



Keeyask Generation Project

Environmental Impact Statement

Supporting Volume
Public Involvement



June 2012



Pimicikamak

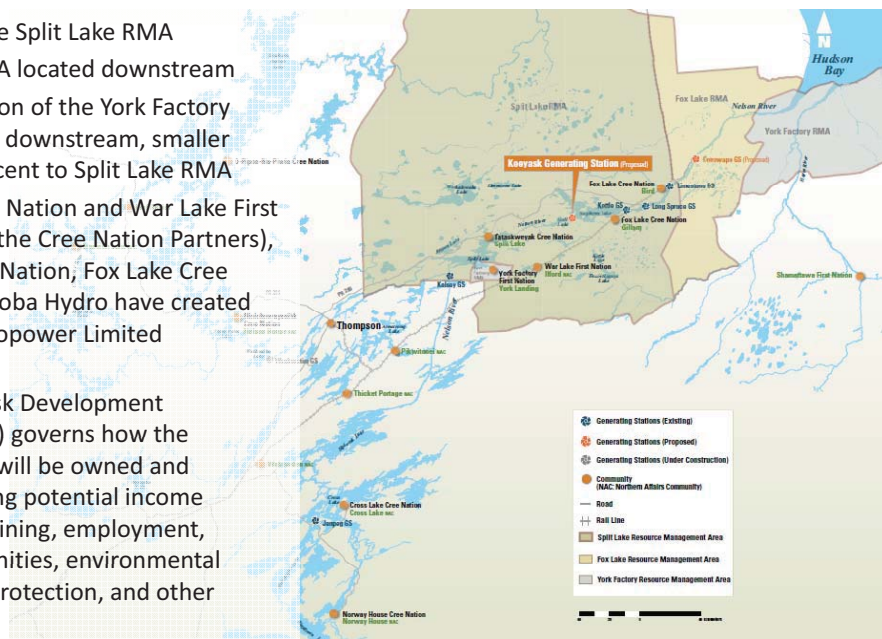
Status of Environmental Assessments for the Keeyask and Conawapa Generation Projects

January 27 2010



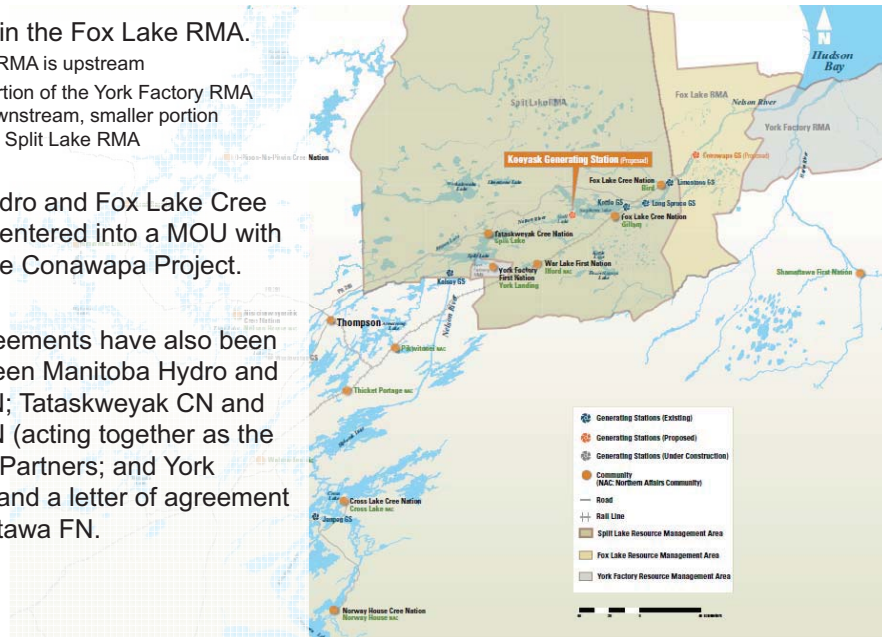
Aboriginal Partnerships

- Located within the Split Lake RMA
 - Fox Lake RMA located downstream
 - Largest portion of the York Factory RMA located downstream, smaller portion adjacent to Split Lake RMA
- Tataskweyak Cree Nation and War Lake First Nation (acting as the Cree Nation Partners), York Factory First Nation, Fox Lake Cree Nation and Manitoba Hydro have created the Keeyask Hydropower Limited Partnership.
- Their Joint Keeyask Development Agreement (JKDA) governs how the potential project will be owned and operated, including potential income opportunities, training, employment, business opportunities, environmental assessment and protection, and other related matters.



CONAWAPA Aboriginal Agreements

- Located within the Fox Lake RMA.
 - Split Lake RMA is upstream
 - Largest portion of the York Factory RMA located downstream, smaller portion adjacent to Split Lake RMA
- Manitoba Hydro and Fox Lake Cree Nation have entered into a MOU with regards to the Conawapa Project.
- Process agreements have also been signed between Manitoba Hydro and Fox Lake CN; Tataskweyak CN and War Lake FN (acting together as the Cree Nation Partners; and York Factory FN; and a letter of agreement with Shamattawa FN.

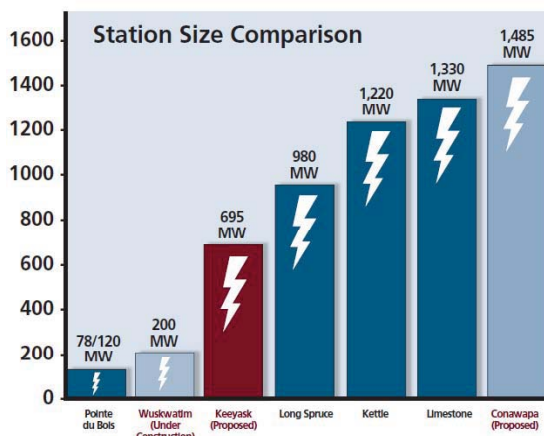


KEEYASK Keeyask Generation Project



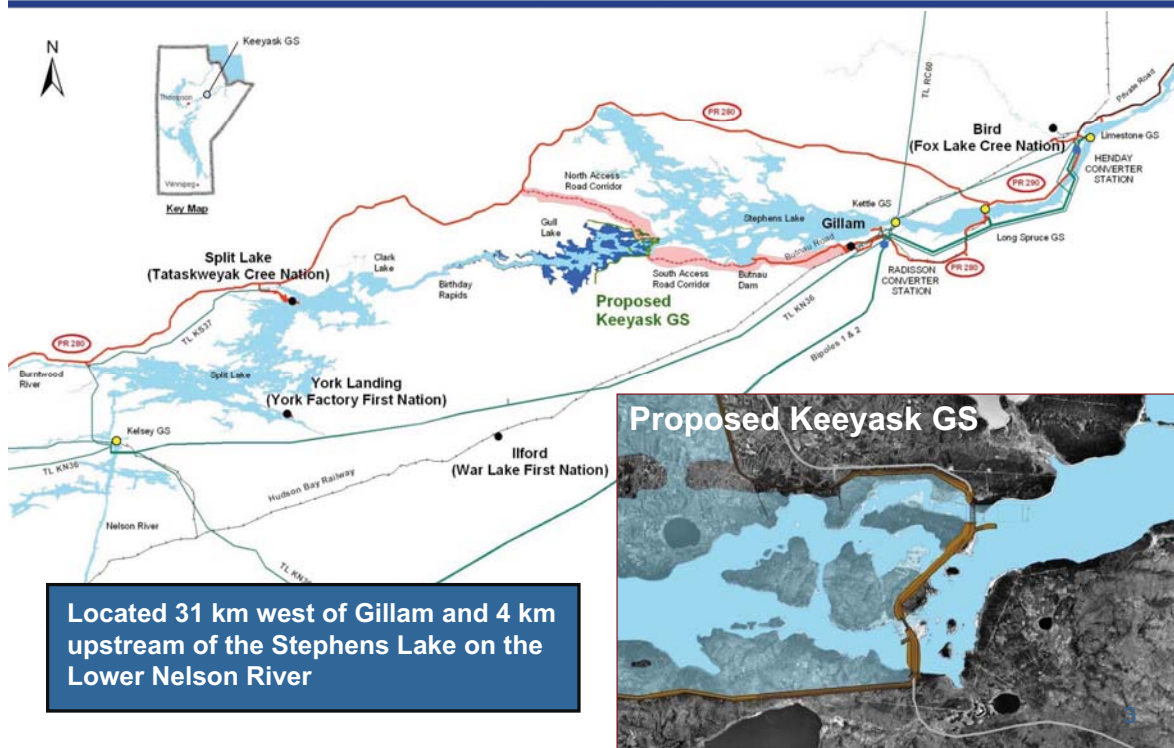
KEEYASK Project Overview

- Keeyask would be the fourth largest of Manitoba Hydro's current generating stations
- Approximate generating capacity:
 - Nominal capacity: 695 megawatts
 - Average annual energy production: 4,400 gigawatt hours
- Generator units: 7
- Flooded land area: 45 square kilometers (may gradually increase due to erosion)
- Total reservoir area of Keeyask Generating Station: 93 square kilometers
- Length of reservoir: Approximately 40 kilometers



- Construction period:
Approximately 7 to 8 years
- Construction completed: 2020

KEEYASK Project Location





PIP Process

- Round One consultation activities completed in 2008.
 - Presentation/meeting with Cross Lake NAC occurred October 8 2008
 - Presentation materials provided to Pemicikamak February 17 2009
- Round Two, focused on initial effects and potential mitigation, expected to begin in 2010.



EA Studies Overview

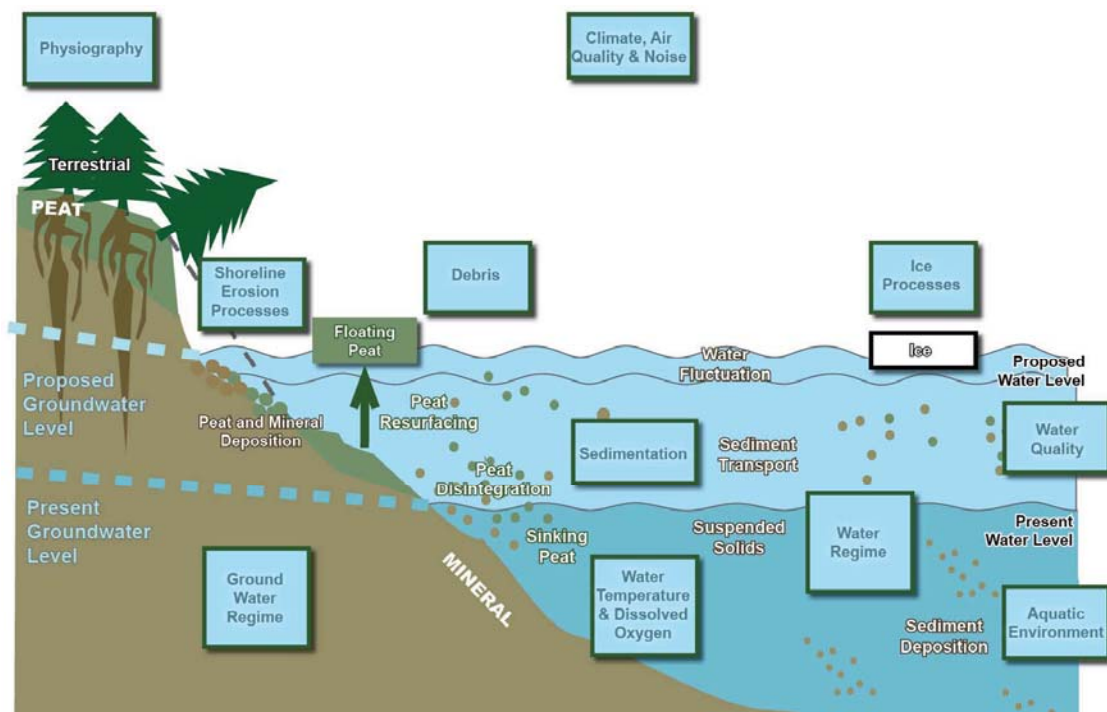
- Considerable number of EA studies have taken place
- Field workplans/status reports have been provided to KCN
- Major issues have been identified and have good technical understanding
 - Technical analyses are still ongoing
 - Limited ATK available to date, so results reflect only technical studies
- Mitigation measures have not been fully defined
- No external review with regulators or government resource managers
- No guidelines yet available
- Results are being refined

KEEYASK Physical Environment

- Physiography
- Water Regime & Ice Processes
 - Open Water
 - Winter Ice Conditions
- Shoreline Erosion Processes
 - Peatland Disintegration
 - Mineral Shoreline Erosion
- Sedimentation
 - Organic
 - Mineral
- Groundwater Regime
- Water Temperature & Dissolved Oxygen
- Debris
- Climate, Air Quality & Noise

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KEEYASK Physical Environment



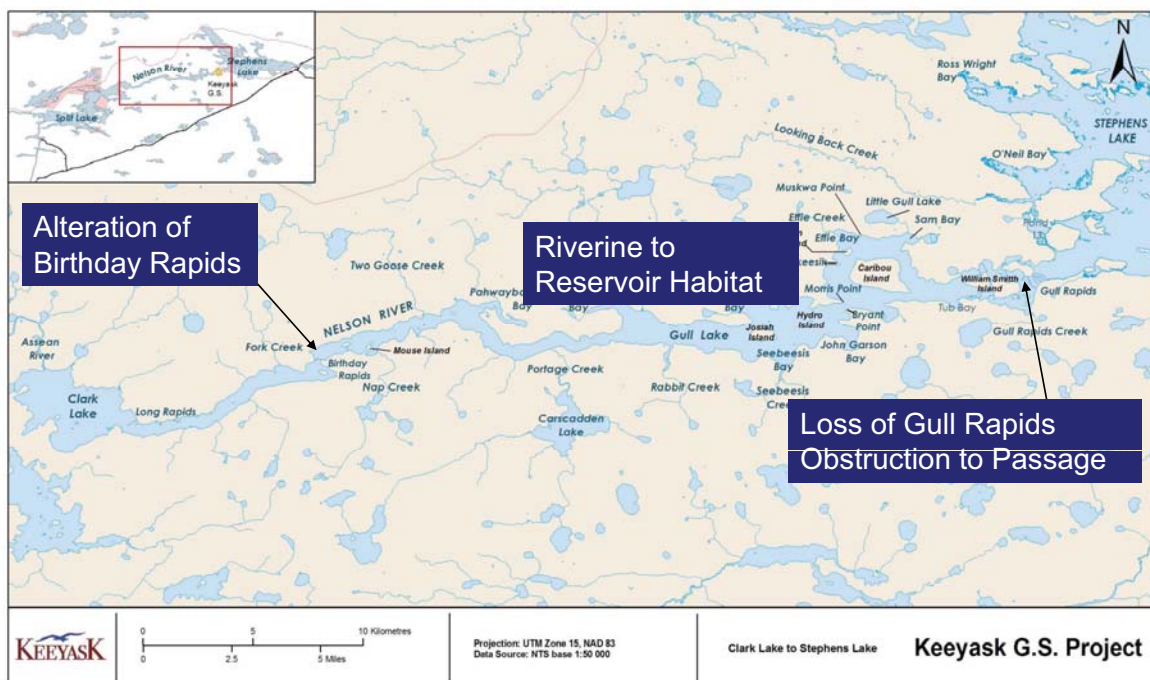
KEEYASK Aquatic Environment

Initial effects include

- Habitat changes
- Lake Sturgeon
- Fish Passage
- Other Effects



KEEYASK Aquatic Environment



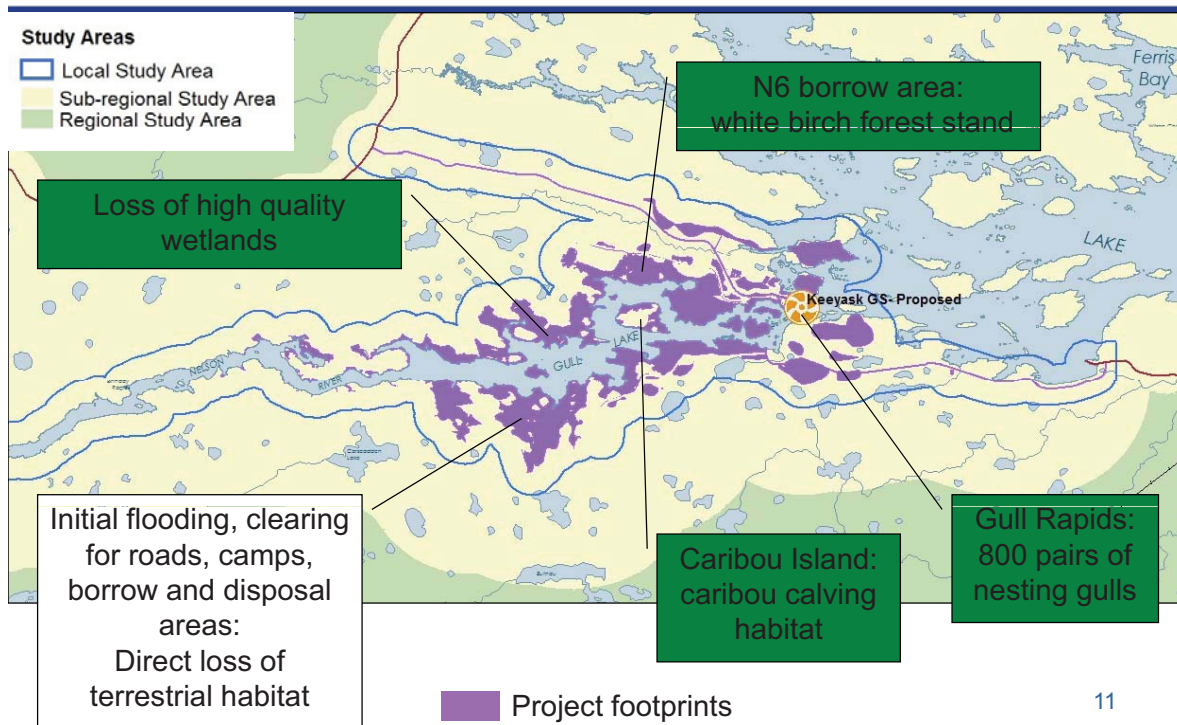
KEEYASK Terrestrial Environment

Initial effects include

- Peatland disintegration
- High quality wetlands
- White birch forest
- Caribou calving habitat
- Waterbird habitat



KEEYASK Summary of Terrestrial Effects





Resource Use

- Traditional Resource Use
 - Domestic fishing
 - Domestic hunting and gathering
 - Traditional lifestyle
 - Cabins and camping
- Commercial trapping
- Commercial fishing
- Recreational fishing and hunting
- Lodges, outfitters and other tourism
- Other resource use
 - Mining
 - Forestry
 - Protected Areas and scientific sites



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Socio-economic Environment

- Employment, training and business opportunities
- In-migration (Gillam/Thompson)
- Worker-related safety and social interaction
- Transportation safety
- Community health



KEEYASK Heritage Resources

- Archaeological Sites
 - 100 archaeological sites identified
- Burial and special sites
 - Identification of abandoned/unmarked burials
 - Recording of oral narrative and traditional knowledge



TCN Students Excavating at HbKu-9



Cabin foundation at HbKu-1 on Nelson R.

• Cultural Landscapes

- More thorough understanding and appreciation of the importance of cultural landscape to First Nations

CONAWAPA Introduction

- Manitoba Hydro's Integrated Resource Plan indicates a requirement for Conawapa in 2021 to meet domestic load, with the majority of the power available for export until needed by Manitobans. The earliest possible in-service date is currently under review.
- No final Conawapa development, design or construction decisions have been made.





Project Information

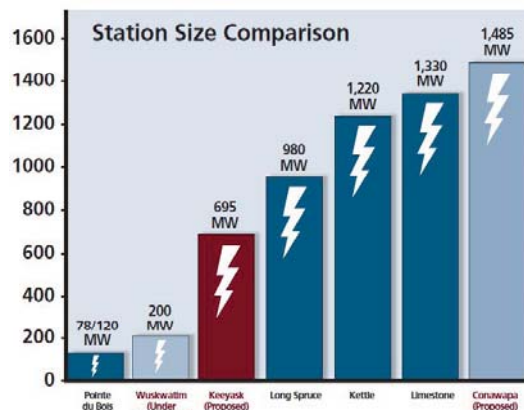
Average River Flow: 3300 m³/s

Nominal Capacity: 1485 MW

Plant Discharge: 5300 m³/s

Generator units: 10

Flooded area: 5 square kilometers

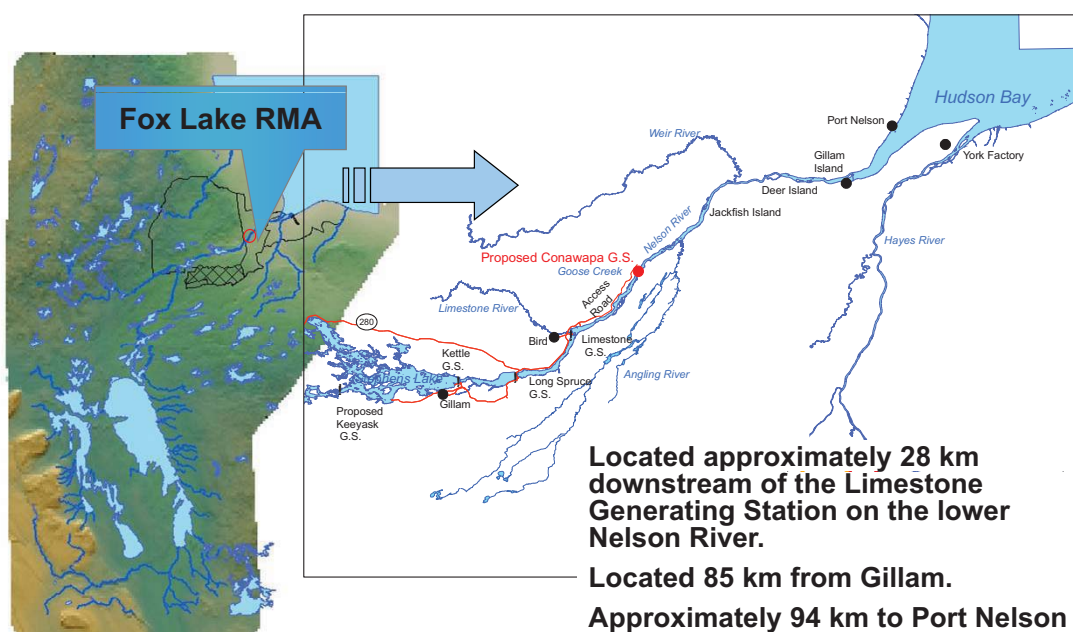


Construction period: approximately 8 to 8.5 years to get the first unit on line.

Potential of 65,000 person months of construction employment over total construction period of 10 years to final project completion.



Project Location



CONAWAPA EA Studies

- **Since 2004, Manitoba Hydro has been collecting information that will contribute to an environmental assessment study of the project**
- **Ongoing studies of the existing environment are considering:**
 - *Physical environment*
 - *Terrestrial and aquatic environment*
 - *Resource use*
 - *Socio-economic environment*
 - *Heritage resources*
- **Aboriginal traditional and local knowledge, along with knowledge from technical and other studies is intended to enhance the environmental assessment.**

CONAWAPA

Physical Environment Studies

Studies completed or underway:

- Water levels and flows under open water and ice conditions, including understanding the estuary of the Nelson River
- Ice processes
- Debris
- Water quality (such as total suspended solids) and quantity
- Groundwater
- Geology and soils
- Climate change
- Air quality





Aquatic Studies

Studies completed or underway:

- Aquatic habitat
- Fish populations
- Fish spawning
- Fish movements
- Fish quality, such as amount of mercury
- Marine mammals, such as beluga whales and polar bears
- Other aquatic organisms



Terrestrial Studies

Studies completed or underway:

- Habitat descriptions and mapping
- Large mammals (e.g., caribou, moose)
- Furbearers (e.g., beaver, muskrat, mink and otter)
- Small mammals (e.g., rabbits, voles and mice)
- Birds, ducks and geese
- Amphibians





Socio-Economic and Resource Use Studies

Studies planned or underway:

- Land and resources for traditional, recreational and commercial purposes
- Local and regional economy, including employment and business
- Population, housing, infrastructure and services
- Transportation, navigation safety and access
- Outdoor recreation
- Community health
- Culture



Heritage Resource Studies

Studies completed or underway:

- Surveys
- Excavations
- Burial sites identified
- Heritage resources, such as pottery and bone fragments from pre-contact to the historic period
- Culturally important sites





Pimicikamak / Manitoba Hydro

Article 9 Future Development Meeting

April 7, 2010

Presented by: Richard Goulet
Future Generation Partnerships Department



Purpose of Meeting

- Article 9 of the Northern Flood Agreement (NFA) commits Manitoba Hydro to a consultation process with regard to future development with the signatories to the Agreement.
- Presentation will focus on current and future training, employment and business opportunities (TEBO) related to the development of hydro-electric generating stations in Northern Manitoba.
- It will cover a number of related topics including:
 - general background information;
 - policies and initiatives to encourage Aboriginal training employment and business development; and
 - an update on Hydro's proposed new projects and how the community may benefit from these.



Future Development Strategy

- Undertake planning, public consultation, reviews and regulatory activities to prepare for hydro-electric generation projects for the export markets.
- Focus planning on Keeyask and Conawapa water power sites.

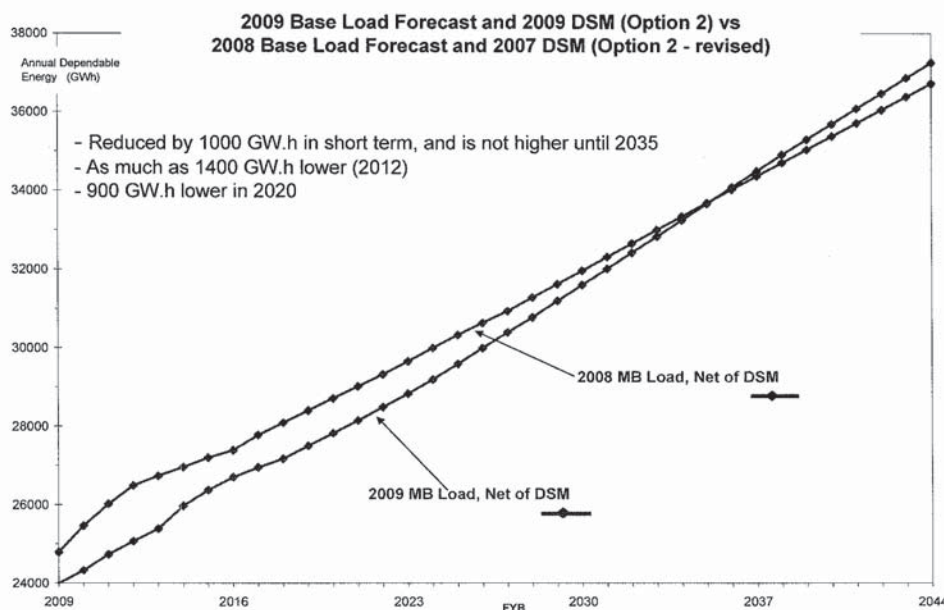


Factors Driving Future Development

- Increase in Manitoba Load
- Export Sales
- Development Portfolio



Manitoba Net Load Forecast

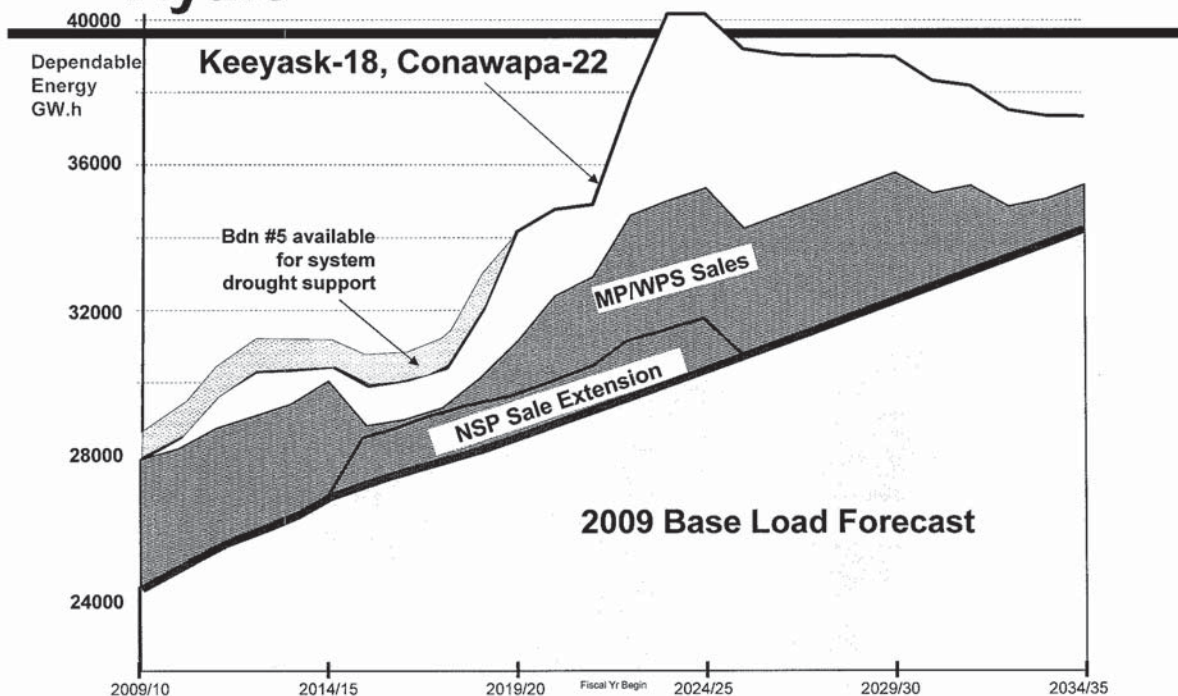


New Export Sales & Transmission

- Export Sales negotiations with:
 - Northern State Power
 - 2015 to 2025 ramping up from 725 to 850 MW
 - These figures include a diversity of 350 MW: MH sells an extra 350 MW in Summer (low MB demand) and has option to purchase that amount in Winter (high MB demand)
 - Wisconsin Public Service
 - 2018 to 2032 ramping from 250 to 500 MW
 - Minnesota Power
 - Up to 100 MW opportunity sale from 2008 to 2021
 - 250 MW sale from 2022 to 2035
 - WPS & MP sales are contingent on new interconnection to the US
- Transmission - new interconnection to Minnesota & Wisconsin
 - Strengthen connection to Wisconsin / Minnesota Export Market
 - Provides capacity to import from the US in low flow years
 - Assumed 1100 MW South, 1100 MW North
 - ISD 2018

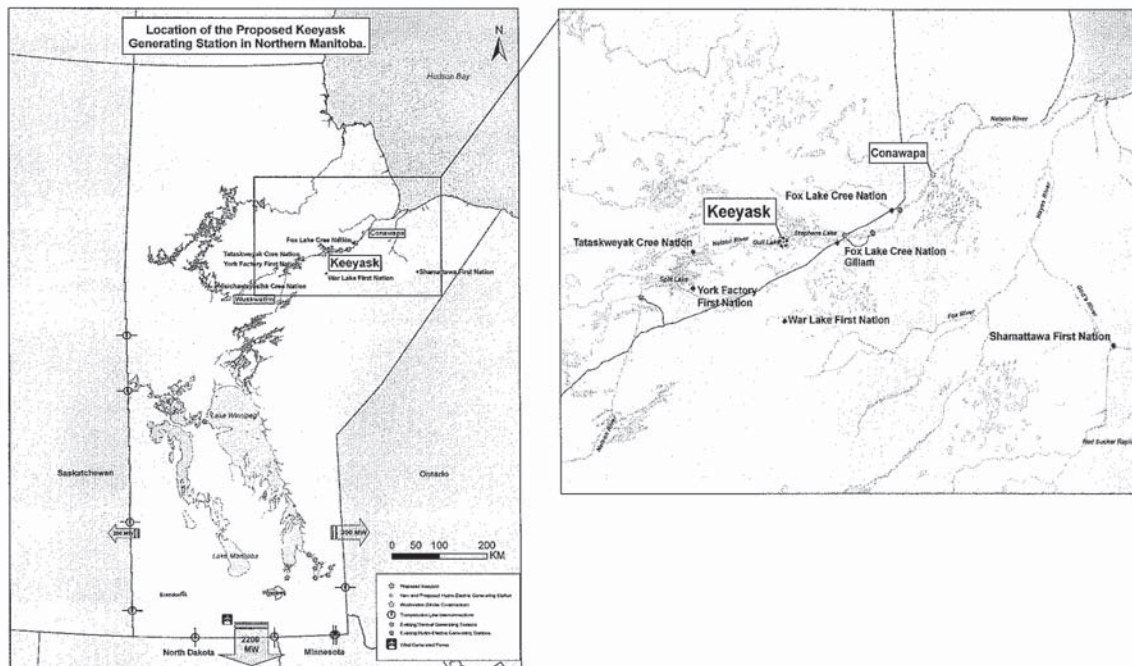


Supply/Load Balance- 2009/10 IFF



Manitoba Hydro Project Plans

• Existing System		5500 MW
• Power Smart (Customer Efficiency)		
- To date	2004	283 MW
- Planned	2019	495 MW
• Wind - St. Leon	2006	100 MW
- St. Joseph	2010	138 MW
• Kelsey Re-runnering	2011	+77 MW (315 MW)
• Wuskwatim	2012(2011)	200 MW
• Keeyask	2018(2017)	695 MW
• Conawapa	2022(2021)	1485 MW
• Bipole III line and converters	2017	2000 MW



Generation Projects

	ISD (earliest)	Nominal Capacity	Approx. Cost*	Construction Period	Employment	Area Flooded
Wuskwatim (Currently under construction)	2011	200 MW	\$ 1.3 B (gen)	6 years	700-900 (peak construction) 2200-2400 (person years)	0.4 sq km
Keeyask	2017	695 MW	\$ 4.5 B (gen)	8 years	1400-1600 (peak construction) 4400-4600 (person years)	46 sq km
Conawapa	2021	1485 MW	\$ 6.0 B (gen)	11 years	1600-1800 (peak construction) 5800-6000 (person years)	4 sq km

* Costs do not include related transmission



Keeyask GS Update

- Joint Keeyask Development Agreement signed - May 29th 2009
- Engineering & environmental studies are mainly complete and potential effects and remedial works which may be required are currently being determined.
- Manitoba Hydro not yet committed to proceeding



Conawapa GS Update

- Environmental & engineering studies for the Conawapa project have been underway for many years.
- More engineering and environmental studies must be completed before determining the full extent of potential effects and remedial measures which may be required for Conawapa.
- Hydro has not yet decided on its approach to Training, Employment and Business Opportunities (TEBO) for Conawapa



Approach to Development

Goals:

- Minimize Environmental Impacts
- Foster social and economic development in First Nation communities
- Alignment of interests in the licensing, construction and long-term operation of these projects



Social and Economic Features





Pre-project Training

- Goal: to ensure that Aboriginal communities fully benefit from construction / operations employment opportunities
- \$60.3 million funded by Hydro and the Provincial and Federal Governments under the Hydro Northern Training and Employment Initiative (HNTEI)
- Training consortium (WKTC) administers funds and coordinates training activities
- Each First Nation responsible for design, delivery and implementation of training in their community
- Since 2004/05 Cross Lake has received over \$1.2 million for training (total funding allocated to MKO of \$9.7 million).



Pre-project Training

- Participation of Cross Lake trainees (as of March 2010)
 - Participants - 76 trainees in 208 training activities
 - Programs
 - Adult Upgrading (47)
 - Plumbing (14)
 - Carpentry (55)
 - Preparation for Technology (84)
 - Facilities Technician Program (8)
 - Outcomes
 - 52 trainees have so far completed the training
 - Adult Upgrading – 28
 - Carpentry – 6
 - Plumbing – 8
 - Preparation for Technology - 10
 - 120 trainees are still involved in training activities not yet completed
 - 14 trainees have been unsuccessful (all in Prep for technology)
 - 11 withdrawals
 - 11 continued to next training period



Employment Opportunities

- Goal: optimize participation of Northern Aboriginal people in MH projects
- Proactive Measures to meet employment goals:
 - Aboriginal Employment Preference under the Burntwood Nelson Agreement (BNA)
 - Direct Negotiated Contracts (DNCs)
 - Proactive Tendering
 - Employment retention programs (Wuskwatim / Keeyask)
 - Aboriginal Pre-placement Program
 - Generating Futures Scholarship
 - Summer Employment Opportunities



Employment Opportunities

- Aboriginal Employment Preference under the BNA (art. 12)
 - Contractor sends job order to Manitoba Advanced Education and Training's (M.A.E.T.) Job Referral Service (JRS) which refers qualified candidates directly to contractor in the following order of preference:
 - 1) Northern Aboriginals who reside within the Churchill / Burntwood / Nelson River area
 - 2) Northern Residents who are members of the appropriate Local Union not covered by 1)
 - 3) Northern Aboriginals not covered by 1) and 2)
 - 4) Northern Residents not covered by 1), 2) and 3)
 - Art. 2.9 of BNA also allow the Keeyask Cree Nations to directly employ Northern Aboriginals who qualify as Northern Residents and who are registered with the JRS



Employment Opportunities

- Aboriginal Pre-placement Program
 - provide Aboriginal candidates with the opportunity for educational upgrading and experience in the field in a supportive work environment
 - prepare trainees for entry into the Power Supply Worker, Power Electrician, or Power Line Technician apprenticeship programs
- Generating Futures Scholarship
 - For Aboriginal students in Business, Engineering, Information Technology and other Technology Programs
 - \$280,000 Scholarship Fund over the next four years (2009-2012)
 - \$10,000 individual scholarships
- Summer Employment Opportunities
 - Actively seeking to hire summer students from employment equity groups including Aboriginal students



Wuskwatim Employment

- Currently Employed Aboriginal Employees
 - Total = 249 or 27% of total employees (end of Feb. 2010)
 - Cross Lake = 38 or 4% of total employees (end of Feb. 2010)
- Aboriginal Hires Since Start of Project
 - Total = 1513 or 45% of total hires (end of Dec. 2009)
 - Cross Lake = 199 or 6% of total hires (end of Jan. 2010)
 - “hires” refers to instances of hiring and can include individuals who have been hired more than once. All project hires are consistent within the provisions of the BNA
- One more peak year of work
- Must register with M.A.E.T.’s JRS in order to get Wuskwatim employment
 - registration valid for only 6 months / important to keep status active



Business Opportunities

- Goal - build capacity of First Nation people and businesses and allow them to take full advantage of opportunities generated by projects
- Pro-active Tendering Policies
 - formal tenders or quotations not required if goods or services are covered by contracts negotiated under the Northern Purchasing Policy



Northern Purchasing Policy

- Purpose and Scope: promote business, contract and employment opportunities for Northern Aboriginal People on work within the Northern Affairs Boundary
- Objectives:
 - encourage the maximum business participation of local Aboriginal communities and businesses;
 - assist these communities in building the capacity and competitiveness of their businesses through involvement in Manitoba Hydro contracts.
- How achieve objectives?
 - information sharing, scoping initiatives, negotiation or restricted tendering, recognition of Aboriginal Joint Ventures, and Aboriginal Content provisions.
 - “scoping initiative” is the breaking up of a normal contract package into smaller work packages to suit the capability of the community or businesses targeted to participate in the opportunity.
 - Northern Aboriginal Contractors are given top priority when the Corporation purchasing on northern work.



Northern Purchasing Policy

- Policies Regarding Northern Aboriginal Contractors
 - Contracts will:
 - be scoped to promote their participation where feasible
 - provide for Aboriginal participation including employment and training where schedule and skill requirements permit
 - Contract opportunities identified will be either:
 - negotiated with Northern Aboriginal Contractor in the vicinity of the project;
 - subject to restricted tendering to Northern Aboriginal Contractors in the vicinity of the project; or
 - negotiated or subject to restricted tendering to other Northern Aboriginal Contractors.
 - Additional measures to promote participation:
 - provide information on upcoming contracts and work packages in their vicinity
 - assess capability of contractor
 - assist in understanding technical requirements of contracts and procurement process
 - bid and/or performance bonding and/or security may be waived
 - cooperate with communities and government agencies to coordinate projects in order to promote longer term viability for Northern Aboriginal Contractors



Business Opportunities

- Joint Keeyask Development Agreement provides for the following tender specifications:
 - BNA part of specifications
 - on-the-job training to workers in specified trades;
 - job orders for on-the-job trainees or apprentices are restricted to northern Aboriginals residing in the Churchill/Burntwood/Nelson River Area, with first preference for such jobs being given to individuals who have received designated trades or technical skills training through the Hydro Northern Training and Employment Initiative.



Questions / Discussion