Manitoba Hydro Undertaking #23

Manitoba Hydro to provide:

1) **Internal rate of return provided to the CEC hearing;**
2) **Manitoba Hydro's response provided to the PUB at the last GRA; and**
3) **Re-run internal rate of return calculation using the now revised forecasts of export prices.**

1) Internal rate of return provided to the CEC hearing

In 2003 and 2004 the "need for and alternatives to" (NFAAT) process for the Wuskwatim GS and associated transmission consisted of a hearing before the Clean Environment Commission (CEC) to review the justification of the project. In this CEC process the internal rate of return was determined from two perspectives:

(a) The advancement of the project from 2020 to 2009 resulting in an internal rate of return of 10.3% based on 2003 assumptions, which was updated to 10% prior to the conclusion of the CEC hearing in 2004.
(b) The long-term economics of the project relative to an alternative consisting of simple cycle combustion turbines resulting in an internal rate of return of 10.3%.

2) Manitoba Hydro's response provided to the PUB at the last GRA

In the 2008 GRA Manitoba Hydro provided an update of the internal rate of return calculation based on updated information on capital cost and export prices. The information for this update was based on CEF07 capital costs of Wuskwatim which consisted of an in-service cost of $1.594 billion with an in-service date of 2011/12. The export prices in Canadian dollars corresponding to the 2007 forecast were found to be almost identical to those in 2003. Therefore, no adjustment was required for export prices in the 2008 GRA update.

Because of the significant load growth between 2003 and 2007, during the 2008 GRA Wuskwatim was found to be required to serve Manitoba load by about 2012. Therefore, the scheduled first unit in-service date of August, 2011 was not an advancement of the project, and Manitoba Hydro stated that it was not appropriate to assess the internal rate of return from this perspective. As a response to the request for an update to the internal rate of return, Manitoba Hydro provided the following information during the 2008 GRA. The long-term economics of the project relative to an alternative consisting of simple cycle combustion turbines resulted in an updated internal rate of return of 6.5%. This update was undertaken using the 2003 analysis assumptions but substituting updated CEF07 capital costs of the Wuskwatim project, including all sunk costs.

3) <u>Re-run internal rate of return calculation using the now revised forecasts of export prices.</u>

Manitoba Hydro has undertaken a review of the calculation of internal rate of return based on 2010 revised forecasts of export prices. It was found that the 2010 forecast of export prices in Canadian dollars is very similar to the 2007 forecast, and in fact the 2010 forecast is somewhat higher in the later years of the analysis period. A comparison of capital costs between 2007 and 2010 indicated that it was not necessary to update these costs in the calculation of internal rate of return since the in-service capital cost is $1.566 in CEF10, which is nearly identical to the $1.594 billion in CEF07. The long-term economics of the project relative to an alternative consisting of simple cycle combustion turbines has an internal rate of return of 6.7% based on 2010 assumptions, which is a slight increase from the 2008 GRA update of 6.5%. This was determined by utilizing the 2008 analysis assumptions and adjusting the production costs and revenues by the ratio of 2007 and 2010 export prices.