

Manitoba Hydro Undertaking #22

Manitoba Hydro to provide its best estimate as to when Wuskwatim will be required to serve Manitoba load.

The 2010/11 Power Resource Plan utilizes the 2010/11 load forecast, and this report contains an energy supply/demand balance from the dependable energy criterion perspective. This comparison of supply and demand indicates that the Wuskwatim Generating Station will be required in 2019/20 to serve Manitoba domestic load and existing export commitments as shown on the table below where the last year of surplus dependable energy is expected to be 2018/19. The expected retirement of Brandon Unit 5 coal-fired generation after 2018/19 is the significant factor that drives the requirement of new generation in 2019/20. With updated information it appears that 2019/20 will continue to be the required in-service date with the 2011/12 load forecast which is likely to be only slightly lower than the 2010/11 forecast over the next eight years. However, there is uncertainty in this estimate as demonstrated by the changes in load growth in the last several years.

It should be noted that during the “need for and alternatives to” process in 2003 it was stated that, although the advancement of the Wuskwatim G.S. was being justified primarily on the basis of obtaining profits from new export revenues, there were many other factors that provided justification for early construction. At that time it was stated that one such additional justification was that it provided a source of generation should the Manitoba domestic load grow at a rate higher than forecast. In fact, subsequent to 2003 there was a significant increase in the load growth such that with the 2007/08 load forecast Wuskwatim G.S. would be required by 2012/13 to serve existing load requirements. It is only in the last three years that the load growth has decreased to the point where Wuskwatim G.S. is not required until 2019/20 from the perspective of the dependable energy criterion.

Further factors that supported the advancement of Wuskwatim considered the possibility of circumstances that would reduce the existing Manitoba Hydro energy supply such as provincial or federal regulation of coal-fired generation. A further justification for advancement was that Wuskwatim would enhance Manitoba domestic reliability immediately upon coming into service and provide a short-term economic stimulus for Manitobans.

System Firm Energy Demand and Dependable Resources (GW.h)

2010/11 Power Resource Plan - No New Generation

Fiscal Year	201011	201112	201213	201314	201415	201516	201617	201718	201819	201920
SYSTEM SURPLUS with Wuskwatim	975	1353	1888	1350	1242	2198	1890	1867	1587	415
Add Back: Construction Power for Keeyask & Conawapa					10	15	20	30	50	55
Less: Wuskwatim		(550)	(1250)	(1250)	(1250)	(1250)	(1250)	(1250)	(1250)	(1250)
SYSTEM SURPLUS w/o Wuskwatim	975	803	638	100	2	963	660	647	387	(780)

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When would Wuskwatim additional generation be required to serve the NSP extension?

The return energy provisions associated with the NSP sale are very nearly equal to the energy obligations of the sale under adverse water conditions. Therefore, the NSP sale does not require any Manitoba Hydro generation under dependable flow conditions, including any generation from Wuskwatim, in any year before it terminates in 2025. However, beginning in 2015 there are many flow conditions under which the energy from Wuskwatim will be useful in meeting the requirements of the NSP sale by providing economic hydroelectric energy. In these flow conditions the Wuskwatim energy will displace more expensive thermal and import energy and consequently increase the benefits of the sale. The economic analysis of the NSP Sale extension was based on the positive benefits that the early construction of Wuskwatim provides to the system.