / guidelines	Suggested text: 8.1.8 Sediment Quality 8.1.8.1 Baseline Information b) Discussion of chemical characteristics should include baseline levels of contaminants and should be compared to relevant sediment standards / guidelines with identification of those which are naturally elevated. c) Provide discussion on seasonal variations in sediment quality.
20	**EC**	**Section 8.1.9.2 (Aquatic Environment) Impact Assessment**	**EIS Guidelines**	**48**		Bullet i) states: This analysis should: Discuss management measures to minimize/mitigate disturbances to fish populations and describe measures to reduce the potential for establishment of invasive species in the area; EC suggests expanding the description of invasive species to include all aquatic flora or fauna	Suggested text: 8.1.9 Aquatic Environment 8.1.9.2 Impact Assessment i) This analysis should: Discuss management measures to minimize/mitigate disturbances to fish populations and describe measures to reduce the potential for establishment of any invasive aquatic species in the area;
21	**EC**	**Section 9.3, Monitoring and Mitigation Plans**	**EIS Guidelines**			Bullet i) states: Each of the monitoring and mitigation plans shall: i) Determine procedures/mechanisms to assess the effectiveness of monitoring programs, mitigation measures and adaptive management programs for areas disturbed by the Project; EC suggests adding an on-going requirement to actively seek to improve the effectiveness of the monitoring programs, mitigation measures and adaptive management programs over the life of the project.	Suggested text: 9.3 Monitoring and Mitigation Plans Each of the monitoring and mitigation plans shall: i) Determine procedures/mechanisms to assess the effectiveness of monitoring programs, mitigation measures and adaptive management programs for areas disturbed by the Project, and include a mechanism to update and improve these programs;
22	**EC**	**9.4.9 Explosives Management Plan**	**EIS Guidelines**			The explosives management plan section covers issues associated with blasting products, and Subsection d) states: Discuss best practices to minimize usage and loss rate; Projections of estimated nitrogen loss rates should be provided, including total loadings to the surface waters.	d) Discuss best practices to minimize usage and loss rate, including predicted loss rates and nitrogen loadings to the receiving environment;
23	**EC-CWS**	**Revised Draft Scope**	**Scope**	**3**	**1 b. iii)**	Although 'transportation routes' are included in the Draft EIS Guidelines, they should also be included as Project Components in the Scope of the Project as the routes are part of the Project Description and barging/sealifts would occur through the life of the +40 year project (i.e. it is a part of the spatial scale for assessing impacts to VECs).	The following bullet should be added: • Water access/transportation routes for sealift of construction and resupply/maintenance materials and equipment from Iqaluit to the sites, and the backhaul of waste from sites to Iqaluit.

24	**EC-CWS**	**Draft Guidelines**	**EIS Guidelines**	**53**	**8.1.12.2 Birds and Bird Habitat Impact Assessment**	Additional potential impacts to migratory birds should be included in this section.	The following bullets should be added: m) Determine potential attraction of birds to Project facilities and infrastructure for roosting and nesting sites.
25	**EC-CWS**	**Draft Guidelines**	**EIS Guidelines**	**21** **24**	**6.5.1 General Project Description** **6.5.3 Operation and Maintenance**	Water access/transportation routes are only listed under section 6.5.2 Construction but barging/sealift resupply will occur throughout the life of the project and should be listed as a project component.	The following bullet should be added: 6.5.1 d) iii. Permanent and temporary access roads and water access/transportation routes; 6.5.3 g) *Access/Transportation Infrastructure:* i. Describe all land, air and water access/transportation routes, including routes and frequency of use;
26	**NRCan**					NRCan has reviewed the sections of Qulliq Energy Corporation's Iqaluit Hydroelectric Project Revised Draft Scope and Draft EIS Guidelines relevant to its areas of expertise and has no comments at this time	
27	**TC**	**8**	**Scope**	**11**		Acts should all be italicized, added "2001" to *Canada Shipping Act* and *Transportation of Dangerous Good Act* needs to be added.	Approval(s) under the *Navigable Waters Protection Act*; Compliance with the *Arctic Waters Pollution Prevention Act*, *Canada Shipping Act, 2001*, *Transportation of Dangerous Goods Act*, and their associated regulations.
28	**TC**	**Table of contents**	**EIS Guidelines**	**i**	**-**	It seems redundant to list the table of contents in the table of contents on the same page	Delete table of contents entry from the table of contents
29	**TC**	**5.6.2 Alternative Means of Carrying out the Project**	**EIS Guidelines**	**15**	**1**	In terms of siting and design options for the dam, there would presumably be some discussion as to whether there are alternate locations the dam could be installed. As well, however, there should be some discussion as to why the Jaynes Inlet Dam would be built first when the Armshow South Dam would be approximately 40km closer to the end-users in Iqaluit, possibly resulting in a smaller impact area over the projects initial duration. It should be clarified in the guidelines that options for the dam siting should include location and time parameters for the two proposed dams.	The EIS shall present alternatives for all Project components, with a focus on the following: a) Siting and design options for the following components of the hydroelectric facility, including: i. Intake; ii. The Dams (and the order in which they are built);
30	**TC**	**6.1 Project Design**	**EIS Guidelines**	**17**	**3**	This single-sentence paragraph is a run-on sentence, recommend revision to ensure clarity.	In addition, the Proponent should provide a comparison of development and operation scenarios of this project with that of a similar project in a non-northern climate regime in Canada. This would emphasize differences in design, construction and operation in the northern environment.
31	**TC**	**6.1 Project Design**	**EIS Guidelines**	**17**	**1.e)**	Dams should be assessed for hazards so appropriate measures can be taken to warn and protect the public from hazards. Suggest listing public safety as part of 1.e).	Design of Project to ensure public safety and eliminate/reduce the potential impacts to workers and the public under both normal operations and potential accident and malfunction situations;

32	**TC**	**6.5.1 General Project Description**	**EIS Guidelines**	**20**	**1.c)**	It would be best if the general description also provide a drawing or map showing any areas that might experience dewatering due to dam operations.	c) The reservoirs and their management, including areas that will be dewatered as part of operations;
33	**TC**	**6.5.2 Construction**	**EIS Guidelines**	**21**	**c),i)**	Typo, missing "L" in land and proponent should confirm that bathymetric information is available.	Describe all land, air and water access/transportation routes and confirm that adequate bathymetric information is available for the route that will be utilized by barges and vessels;
34	**TC**	**6.5.2 Construction**	**EIS Guidelines**	**22**	**e),ii)**	Should also discuss transmission line water crossings.	Describe line type, length, routing, water crossings, and the interconnection points of the transmission lines;
35	**TC**	**6.5.2 Construction**	**EIS Guidelines**	**23**	**g),ix)**	Clarify bullet; as meaning could otherwise be misinterpreted .	Provide details on the construction methodology, schedule and locations of any airstrips ~~(if applicable).~~
36	**TC**	**8.1.6.2 Impact Assessment**	**EIS Guidelines**	**44**	**f)**	Bullet should be inclusive of water bodies, not just watercourses.	Assess the navigability and safety of ~~the watercourses~~ water bodies related to all Project components and activities during all phases;
37	**TC**	**8.1.7.1 Baseline Information**	**EIS Guidelines**	**45**	**d)**	Baseline information about navigation should also be collected.	Discuss the importance of the waters in the LSA with regards to local harvesting activities and boating/navigation by surrounding communities;
38	**TC**	**8.2.11 Human Health and Safety 8.2.11.2 Impact Assessment**	**EIS Guidelines**	**62**	**1**	For a dam project, consideration should also be given to safety regarding sudden water flows and changes in water levels associated with dam operations.	f) Discuss impacts to human safety that may be brought about by changes in water flows and levels throughout dam construction and operations.
39	**TC**	**Appendix B-1, 8) *The interests in lands, waters and other resources which the Proponent has secured or seeks to secure***	**EIS Guidelines**			Acts should all be italicized, added "2001" to *Canada Shipping Act* and *Transportation of Dangerous Good Act* needs to be added.	Approval(s) under the *Navigable Waters Protection Act*; Compliance with the *Arctic Waters Pollution Prevention Act*, *Canada Shipping Act, 2001*, *Transportation of Dangerous Goods Act*, and their associated regulations.

Contact list from Federal Departments for Qulliq Energy Corporation's "Iqaluit Hydroelectric" Project Proposal

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