

DR. ADONIS YATCHEW

Scope of Work

For Microeconomic Issues:

1. Review, assess and comment on the reasonableness of the price elasticity information incorporated in Appendix 7.1 of Manitoba Hydro's General Rate Application.
2. Provide a review of the relevant literature on the price elasticity of demand for electricity, drawing from the North American experience in particular. This should distinguish between how different customer classes ("Residential," Commercial" and "Industrial") and how different sectors of the economy (including industry, small business, agriculture, manufacturing, and any other relevant sectors) respond to price changes in light of their different substitution possibilities and geographical mobility. This literature review should include consideration of any impacts on First Nations consumers, including residential and commercial and/or industrial First Nations ratepayers.
3. Review
 - Tab 9 and Appendix 9.13 (Survey of Canadian Electricity Bills) in Manitoba Hydro's General Rate Application; Manitoba Public Utilities Board's Needs For and Alternatives To Report with respect to ratepayer impacts;
 - Available information regarding consumption patterns of Manitoba industries, including PUB/MH I-54 and PUB II-58 from Manitoba Hydro's 2015/16 General Rate Application.

Provide analysis and comment on what, if any, inferences can be drawn from the general literature on the price elasticity of demand for electricity to the Manitoba context, specifically given:

- a) The history of the levels of electricity prices in Manitoba; and
 - b) substitution possibilities due to technological improvements in renewable energy sources.
4. In light of Manitoba Hydro's request for an annual increase in average electricity rates of 7.9%, including for the fiscal years of 2017/18 and 2018/19, as well as the proposed rate trajectory over the next 10 years, provide comment on how various domestic customer classes might be expected to respond to an increase of the proposed levels.
 5. Review, assess and provide an explanation of any implications for the economy of the Province of Manitoba arising from the impact of any rate increase or lack thereof on the fiscal health of the Utility.
 6. Provide comment on issues of rate shock, pacing of rate increases and the intergenerational impacts of rate increases in the Manitoba context, including with reference to the rate increases sought by Manitoba Hydro in its General Rate Application.
 7. Review and assess Manitoba Hydro's General Rate Application Appendices 10.4, 10.5, 10.6 and 10.7 (Bill Affordability). Provide comment on the issue of "Energy Poverty", including as the issue applies to Indigenous and Northern communities, and an analysis of the experience in other Canadian jurisdictions as to measuring the extent of this problem and potential remedies that have been suggested. What lessons can be learned from other Canadian provinces as to measuring the extent of this problem and potential remedies that have been suggested.

For Macroeconomic Aspects:

8. Given your findings with respect to demand responses by various customer classes and sectors of the economy to electricity price increases, review, assess and provide analysis on the potential or probable implications for the Manitoba economy as a whole.
9. In the context of the proposed Manitoba Hydro rate increases, with the benefit of the latest Statistics Canada input-output tables for Manitoba (and/or other relevant sources), identify and provide comment on the "electricity intensive" sectors of the Manitoba economy, including the following:
 - a. Whether the province would be at risk of losing major electricity-consuming firms to other North American jurisdictions;
 - b. In light of the heavily export-oriented nature of key sectors of the Manitoba economy, what the implications would be for producers.
 - c. Place these issues in some quantitative perspective, both in terms of the aggregate provincial GDP and income distribution effects by key sectors and customer classes.
10. Provide a report on the Microeconomic Aspects and Macroeconomic Aspects to be placed on the public record that provides your findings and supporting information.