

4. SCOPE OF ASSESSMENT AND STUDY AREAS

4.1 SCOPE OF ASSESSMENT

The consultation program undertaken for the MGEC was used to identify First Nations, environmental, social, economic, heritage and health issues of concern and to provide a basis for establishing the scope of the assessment. Pre-application consultation activities and the issues that were identified are discussed in detail in Section 2.

One of the key means of identifying issues of concern to First Nations and government was through the specific questions and comments raised on the Terms of Reference during its development, in meetings or through other forms of direct contact. MGEC modified the draft terms of reference to address the issues raised.

Input from the public and stakeholder groups was solicited using advertisements and by making presentations to local groups in Mackenzie. An advertisement providing overview information on the project and stating that the Draft Terms of Reference for the MGEC was available for review and comment was placed in the Mackenzie Times newspaper on June 13, 2006. The BC EAO also placed a copy of the advertisement on the EAO website. The EAO did not receive any public comments on the Draft Terms of Reference.

The Approved Application Terms of Reference (ATOR), which is included as an addendum to this document, incorporates the agreed scope of environmental and socioeconomic issues to be addressed in the Application. The ATOR responds to the comments received from interested parties in regard to the scope of the assessment that should be conducted for the MGEC.

During the pre-Application period, a number of issues were raised by First Nations (Section 2.2.1.3) and government agencies (Section 2.3.1.3). The draft Terms of Reference for the MGEC was amended accordingly to ensure that all aspects of the project and potential effects were adequately assessed. The issues raised during the consultation process are summarized in Table 4.1-1 and classified as a direct effect, an indirect effect and/or a cumulative effect of the MGEC. Direct effects are considered to result from the activities of MGELP during construction, operation, and decommissioning of the MGEC. Indirect effects result from the activities of other parties not controlled by MGELP, but that are a consequence of development of MGEC. Cumulative effects are as defined in Section 8.

Table 4.1-1 lists the key items that were raised in discussions during the pre-Application phase of consultation, but does not identify every question asked and answered, but rather lists items identified as being of particular interest or concern.

Table 4.1-1 List of Issues Identified During Pre-Application Consultation Program

Issue	Identified by		Likely Type of Effect		
	Government	First Nations	Direct	Indirect	Cumulative
Project Design Issues:					
Project design	✓		-	-	-
Site selection	✓		-	-	-
Air Quality Issues:					
Emission control technologies	✓		✓		
Modelling criteria/details for air quality assessment	✓		✓	✓	✓
Air Quality	✓	✓	✓	✓	✓
Surface Water Quality Issues:					
Sanitary sewer and effluent	✓		✓		✓
Water quality monitoring	✓		✓		
Groundwater Quality Issues:					
Wood residue handling and storage	✓		✓	✓	
Ash handling	✓		✓		
Water quality monitoring	✓		✓		
Water Supply Issues:					
Water usage	✓		✓		✓
Waste Management Issues:					
Waste management	✓		✓		
Ash handling	✓		✓		
Biophysical Issues					
Effects of traffic on wildlife from collisions		✓		✓	
Effects on wildlife and migratory birds		✓	✓		✓
Environmental Management Issues:					
Environmental management plans	✓		✓	✓	
Socio-Economic Issues:					
Employee housing	✓		✓	✓	
Economic impact	✓		✓	✓	
Increased truck traffic		✓	✓	✓	
Operations employment		✓	✓		
Economic opportunities		✓	✓	✓	
First Nations Specific Issues:					
Treaty 8 Bands have the right to use all Treaty 8 lands		✓	✓		
Protection for sensitive vegetation identified in TLUS		✓	✓		

Valued ecosystem components (VEC) were selected for use in the baseline studies and the assessment of the potential effects of the MGEC. The process used to select the VECs for each issue is discussed in Section 5.1.

4.2 STUDY AREAS

Study Areas were selected to conduct baseline studies and to assess the potential effects of the MGEC. Study area boundaries were developed in consultation with government agencies and First Nations and with consideration of the technical factors that determine the size of the area likely to be affected by a certain type of disturbance.

The geographic boundaries of the study areas used to assess the potential effects of the MGEC are listed in Table 4.2-1, as included in Section 4.2 of the Approved Application Terms of Reference, except for two additions: 1) greenhouse gas emissions; and 2) water supply. The study area selected for assessing the effects of greenhouse gas emissions from the MGEC was the province of BC. This study area was chosen because data on total provincial green house gas emissions are available and it reflects the most relevant jurisdiction. The study area for water supply reflects the intent of MGEC to obtain water from the Pope & Talbot pulp mill under its existing water license.

The Project Disturbed Area defined in the Approved Application Terms of Reference includes the area within the boundaries of the property that will be purchased for MGEC and on which the power plant and ash landfill will be located, as well as the right-of-ways for offsite pipelines and power lines. Except for the short above-ground steam and condensate pipelines between the MGEC and the Pope & Talbot pulp mill and, potentially, the Canfor sawmill, the Project Disturbed Area is the same as the proposed MGEC site.

Table 4.2-1 Study Area Geographic Boundaries

VEC/Issue	Study Area	Boundary Maps
Air quality	<ul style="list-style-type: none"> • 25 km radius from the MGEC plant stack for modeling of meteorology; • 10 km radius from the MGEC plant stack for modeling of effects of emissions on air quality. 	Figure D-13 in Appendix D. Figures 5.4-4 or 5.4-15 in Section 5.
Aquatic life	Project Disturbed Area (MGEC site) plus the marsh/wetland located within 200 metres to the southeast of the Project Disturbed Area.	Figure F-2 in Appendix F.
Archaeology, culture and heritage	Project Disturbed Area (MGEC site).	Figure 5.12-1 in Section 5.
First Nations traditional use and traditional knowledge studies	Project Disturbed Area (MGEC site) plus a 250 meter wide buffer area.	Figure 4 in Appendix G.
Geophysical (physiography, topography, geology, geotechnical conditions, soils and stability)	Project Disturbed Area (MGEC site).	Figures 5.3-1 and 5.3-2 in Section 5. Figure C-2 in Appendix C.
Greenhouse gases	Province of BC.	Not applicable
Noise	2 km radius from the MGEC site.	Figures 5.6-1 and 5.6-7 in Section 5.
Socio-economic	District of Mackenzie and, for First Nations specific impacts, First Nations Communities.	Public: Figure 7.2-1 in Section 7. First Nations: Figure 6.1-1 in Section 6.
Vegetation	Project Disturbed Area (MGEC site).	Figure F-1 in Appendix F
Visibility and fogging effects from cooling tower	3 km radius from MGEC cooling tower.	Figure 5.4-21 in Section 5.
Water quality: <ul style="list-style-type: none"> • Groundwater 	Specific to areas receiving discharge, which are: <ul style="list-style-type: none"> • Unconfined groundwater beneath the MGEC site and the Pope & Talbot pulp mill land. 	Figures 5.7-10 and 5.7-13 in Section 5.
<ul style="list-style-type: none"> • Process effluent 	<ul style="list-style-type: none"> • Williston Reservoir. 	Figure 5.7-1 in Section 5.
<ul style="list-style-type: none"> • Storm water runoff 	<ul style="list-style-type: none"> • Wetland south of the MGEC site. 	Figures 5.7-3 and 5.7-4 in Section 5.
Water Supply	Williston Reservoir intake area.	Figures 5.14-1 and 5.7-1 in Section 5.
Wildlife	Project Disturbed Area (MGEC site) plus the marsh/wetland located within 200 metres to the southeast of the Project Disturbed Area.	Figure F-2 in Appendix F.
Wood residue truck traffic	Dominant truck routes from planned wood residue supply areas (Bear Lake, Chetwynd and Fort St. James) to MGEC.	Figure 5.11-1 in Section 5.

The following sections give additional technical information supporting the selection of the study areas for air quality, aquatic life, vegetation, and wildlife.

4.2.1 Air Quality

Local meteorology strongly affects the dispersion of pollutants from emission sources within an airshed. The study area chosen for assessing the potential impact of project emissions on air quality was determined in consultation with the BC MOE, following consideration of: local meteorology, existing emission sources, local air quality issues and regional topography. The study area selected for the meteorology used for the air quality assessment consists of a square area measuring about 50 km per side and centred on the MGEC site.

Current data on local topography and meteorology were used in a computerized dispersion model to simulate air quality effects extending outward from the MGEC site for a radius of 10 km. This study area reaches to Gantahaz Lake to the north and beyond the boundaries of the District of Mackenzie in other directions. Maximum predicted ground-level pollutant concentrations along the edge of the study area will be higher than those located further away from the emission sources.

The boundaries of the study areas for meteorology and prediction of the effects of the MGEC on air quality are illustrated in Figure D-13 in Appendix D. The study area for prediction of the effects of the MGEC on air quality is used as the primary base map for contour plots of predicted pollutant concentrations presented in Section 5.4 (i.e., Figure 5.4-4 and Figures 5.4-6 to 5.4-14 for the baseline and Figures 5.4-15 to 5.4-18 for the project effects).

4.2.2 Aquatic Life, Vegetation and Wildlife

The MGEC site comprises an area of land measuring approximately 43 ha that can be divided into two distinct areas. One area is rectangular in shape, measuring approximately 420 m by 280 m, that extends from the existing Pope & Talbot pulp mill parking lot to the first set of CN railway tracks to the northeast. The second area is north of the CN railway tracks and bounded on the east and south by the second set of railway tracks and on the northwest by the BC Hydro power line right of way. This area measures approximately 480 m by 650 m in size.

Waterbodies within the MGEC site are limited to a small wetted depression along the central eastern flank of the site. Ecosystems within the MGEC site outside of disturbed areas are predominantly mixed ecosystems comprised of lodgepole pine, black spruce and balsam poplar over compact till soils. Small areas of lodgepole pine exist onsite.

The study area for vegetation was the MGEC site, which was selected because of the disturbance to vegetation that will occur during construction of the project. This study area is mapped in Figure F-1 in Appendix F. Areas outside the MGEC will not be physically disturbed.

The study area for aquatic life and wildlife included the MGEC site plus the wetland within 200 m to the southeast of the MGEC site boundary, which is mapped in Figure F-2 in Appendix F. The wetland was included in the study area for aquatic life and wildlife because of initial concern regarding the potential for impacts from site water runoff and noise. The larger study area is referred to as the Aquatic and Wildlife Study Area, or the Overall Study Area in the discussion of biophysical impacts.

4.3 TEMPORAL BOUNDARIES

The time frames considered in the assessments of the effects of the MGEC included construction, operation, and decommissioning (dismantling and abandonment) within the specified geographic Study Area boundaries. Assessments considered the impacts during construction and operation in detail.