ANNEX VI

CONNECTION LINE SUMMARY

Distribution Line Summary for The Chute Hydroelectric Project (Ivanhoe River)

A Summary Report for:

Xeneca Power Development Inc.

Original Report - based on analysis up to March 3. 2011
Updated Report (Rev 1) - based on further anaysis and revisions up to May 30, 2011

June 21, 2011

KBM RESOURCES GROUP

349 Mooney Avenue
Thunder Bay, Ontario
P7B 5L5

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Route Investigation, Analysis and Verification:

KBM Resources Group was retained by Xeneca Power Development Inc. to undertake a route investigation of proposed distribution lines routes for 18 proposed hydroelectric projects. After initial routing, a more advanced analysis was completed including digital aerial photography and a ground truthing exercise.

The 18 proposed Xeneca projects have been awarded conditional approval by the Ontario Power Authority under the Feed in Tariff (FIT) program. For each project, the site of the generator, point of common coupling (PCC) and point of connection (PC) are identified in the conditionally approved FIT application. Based on these approved points of connection, this exercise was undertaken to determine potential alternatives for distribution line routes for each project.

KBM was provided with preliminary distribution line routings developed by Xeneca staff and mapped by Natural Resource Solutions Inc. These preliminary routes were created, based on data found on publicly available mapping websites such as Google maps, Google Earth and Land Information Ontario (LIO) data sets (water, roads, streams, etc). Detailed information about values and land tenure affected by the proposed distribution line was not available during this first phase of the planning process.

KBM extended the scope of this review to further optimize the routes by maximizing the use of existing resources (roads), minimizing the number of water crossings, and avoiding wetlands where possible. Future studies will include a Rapid Assessment Technique to determine if adjacent wetlands are likely to be scored as a Provincially Significant Wetland (PSW) and an Ecological Land Classification using the MNR Crosswalk Exercise (where ecosite information is available) to identify potentially significant wildlife habitat along line and road corridors.

In addition, a leaf-off aerial photography program was undertaken for all routes (20 cm resolution (ground sample distance) digital true color RGB ortho-photography) to aid in habitat characterization and the identification of important environmental values.

Ground truthing of the route alternatives is underway for segments running along existing roads. The remaining segments will be ground truthed after the routes are finalized through the Environmental Assessment (EA) process and potentially significant wildlife habitat has been identified (using Ecological Land Classification data where available).

All remaining assessment activities will be conducted following the completion of the EA (2011 and early 2012), prior to the construction of the distribution lines, which is expected to commence in the winter of 2013.

A draft report summarizing proposed distribution lines was completed by KBM on March 3rd, 2011. This report was distributed by Xeneca/KBM to all of the involved government agencies with the primary purpose of identifying and quantifying the proposed distribution lines and soliciting feedback to determine if sensitive values were missed during the preliminary analysis. Many of the proposed distribution lines described in the draft report have undergone changes primarily to mitigate impacts on identified values, wetlands, water crossings and patent lands.

This revised report describes the refined distribution line route for the Chute as a project-specific report.

Methodology:

Draft Report (March 3rd):

KBM began by assembling a database of pertinent values information and land tenure designations for the proposed distribution lines routes. The proposed line locations were then overlain with assembled values layers and a summary of the potentially impacted values was compiled and summarized. Data layers used for this exercise included:

- Land Information Ontario dataset
- NRCan Topographic data
- 2008 Forest Resource Inventory data
- Medium resolution SPOT panchromatic orthoimagery from Natural Resources Canada
- NRVIS Data Layers (circa Feb 2011)

A linear breakdown of proposed lines following existing roads, new access roads and new line corridors was also compiled and summarized. In order to minimize potential impacts to the environment, minor amendments were made, where possible, to the proposed routes by aligning them with existing roads and by avoiding water crossings and other sensitive areas. During the draft version of this exercise KBM did not have access to the most current forestry road layers.

Where appropriate, additional line routes were proposed. These were presented and explained in the draft report as alternatives with a primary goal of following existing roads and reducing impact to sensitive areas and identified values.

It should be noted that the desktop review was based solely on the information available to KBM. There is the potential that other unidentified values may be impacted by the proposed distribution lines such as unmapped water crossings or sensitive habitat areas. Further review of the proposed distribution line routes may be needed as per the requirement of the Class EA for each hydroelectric project.

Following the completion of the desktop review, further activities were planned to aid in the refinement of the proposed distribution line route:

- Digital aerial photography of the revised distribution line and road access routes.
- Ground truthing of the revised distribution line and road access routes
- Consultation and information sharing with each of the forest management companies which hold crown Sustainable Forest Licenses (SFL) in the areas that each project located.

Further review of the confirmed distribution line route will be undertaken as part of the regulatory permitting requirements for each project.

Revised Report (June 21st):

Following the completion of the March 3rd draft report, KBM undertook extensive consultation with the SFL holders linked to the 18 projects. The consultation was constructive and most of the SFL holders provided GIS datasets including all road networks, planned harvest block locations and aggregate pit locations;. Many of the managing foresters were able to provide location specific information based on their extensive knowledge of the land base. This information was used to complete revisions to the distribution line routes. The distribution line maps prepared for the revised report will include any roads layers provided by the SFL holders.

The line routes presented in the draft report were reviewed using all available information and revised where appropriate in an effort to:

- reduce environmental impact (i.e. streams & wetland crossings);
- minimize landscape footprint and fragmentation;
- dovetail with existing road corridors; and
- reduce total line length.

The updated distribution line routes are described in this revised report (June 21st) and, where possible, compared to the linear breakdown of the lines described in the draft report.

Ground Truthing:

Further operational ground truthing of the proposed lines and access routes is planned following the processing of all of the digital aerial photography captured in early June, 2011.

Rapid Assessment (RAT) of potential PSWs:*

Where line or new road corridors could impact adjacent wetlands, a Rapid Assessment Technique will be used to determine if the wetland is likely to be scored as a Provincially Significant Wetland (PSW).

Northern Bioscience will complete this modeling exercise based on methods outlined in NEST Technical Report TR-025, Wetlands Evaluation in Ontario: Models for Predicting Wetland Score (OMNR, 1995). Where potential PSWs are identified in proximity to the route, the corridor will be realigned with sufficient setback to avoid impacts to these features.

Ecological Land Classification using Ecosite Crosswalk:

Where ecosite information is available, an Ecological Land Classification mapping exercise will be used to assist in identifying potentially significant wildlife habitat along line and road corridors.

Xeneca consultants will use high resolution aerial photography and Forest Resource Inventory (FRI) data to identify potentially significant wildlife habitat along the distribution line and road corridors. Where ecosite information is available or can be derived, it will be used with the Northeastern Ontario Ecosite Crosswalk Exercise (MNR 2011) to identify the Ecological Land

Classification (ECL) of habitat along the corridors. ECL information can then be used to assist in identifying potentially significant wildlife habitat using methods prescribed in the Significant Wildlife Habitat Technical Guide (OMNR, 2000).

Field Verification of Potentially Significant Widlife Habitat (Endangered Species Act):

20 cm resolution digital true color ortho-photography and Ecological Land Classification data for the distribution line and road corridors will be used to identify potentially significant wildlife habitat along all potential corridors. Field investigations will be scheduled for the summer and fall of 2011 and spring of 2012, where needed.

Interim Report For Access Routes:

In general, the Xeneca waterpower sites will be accessed using existing forestry access roads, with some sections of new road required between the existing road and the generating station (GS) locations. Road maintenance and potential upgrades to existing roads and water crossings will be discussed with the SFL holder for the project area.

Since transmission line and access road planning tasks are on different schedules (line truthing precedes access road truthing), much of the detailed information for access planning won't be available until the high resolution photo mosaics have been prepared and subsequent site visits have been completed in June, 2011. Further discussions with the SFL holders will provide more accurate information about existing road conditions and required upgrades. Final route selection, existing road conditions, and details about the number and characteristics of water crossings should be available in early July, 2011. Responsibility for road and water crossing upgrades will be confirmed during further discussion with the forestry companies later in 2011.

Desktop Exercise Report For: The Chute Project #2124750

Xeneca is proposing to build two hydroelectric generating stations on the Ivanhoe River with a combined installed capacity of 8.7 MW. One station would be located at Third Falls (39 km NE of Foleyet) and the other station would be located 37 km upstream at the Chute (16 km N of Foleyet).

Line Summary:

Two connection options are proposed for The Chute. Given the existing access between the Third Falls and The Chute sites, a direct connection between the two projects would reduce line redundancy, cost and environmental impact. A detailed description of this line option (Option 2) is provided below, but will only be considered for construction if the Third Falls EA is approved.

The first alternative route (Option 1) travels south along an existing well used forestry road before connecting to Hwy 101 and then travels SE, then NE to the PC. The total line distance is 39.79 km, of which 98.5% is along pre-existing roads. This line would require 18 water

crossings at pre-existing road corridor water crossings and would skirt five wetlands. The majority of the line route is located on crown land with only 148m crossing patent land. According to value mapping layers, one common raven nesting site was noted in proximity (263m) of the route and three raptor (species unknown) nesting sites were noted in the general vicinity (900 m, 1.7km and 2km respectively) of the route.

The second alternative (Option 2) route extends north from the GS location along on an existing well used forestry road and then southeast following Nova Road. The total Line distance is 63 km with 43.9 km along existing roads and 19.1 km along new corridor. This route requires a 518 m section through the Groundhog River Waterway Provincial Park and a water crossing on the Groundhog River. A total of 24 water crossings occur along the proposed line route, with 12 of these along new corridor sections. The remaining 12 water crossings are associated with existing road corridor water crossings. Three wetlands are crossed and one is skirted.

Zones of potential for cultural heritage were noted at the generator site based on available FMP operations maps. Given that the model used in the determination of these areas generally buffers most major rivers, further consultation with the Ontario Ministry of Tourism and Culture and/or a licensed archaeologist will be required to determine necessary steps for project progression.

Roads Summary:

The Chute project will be accessed using a 20 km portion of existing Eacom forest access road, with a 600 m section of new road (existing trail upgrade) required between the Eacom road and the GS location. Agreements for road maintenance and potential upgrades to existing roads and water crossings will be discussed with Eacom.

Appendix

Revised Line Route Summary Statistics for the Ivanhoe River Sites:

			Summary Statistics						
			Frequency	Length (m)	Water Crossing			Wetlands	
Site	OwnerType	RoadType			Highway	Existing	New	Edge	Crossing
Ivanhoe (The Chute) Option 1	Crown	Existing Road	14	39643	10	8	0	5	0
Ivanhoe (The Chute) Option 1	Crown	New Corridor	2	590	0	0	0	0	0
Ivanhoe (The Chute) Option 1	Private	Existing Road	1	148	0	0	0	0	0
Ivanhoe (The Chute) Option 2	Crown	Existing Road	5	43,947	0	12	1	1	1
Ivanhoe (The Chute) Option 2	Crown	New Corridor	2	18570	0	0	9	0	0
Ivanhoe (The Chute) Option 2	Park	New Corridor	3	518	0		2		1

Revised maps for the Ivanhoe sites including the Chute are located at:
http://www.kbmrg.com/upload/documents/lowres_atlas_May_30-_11_tile-set-b-(ivanhoe-river).pdf