

## **MANITOBA HYDRO**

### **Corporate Risk Management Middle Office Report June 2009**

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#### **A. Credit**

On-going review and advisory support is being provided to PS&O (Power Sales and Operations) credit function to assist in revising and updating its credit policy and procedures. The policy and procedures (once approved by EPRMC and PSOMC) would result in revised counterparty credit limits. The revisions will be based on Global Credit Services credit scoring software and the revised policy and procedures. Corporate Credit Risk Management is also providing concurrent support to PS&O credit function.

Our support also included the review of a counterparty credit limit exception. Approval of the exception resides with the Division Manager of PS&O. The support provided is consistent with PS&O's proposed role of Middle Office to provide an independent review mechanism of their credit risk management.

#### **B. ICF Consulting Assignment - Independent Review of Export Sales and Associated Risks**

Middle Office is coordinating ICF's information requirements and on site visit, May 19 and May 20. The series of meetings arranged for ICF to meet with the majority of key Hydro staff in areas necessary for them to conduct their work. Additional information is being gathered for them and they will begin their analysis phase.

A draft report is scheduled for the end of June. During the visit, the ICF team demonstrated the technical knowledge and experience necessary to conduct their independent review consistent with their proposal.

#### **C. Short Term Resource Management and Power Trading Activities**

Middle Office assisted with improvements to supporting documentation of weekly hydraulic supply forecast meetings of Power Trading and Hydraulic Operations. The forecasts are generated by HERMES model and provide input into export/import decisions made by the Power Trading Department during the week, particularly in day ahead activities.

Key decisions are now recorded regarding changes agreed to at the meetings. Other key data will be incorporated into information that will assist Middle Office in monitoring as well as provide appropriate supporting documentation of PS&O trading and water management for audit purposes. It is anticipated to be an on-going process for improvements.

## D. Short Term Transactions

Work with Power Trading is on-going to develop supporting documentation practices for assessing compliance. Documentation in place to date supports transactions to be in compliance. The table below outlines total volumes and average price for contracts entered into by Power Trading during the period January to April 2009.

MW per hour	Jan	On-Peak Feb	Mar	Apr
<b>Forecast surplus volume</b>	<b>not available</b>			<b>509</b> <sup>1</sup>
Volume Approved for Sale	50	50	100	300
Physical Bilateral Sales (New)	50	50	100	-
Avg Price (\$ US)	70.00	70.00	70.00	-
Financial Bilateral Sales (New)	0	0	0	0
Financial Sales under existing Long Term Contracts				50 <sup>2</sup>
Avg Price (\$ US)	-	-	-	25.57
Avg Index Price (\$ US)	44.19	33.87	27.11	24.80
Remaining Surplus	-	-	-	300
<sup>1</sup> Avg 50% Peak				
<sup>2</sup> Sale done on availability of surplus 1 x 16				

Note that no off peak volumes were approved for sale during this period. Risks associated with these transactions are primarily price and volume. Applicable policy/control requirements are outlined in Appendix A for reference.

## E. Surplus Energy/Forward Position

A Surplus Energy and Forward Position Report on the portfolio is being developed by Middle Office. An initial report for the period May 2009 to September 2009 is included. Further revisions to this report will be on-going.

**FORWARD POSITION REPORT**  
**May to September 2009**

<b>MWh</b>	<b>May</b>	<b>June</b>	<b>July</b>	<b>Aug</b>	<b>Sept</b>
Dependable Book <sup>1</sup>	539,822	234,510	244,995	224,985	224,505
Term Book <sup>1</sup>	100,928	5,520	3,720	81,120	-
	640,750	240,030	248,715	306,105	224,505
Avg Price Dependable Book <sup>2</sup>	\$37.48	\$36.62	\$36.62	\$36.62	\$36.62
Avg Price Term Book <sup>2</sup>	28.50	17.92	14.59	41.79	-
Forecast Prices U.S. MWh <sup>3</sup>	\$28.25	\$34.00	\$40.50	\$35.25	\$28.50

<sup>1</sup> Includes On peak and Off peak

<sup>2</sup> Avg Price On peak except for June, July Term

<sup>3</sup> On Peak as at May 8, 2009

**Energy Surplus Position - May to September 2009**  
**Surplus Quantities Approved for Sale**

<b>MW per hour</b>	<b>May</b>	<b>June</b>	<b>July</b>	<b>Aug</b>	<b>Sept</b>
<b>ON PEAK</b>					
<b><i>Forecast Surplus (at Mar 6,2009)<sup>1</sup></i></b>					
Avg (50% Peak)	980	933	634	734	675
Peak	693	974	779	868	714
<b><i>Quantities Approved for Short Term Sales</i></b>	<b>500</b>	<b>500</b>	<b>400</b>	<b>400</b>	<b>300</b>
<b>New Short Term Sales Made To Date</b>	<b>100</b>	<b>0</b>	<b>0</b>	<b>50</b>	<b>0</b>
<b>Short Term Sales flowing under existing Long Term Contracts<sup>2</sup></b>	<b>200</b>			<b>150</b>	
<b>Remaining surplus from Quantities Approved</b>	<b>200</b>	<b>500</b>	<b>400</b>	<b>200</b>	<b>300</b>
<b>OFF PEAK</b>					
<b><i>Forecast Surplus (at May 14,2009)<sup>1</sup></i></b>					
Avg (off-peak)	1,495	1,912	1,874	437	-
<b><i>Quantities Approved for Short Term Sales</i></b>	<b>500</b>	<b>500</b>	<b>500</b>	<b>300</b>	<b>-</b>
<b>New Short Term Sales Made To Date</b>				<b>25</b>	
<b>Short Term Sales flowing under existing Long Term Contracts<sup>2</sup></b>	<b>150</b>	<b>15</b>	<b>15</b>	<b>15</b>	
<b>Remaining surplus from Quantities Approved</b>	<b>350</b>	<b>485</b>	<b>485</b>	<b>260</b>	<b>-</b>

<sup>1</sup> Run date used in decision-making

<sup>2</sup> These sales done based on availability of surplus

## **F. Related Merchant Transactions**

**Transactions reviewed for the period were determined to be compliant.**

The attached table summarizes relevant information on the transactions for the period. Applicable policy/control requirements are outlined in Appendix B for reference.

The transactions involve trading energy purchased, not generated by the corporation. The volume of transactions is currently limited by the capacity of the related transmission positions (short and long term).

Risks associated with this activity, include the risk that the energy may not be accepted by the Canadian market, pricing may change in the Canadian market between the time energy is purchased in the day ahead market in U.S. and delivery of the sale into Canadian market at hourly or pre-dispatch price). In addition, a net position other than zero (purchases net of sale) may result in financial exposure. We would consider it to be a pure merchant transaction, which have not been approved at this time.

PS&O is developing revisions to trading risk limits to address recommendations made previously on these transactions. PS&O anticipates presenting the revisions shortly to the Market Committee.

Recommendations made include:

- Management Control Plan set risk parameters and limits related to the arbitrage transactions that are consistent with the EPRMC risk tolerance.
- Define transaction limits (such as the 1000 GWh) for transactions that are purchased to meet system requirements and later considered surplus separate from arbitrage transactions.
- Transaction limits for arbitrage trading include an intended zero net position.
- Defining/clarifying volume limits related to transmission of these trading activities.

**Middle Office Compliance Report**  
**Related Merchant Transactions**  
**Jan to April 2009**

	Jan	Feb	Mar	Apr
<b>Number Deals</b>	182	155	156	124
<b>Duration</b>	1 day	1 day	1 day	1 day
<b>% Total Deals with Losses</b>	19.8%	33.5%	35.2%	26.6%

	Total MWh	Total Settlement	Total MWh	Total Settlement	Total MWh	Total Settlement	Total MWh	Total Settlement
<b>US/CDN Market</b>								
Purchases[1]	125,072	4,595,508	120,601	3,864,105	97,407	2,448,227	69,083	1,292,003
Sales	<u>125,072</u>	<u>5,606,985</u>	<u>120,601</u>	<u>4,409,578</u>	<u>97,407</u>	<u>2,938,059</u>	<u>69,083</u>	<u>1,657,134</u>
Net Position	0		0		0		0	
Total Trading Gains/(Losses)[2]		1,011,477		545,473		489,833		365,130
Profit Share to Third Party								
<b>Other[3]</b>								
Purchases	6,335	291,413	11,105	429,779	4,328	154,635	5,191	171,165
Sales	6,335	<u>260,445</u>	11,105	<u>400,748</u>	4,328	<u>122,398</u>	5,191	<u>183,933</u>
Total Trading Gains/(Losses)		(30,968)		(29,031)		(32,236)		12,768
Profit Share to Third Party								
<b>Transmission &amp; Market Costs[4]</b>								
Net Profit		390,840		(12,611)		(44,517)		47,720

**Compliant**

[1] CDN dollar sales converted to US at Webtrader rate

[2] Before transmission and market costs

[3] Purchases not accepted by CDN market and sold back into US

[4] Source: Webtrader monthly summary



## **Short Term Contracts - Related Policy**

### **A. System Energy & Related Products - Management Control Plan<sup>1</sup>**

*"System energy products include physical bilateral contracts, day ahead market and real time market power transactions and related products. The underlying intent for these transactions is the physical delivery of power to or from Manitoba Hydro's system."*

*Forward sales and purchase contracts, two weeks and longer in duration are formalized in writing in accordance with the applicable Master Agreement. The power trader or marketer negotiates these forwards sales using industry pricing indicators as a guide."*

#### **Pricing**

- As a minimum, Hydro will require recovery of 110% of its incremental costs in making any short term forward sale commitment. The power trader or marketer uses this information along with industry pricing indicators to negotiate forward contracts.

#### **Transaction Limits**

- No specific limits established in the Management Control Plan for short term physical forward sales.

### **B. System Financial Products**

*Put and call options, swaps and bilateral contracts for differences for power or natural gas for the purpose of managing the uncertainty in available generation or load forecast or fuel supplies for Hydro's power supply assets. In addition, these products may be used to enter into favorable forward sales or to minimize exposure to price volatility on power and gas purchases.*

#### **Permitted Financial Products**

- Put and call options, swaps, and bilateral contracts for differences. Financial Transmission Rights, auction revenue rights, virtual bids and offers and bilateral contracts registered as financial schedules.

#### **Volume Limits**

- Cannot exceed the projected underlying physical position.

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<sup>1</sup> Approved by the Board of Directors November 22, 2007

**C. Approval Authority**

Transactions from existing generation or purchase from 15 calendar days up to the later of 5 months or the next March 31<sup>st</sup>:

Power Sales & Operations Market Committee or Division Manager Power Sales & Operations for volumes for purchase or sale *and*,

Manager, Power Trading or Financial Trading Supervisor for transactions.

**D. Confirmation Method**

Either orally or through electronic communication or approved electronic platform followed up by written confirmation. The Management Control plan states that written contracts are reviewed, approved, and signed in accordance with the approval authority requirements noted above.

## **Related Merchant Transactions - Related Policy**

### **A. Merchant Transactions - Management Control Plan**

*Resale of power purchased from third parties and which either flows over transmission owned or reserved by/for Manitoba Hydro or was purchased for Manitoba Hydro system requirements and has subsequently been deemed surplus.*

#### **Transaction Limits**

- Maximum net power position of 1000 GWh
- Fixed price to fixed price transactions may be entered into only if there is a positive profit margin
- All other transactions may be entered into only if there is a positive expected value and with a term no more than three days in duration.
- Maximum duration six months

### **B. Approval Authority**

- Merchant Energy Products up to and including 14 calendar days in duration: Manager, Power Trading or Division Manager, Power Sales & Operations
- Merchant Energy Products Day Ahead: Day Ahead Power Trader or Financial Trading Supervisor
- Merchant Energy Products Real Time: Day Ahead Power Trader or Financial Trading Supervisor or Real Time Power Trader or Physical Trading Supervisor

**Transactions Two Weeks or Less in Duration - Related Policy**

- Includes physical bilateral transactions up to two weeks and Day Ahead and Real Time market bids and offers.
- Market bids and offers are subject to minimum sell and maximum buy prices determined using short term water conditions and forecasted energy supply requirements.