Exhibit # MH-16
Transcript Page #906

Manitoba Hydro Undertaking #6

Provide MH's estimate of the increase in gas generated electricity, as well as coal generated electricity, if there was a $15 a tonne green house gas penalty. Does it double if its $30 a tonne.

Typical variable production costs from existing generation were provided graphically on pages 7 and 8 of the presentation titled Manitoba Hydro Market Considerations for Planning by Joanne Flynn dated May 31, June 1, 2010 which appears as Attachment 6 of Appendix 56 of the GRA. The generation costs and carbon prices provided in this presentation are illustrative of the current MISO market. The table below is an extension of the table provided in the response to PUB/MH/RISK-49(b) which demonstrated the increase in variable electricity price costs for gas-fired generation under $15 and $30 greenhouse gas penalties. The table has been expanded to include coal-fired generation for a more and a less efficient unit. In addition, due to discussion of unit efficiencies in transcript pages 892 to 893 the overall efficiency for conversion of fuel to electricity has been included. This table shows that the incremental cost of generation due to greenhouse gas doubles with a $30 carbon cost compared to a $15 carbon cost.

	More Efficient CCCT	**Less Efficient CCCT**	**More Efficient CT**	**Less Efficient CT**	**More Efficient Coal**	**Less Efficient Coal**
Emissions Rate (Tons CO2e/MWh)	0.43	0.59	0.52	0.82	1.17	1.41
Unit Efficiency (See Note 1)	45.5%	34.1%	35.9%	25.3%	34.1%	28.4%
Carbon Value (US$/ ton)	$15.00	$15.00	$15.00	$15.00	$15.00	$15.00
Carbon Emissions Cost Adder (US$/ MWh)	$6.45	$8.85	$7.80	$12.30	$17.55	$21.15
Carbon Value (US$/ ton)	$30.00	$30.00	$30.00	$30.00	$30.00	$30.00
Carbon Emissions Cost Adder (US$/ MWh)	$12.90	$17.70	$15.60	$24.60	$35.10	$42.30

Note 1: Conversion factor:

1 kWh	= 3412.14 BTU
1 MWh	= 3.412 MMBtu

Heat Rate: A measurement used in the energy industry to calculate how efficiently a thermal generator uses heat energy. It can be expressed as the number of BTUs of heat required to produce a kilowatt-hour of energy. One MMBtu equals one million BTU.

Unit Efficiency = 3.412 MMBTU/ MWH / Heat Rate (expressed in MMBTU/ MWh) x100%

The cost of gas and coal-fired generation will vary with the cost of O&M and price of fuel. The table below is an extension of the table provided in response to PUB/MH/RISK-49(a) which provided variable O&M costs and the variable cost due to fuel price for gas generation. The table has been expanded to include a more and less efficient coal unit.

	More Efficient CCCT	**Less Efficient CCCT**	**More Efficient CT**	**Less Efficient CT**	**More Efficient Coal**	**Less Efficient Coal**
Heat Rate (MMBTU/ MWh)	7.5	10.0	9.5	13.5	10.0	12.0
Unit Efficiency (See Note 1)	45.5%	34.1%	35.9%	25.3%	34.1%	28.4%
Variable O&M Cost ($/ MWh)	$7.00	$7.00	$10.00	$10.00	$4.00	$4.00
Fuel Cost (US$/ MMBTU)	$3.00	$3.00	$3.00	$3.00	$1.13	$1.13
Variable Production Cost (US$/ MWh)	$29.50	$37.00	$38.50	$50.50	$15.30	$17.56
Fuel Cost (US$/ MMBTU)	$7.00	$7.00	$7.00	$7.00	$1.56	$1.56
Variable Production Cost (US$/ MWh)	$59.50	$77.00	$76.50	$104.50	$19.60	$22.72
Fuel Cost (US$/ MMBTU)	$12.50	$12.50	$12.50	$12.50	$1.99	$1.99
Variable Production Cost (US$/ MWh)	$100.75	$132.00	$128.75	$178.75	$23.90	$27.88

The assumptions underlying the above table are detailed in the slide titled "Typical Variable Production Costs from Existing Generation" on page 7 of the presentation. The fuel efficiency or heat rate of existing CCCT and CT generators varies significantly based on the turbine model and age of the unit. Therefore, the variable electricity production costs are given for two values, that of a more efficient CCCT/CT, and that for a lower efficiency CCCT/CT, which cover most of the range of such gas fired units operating in the market.

The cost of coal-fired generation can vary widely based on the distance of the generator from the coal mine and the quality of the coal supply. The range of coal costs ($1.13 to $1.99/ MMBTU) is illustrative of this difference.

It should be noted that the value of electricity in the future includes many factors in addition to those considered in the tables above. Generators within the MISO market are not obligated to offer their generation into the MISO market at exactly their variable production costs, and there typically is some degree of mark-up on their offers into the market, depending on operating and competitive considerations.

The particular marginal generator which actually sets the market clearing price varies continually as the weather, load, time of day, seasons, generation outages, transmission outages and fuel costs change. The MISO day-ahead market price does not include any value for fixed or capacity costs. The fixed or capacity costs are recovered through bilateral contracts such as Manitoba Hydro's long-term export contracts which include capacity revenue. Therefore, the determination of market prices in the future cannot be based solely on variable production costs and must also incorporate other factors such as the future generation mix and the capital cost of new generation.