

# 1.0 INTRODUCTION

## 1.1 PURPOSE OF THE DOCUMENT

The purpose of this Keeyask Transmission Environmental Assessment Report is to satisfy Manitoba Hydro's Site Selection and Environmental Assessment (SSEA) process in order to secure a provincial environmental license for transmission lines and stations of 115 kV or greater and to present information required to meet the licensing requirements of *The (Manitoba) Environment Act*. The process and results of the Environmental Assessment (EA) undertaken for the Project are outlined in this document. The Keeyask Transmission Project (the Project) is being designed for construction and operation at a voltage capacity of 138 kV. This Project therefore meets the licensing requirements (Class II License) of *The (Manitoba) Environment Act*.

## 1.2 OVERVIEW

Manitoba Hydro is the Proponent on the proposed Keeyask Transmission Project. The proposed Keeyask Transmission Project includes development of the following infrastructure (see Chapter 2):

- A Construction Power Transmission Line that would convey power for construction of the Keeyask Generating Station.
- Construction Power Station.
- Four Unit Transmission Lines extending from the Keeyask Generating Station to the switching station.
- The Keeyask Switching Station.
- Three Generation Outlet Transmission (GOT) lines to transfer power generated by the Keeyask Generating Station to the existing Radisson Converter Station.
- Upgrades to the Radisson Converter Station.

The Study Area for the Keeyask Transmission Project (illustrated in Map 1-1 and Appendix A) is located in northern Manitoba, extending from the Radisson Converter Station (about 6 km northeast of the town of Gillam), along the south shore of Stephens Lake, to the proposed Keeyask Generating Station. From this juncture, the Study Area extends north across the Nelson River approximately 4 km, and southward to a point about 3 km south of Manitoba

Hydro's KN36 138 kV transmission line. The southern boundary of the Study Area, which traverses parallel to KN36, extends east back to the Radisson Converter Station.

The Project is located in the Split Lake Resource Management Area about 300 km northeast of Thompson (Manitoba), and includes the Local Government District of Gillam (Map 1-1). Final right-of-way alignments and site locations are anticipated to occur on Crown land.

The right-of-way width for the Construction Power Transmission Line will be 60 m. A 200-m width will be required for the three GOT lines to traverse between the Keeyask Switching Station and Radisson Converter Station. The proposed Keeyask Switching Station will require 52 ha of land, with an additional 35 ha reserved for future developments.

Once the Keeyask Generating Station is commissioned, a portion of the proposed Construction Power Station and the 138 kV transmission line from KN36 will remain in place to provide emergency power for black start (see Glossary in Chapter 11 for definition) of Keeyask Generating Station. A portion (2 ha of land) on which the Construction Power Station occurs will be decommissioned. Two overhead 12.47 kV service lines will be constructed from the proposed Keeyask Switching Station to the Keeyask Generating Station to provide operational power supply to the generating station.

It is currently anticipated that the Keeyask Transmission Project Environmental Assessment Report will be filed with regulators in October 2012. This will be followed by a regulatory-review period that is currently planned for completion by July 2013. No construction will begin until all regulatory approvals and property reservations are completed. The earliest clearing and construction would start is November 2013; the exact start date is subject to regulatory approval of the Keeyask Generation Project. The Keeyask Construction Power 138 kV Transmission Line and Station is proposed to be in service by July 2015.

Construction of the Keeyask Switching Station is expected to begin in March or April of 2017. Right-of-way clearing and facility construction for the GOT 138 kV Transmission Lines between the Switching Station and Radisson Converter Station and the four 138 kV Unit Transmission Lines to the proposed Keeyask Generating Station, is scheduled to be completed by July 2019. The Keeyask Switching Station planned in-service date is October 2019. This timing corresponds with the proposed in-service date for the proposed Keeyask Generating Station.

Before initiating any construction, including rights-of-way clearing, Manitoba Hydro will prepare an Environmental Protection Plan (EnvPP) for approval by Manitoba Conservation. The EnvPP will describe with considerable specificity how Manitoba Hydro will protect the environment during Project construction, operation and maintenance. Application of the EnvPP will assure that all personnel, from contractors to Manitoba Hydro management, are diligent in protecting the environment.

Should transmission lines or station facilities be decommissioned at some future date, Manitoba Hydro has identified environmentally acceptable means for salvaging equipment and restoring affected sites and rights-of-way.

## **1.3 MANITOBA HYDRO'S ENVIRONMENTAL POLICY AND MANAGEMENT SYSTEM**

### **1.3.1 Mission, Vision and Goals**

Manitoba Hydro is a Crown Corporation owned by the Province of Manitoba, headquartered in Winnipeg. Manitoba Hydro's mandate is to supply power adequate for the needs of the Province of Manitoba and to promote economy and efficiency in the development, generation, transmission, distribution, supply and end-use of power. Manitoba Hydro generates, transmits and distributes electrical energy throughout the Province and is a distributor of natural gas within certain Manitoba communities. The affairs of Manitoba Hydro are administered by the Manitoba Hydro-Electric Board appointed by the Lieutenant-Governor in Council. The Board reports to the Minister responsible for *The Manitoba Hydro Act* who, in turn, reports to the Manitoba Legislative Assembly.

Manitoba Hydro currently serves more than 537,000 electricity customers throughout Manitoba and provides natural gas service to over 265,000 customers in various communities. Manitoba Hydro is one of the largest integrated electricity and natural gas distribution utilities in Canada. Manitoba Hydro employs more than 6,200 people, has assets in excess of \$12.5 billion and annual revenues of more than \$1.7 billion (Manitoba Hydro 2011a). Manitoba Hydro's projects, focused primarily on the development of renewable hydroelectric power, have played a major role in the development of the provincial economy and the Province as a whole for 60 years. Since the 1950s, Manitoba Hydro has been a principal organization chosen by a succession of Provincial governments to open Manitoba's north for the benefit of all of its citizens. Manitoba Hydro and its staff are key elements in the fabric of Manitoba.

Manitoba Hydro's Corporate Vision is:

*"To be the best utility in North America with respect to safety, rates, reliability, customer satisfaction, and environmental leadership; and to always be considerate of the needs of customers, employees, and stakeholders"* (Manitoba Hydro 2011b).

### **1.3.2 Manitoba Hydro – Regulatory Approach**

Manitoba Hydro takes a proactive approach to environmental management to anticipate and prevent environmental effects of its operations. This approach is consistent with the Corporation's commitment to sustainable development and environmental stewardship.

Manitoba Hydro endeavours to integrate all relevant statutes, policies and regulations into the planning, construction and operation of its transmission facilities. Manitoba Hydro also takes a proactive approach to environmental management in a manner that anticipates and avoids or minimizes environmental effects of its operations. This approach is consistent with the Corporation's commitment to sustainable development and environmental stewardship.

### **1.3.3 Environmental Policy and Management System**

Manitoba Hydro respects the need to protect and preserve natural environments and heritage resources affected by its projects. Manitoba Hydro's Environmental Management Policy (Manitoba Hydro 2012) demonstrates Manitoba Hydro's commitment to protecting the environment by:

- Preventing or minimizing any adverse impacts, on the environment, and enhancing positive impacts.
- Meeting or surpassing regulatory, contractual and voluntary requirements.
- Considering the interests and utilizing the knowledge of our customers, employees, communities and stakeholders who may be affected by our actions.
- Reviewing our environmental objectives and targets annually to ensure improvement in our environmental performance.
- Continually improving our Environmental Management System.
- Documenting and reporting our activities and environmental performance.

In addition to the preceding practices, Manitoba Hydro's environmental management policy has been incorporated into the Project development plan. An Environmental Protection Plan (EnvPP) for the Project will be prepared prior to construction (Chapter 8, Appendix F). The use of an EnvPP is a practical and direct response to the implementation of Manitoba Hydro's commitment to responsible environmental stewardship.

Manitoba Hydro has developed and implemented an Environmental Management System and has registered the system to the ISO (International Organization for Standardization) 14001 Environmental Management System standard. The Manitoba Hydro Environmental Management System enables the identification of environmental effects, setting of goals to manage effects, implementation of plans to meet the goals, and evaluation of performance. The Environmental Management System enables Manitoba Hydro to make continual improvements to its Environmental Management System and its environmental performance. As a member of the Canadian Electricity Association, Manitoba Hydro participates in their Sustainable Electricity

Program. Under this program every member utility must implement an Environmental Management System consistent with ISO standards.

## **1.4 REGULATORY FRAMEWORK**

The central elements of the regulatory framework, which create the context for this assessment, are noted in the following subsections. The requirements associated with these statutes or regulations, as well as other applicable guidelines, are considered in this assessment. A list of other applicable acts, regulations and guidelines is presented in Appendix B (Table 1).

In broad terms, federal and provincial regulatory requirements are coordinated through a cooperative assessment approach. Manitoba's requirements for environmental licensing and review are set out in *The (Manitoba) Environment Act*, while Canada's requirements for environmental impact assessments are set out in *The Canadian Environmental Assessment Act* (CEAA).

The Keeyask Transmission Project is considered a Class 2 development under *The Environment Act*; the Minister of Manitoba Conservation and Water Stewardship is the approving authority. There are several other provincial permits and authorizations that will be required to develop the transmission lines and associated infrastructure. Manitoba Hydro will secure all applicable permits and authorizations for each stage and portion of the Project.

### **1.4.1 The (Manitoba) Environment Act**

*The (Manitoba) Environment Act* provides for the environmental assessment of projects that are likely to have significant effects on the environment. The proposed Construction Power and Generation Outlet transmission lines are 138 kV and are, as such, categorised as Class 2 Developments in the Classes of Development Regulation 164/88 of *The Environment Act*. The Project requires a licence for construction and operation. As a result, these types of developments require submission of an Environment Act Proposal Form (EAPF) and an Environmental Assessment Report to Manitoba Conservation and Water Stewardship. The submission enables public and government agencies to examine the details of the proposed Project, its anticipated effect on biophysical and socio-economic components of the environment, as well as measures that Manitoba Hydro intend to use to mitigate potential effects. This document is being submitted to Manitoba Conservation and Water Stewardship as part of Manitoba Hydro's application for licensing of the Project under *The Environment Act*.

### **1.4.2 The Canadian Environmental Assessment Act**

*The Canadian Environmental Assessment Act* establishes a federal environmental assessment process in order to achieve sustainable development by promoting economic development that conserves and enhances environmental quality. The *Act* requires an assessment of the

environmental effects of a project if federal authorities have to make a decision regarding some aspect of the project. A federal environmental assessment may be triggered or authorization pursuant to the provisions of Section 5 of the *Act*.

Manitoba Hydro will comply with federal requirements, including Department of Fisheries and Oceans Operational Guidelines, to assure that the Keeyask Transmission Project incorporates appropriate procedures to avoid negative effects on fish and fish habitat. The design of the transmission line crossings of the Nelson River will satisfy the requirements of the federal *Navigable Waters Protection Act* and not interfere with navigation. The Keeyask Transmission Project does not have any *Canadian Environmental Assessment Act* triggers. However, the Canadian Environmental Assessment Agency has scoped the transmission line into the Keeyask Generation Project as an ancillary project. Therefore this Environmental Assessment Report will form part of the submission for federal review of the Keeyask Generation Project.

## **1.5 ENVIRONMENTAL ASSESSMENT REPORT ORGANIZATION**

This Environmental Assessment Report includes an evaluation of the potential effects that may result from the Project with respect to:

- Physical Environment – Atmosphere (air, climate and climate change), land (terrain, geology, soils), and water (surface, groundwater, water quality).
- Biological Environment – Aquatic biota and habitat, terrestrial ecosystems and vegetation, terrestrial species and habitat (mammals, birds, amphibians, reptiles and invertebrates).
- Land and Resource Use – Commercial resource use (forestry, mining, agriculture, fishing), protected areas, Aboriginal land and resource use, recreation and tourism (including aesthetics), property ownership, infrastructure services and facilities.
- Socio-economic and Cultural Conditions – Population and demographics, economic base, personal, family and community life (including human health and well-being, employment and income), and heritage and cultural resources.

The Environmental Assessment Report is organized as follows:

- Chapter 2 provides a detailed description of the Project.
- Chapter 3 describes the overall environmental assessment approach including the SSEA process.

- Chapter 4 describes the existing biophysical and socio-economic environment in the Project Study Area and encompassing region.
- Chapter 5 describes the outcome of the public involvement plan.
- Chapter 6 provides the criteria for selecting the transmission line routes, an evaluation and comparison of the route alternatives, and a description of the final preferred routes.
- Chapter 7 identifies and evaluates the environmental effects of the Project, provides methods to mitigate potential and residual effects, provides an assessment of cumulative effects, and methods for sustainable development.
- Chapter 8 provides an outline of the Environmental Protection Plan.
- Chapter 9 provides the sustainability assessment.
- Chapter 10 provides the references.
- Chapter 11 provides a glossary of terms and acronyms.

Most technical disciplines (aquatic, terrestrial, socio-economic and heritage) additionally have a separate, associated technical report that provides more detail on the specific topic. The information in these reports is used to prepare the Environmental Assessment Report. Pertinent information related to the regulatory approach, project description, environmental assessment and public engagement program are contained in the appendices of this Environmental Assessment Report.





### Keeyask Transmission Project

#### Project Infrastructure

Project Study Area

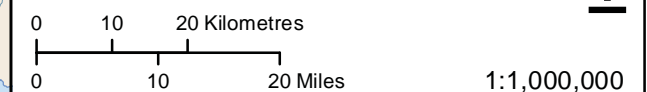
#### Infrastructure

- Converter Station (Proposed)
- Converter Station
- Generating Station (Proposed)
- Generating Station
- Bipole III (Proposed 500 kV HVDC Line)
- Bipole I and II (Existing 500 kV DC Line)
- Transmission Line

#### Landbase

- Community
- Provincial Highway
- Provincial Road
- Active Railway
- Abandoned Railway
- Resource Management Area
- First Nation
- Watercourse
- Waterbody

Coordinate System: UTM Zone 15N NAD83  
 Data Source: MBHydro, Stantec, ProvMB, NRCAN  
 Date Created: October 03, 2012



## Project Study Area in Northern Manitoba

