

Evaluation of KPMG Risk Management Recommendations. Exhibit # MH-88, Transcript Page 3,916.

I - Enhance the functionality and resourcing of the Export Power Middle Office.

- 1) KPMG: Manitoba Hydro should transfer the credit risk function in PSO to Middle Office.  
Action: MH has already created a new position to assume duties of the credit risk function.  
KM concur with this recommendation and will verify with MH that this position is filled.
- 2) KPMG: MH should also consider the transfer of the market risk function in PSO to the middle Office.  
Action: Middle Office has established the position of Senior Market Risk Analyst.  
KM concur with this recommendation and will verify that this is carried out.
- 3) KPMG: MH's process of reviewing export contracts and term sheets should include the Middle Office to perform a challenge function.  
Action: The Middle Office will now participate in the review of proposed term sheets and export contracts.  
KM concur with this recommendation but believes that a clarification is needed as to the role of the MO. There should be a spelled out responsibility of MO to report to a particular senior management person on its review. Also necessary is a clarification of what exactly is expected of the MO and what would happen to their review. Who is responsible for what and to whom would the MO report and what would be the procedure and what the expected outcome is of this review.
- 4) KPMG: Responsibility for power risk management policy for opportunity sales should be consolidated in the Middle Office.  
Action: The Middle Office is participating in the review of all policies and will ensure that any required updates are fully documented and approved.  
KM concur with the recommendation but feel that it is not fully spelled out. The action taken by MH is not fully consistent with the KPMG recommendation. We would like to see that the responsibility is devolved to the Middle Office and not only the review activity.
- 5) KPMG: MH should consider adding resources including risk analytic tools (i.e., software to increase the risk analysis capabilities of the Middle office.  
Action: The MO is in the process of acquiring risk analytic tools and has engaged an external consulting support to assist in software selection.  
KM concur with this recommendation but goes further to recommend recruiting a statistician or actuarial person. The need is not restricted to software but a person that can use it and interpret its results too.

II- KPMG: MH must develop formal identification of all significant risks in policies and procedures.

Action: Manitoba Hydro is reviewing all policies and procedures to ensure that any required updates are fully documented.

KM concur with this recommendation but would like it extended to cover all the categories of risks identified in the risk map and risk report. We would like to see this review expedited and actual documentation completed within a specified date.

III – KPMG: Manitoba Hydro should enhance the number of risk tolerance limits to include VaR based limit for related Merchant Transactions, option limits and counterparty concentration limit.

Action: The Senior Market Risk Analyst has completed a forward price curve that will enable a VaR analytics on portfolio exposure.

KM concur with this recommendation but again would like to see it cover more aspects of risk exposure than those identified by KPMG. VaR could be used to set limits on all aspects of risk. MH's forward curve is a good step but a very small step in the direction of this recommendation.

IV – KPMG: Manitoba Hydro should consider applying mark-to-market to its open short-term commodity positions.

Action: Mark-to-market is applied to short term positions not physically backed by generation assets.

KM would like to see mark-to-market used in evaluation of all financial transactions backed or without backing. The reason for using MTM is to use appropriate valuation of exposure where replacement values and not book values are used.

V – KPMG: Manitoba Hydro should also evaluate the benefits of measuring market risk in long-term export contracts which would require resources to develop forward price curves.

Action: Manitoba Hydro will consider the potential benefits of this recommendation

KM recognize that MH has already developed the recommended forward price curves, but this recommendation deals with more than that. It is about evaluating the risk exposure embedded in long term export contracts. This recommendation was also tendered independently by KM and we feel strongly about. There is a definite benefit to this assessment and even to considering assigning adequate risk capital to back any exposure.

VI – KPMG: Manitoba Hydro should document how the pricing was arrived at for export contracts and term sheets, as well as document approval of term sheets.

Action: The Approval Authority Table for power related transactions has been amended to include term sheet approvals.

KM feel that the Internal Responsibility Matrix should include this assignment of responsibility to document how prices in long term contracts are determined . More importantly, the documentation of avoided cost as a methodology for verifying and validating export prices in long term contracts needs to be done.

VII – Manitoba Hydro should continue to further improve the HERMES and SPLASH models.

Action: 1) MH will continue to review generation system model requirements and existing capabilities, and will continually assess the need to update modeling tools and methodologies.

2) MH will continue to develop and test HERMES enhancements needed to evaluate operations planning decision methods.

KM: A large set of recommendations were made in this regard that include exploring situating the models on a common platform, move towards the use of a common solver, exploring the use of dynamic and nonlinear specifications and integration of stochastic tools and specifications. KM also recommended formal documentation of the User and Technical Manuals, continuous training, external verification and oversight.

VIII – KPMG: MH should consider formal peer review and benchmarking of the models to benefit from modeling developments elsewhere in the energy sector.

Action: 1) MH will further consider the value of additional peer reviews and benchmarking of its models.

2) MH will continue to participate in industry forums such as workshops and conferences to remain current in the field of power systems.

KM would like MH to establish contacts and designate a group for this peer review and that this is organized as a routine function that would take place regularly.

IX – KPMG: MH should conduct more scenario analyses and stress testing of its expansion plans and development sequence.

Action: MH continues to analyze drought scenarios on a routine basis. In addition, MH will investigate methodologies for incorporating broader scenario analysis and stress testing of into long-term planning.

KM would also want to specifically see MH apply VaR and stress testing to all elements of the expansion plan and development sequence, separately and in combinations. MH may also want

to consider the magnitudes of risk capital that is required to mitigate the different exposure levels under different scenarios.

X – KPMG: MH should consider using back-testing to assist in further validating model outputs.

Action: 1) MH continues to participate in a variety of studies related to the effect of climate change on available water resources and its financial impact.

2) MH will further consider the value of additional back-testing of its models.

KM: would like to see a thorough testing Forward and backward of model forecasts and that these models be improved by adding more time-lags and where ever possible to adopt into the structural equations some hydrological variables.

XI – KPMG: MH should formally document HERMES and SPLASH models to preserve their proprietary information and assist new modelers.

Action: 1) MH will further consider the format of additional documentation that could assist in preserving proprietary information and could assist new modelers in developing the required expertise related the modeling function.

2) In order to maintain a source of qualified graduates with advanced training in Power System Modeling, MH will continue to support the Faculty of Engineering at the University of Manitoba through a Water Resources Senior Industrial Research Chair. This is a long term strategic action to ensure MH has access to Research and development in the area of water resources systems.

KM are happy with these new developments and would also hope that their recommendation to formalize a Modeling Committee that would be entrusted with many of these developments on a formal basis with resources and well defined reporting channels.

XII – KPMG: MH should review its capital structure on a regular basis.

Action: MH will continue to review its capital structure on a regular basis.

KM it is imperative that these recommendations do not stop at the review stage. Actions and structural adjustment programs are needed to align the functioning of the organization with

these recommendations. Equally important is a structure (function) within the Organization that would be responsible to monitor progress and implementation. This functions would be best coordinated by the Middle Office.