

2 Manitoba Hydro (“MH”)

2.1 MH/LEI I -1

Reference:

- LEI Evidence Section 1 Page 5 of 61

Request:

For each bullet referenced in the Key Findings and as more fully developed in the body of the report, please identify:

- a) The name and qualifications of each person who worked on each of the topics/findings by topic/finding, including a list of the previous projects or proceedings which the individuals participated in related to the topic and his/her role in the project or proceeding;
- b) A list of public reports or evidence provided or prepared by each of these individuals relevant to the issues raised in the report;
- c) The time spent by the person or persons who worked on each topic/findings by topic/finding.

Response:

- a) All evidence was prepared under the direction of A.J. Goulding. His CV is attached.
- b) Please see attached CV for a list of Mr. Goulding’s publications.
- c) Time spent by individuals will appear on invoices. This is not an appropriate matter for an IR given that the invoice(s) do not form part of the evidence being submitted.

2.2 MH/LEI I -2

Reference:

- LEI Evidence Section 2, Page 6 of 61

Preamble:

At Page 6, LEI states “Following approval of the GSS/GSM request to intervene in this proceeding in PUB Order 70/17, London Economics International LLC (“LEI”) was retained by Hill Sokalski Walsh Olson (“HSWO”) to provide independent evidence to assist the PUB in understanding the views and positions of the GSS/GSM customers in this proceeding.⁵ In a PUB letter dated September 15, 2017, the scope of LEI’s role was expanded to include key issues for the Keystone Agricultural Producers (“KAP”).⁶ LEI credentials appear in Appendix C of this report.”

Request:

- a) Please provide a copy of your written retainer agreement/ instructions.
- b) How did you determine what were the Key issues for GSS/GSM customers?
- c) Did you meet with members or representatives of BOMA, CME, Manitoba Hotel Association or other members of the GSS/GSM Intervenor group? If so, what information did they provide to you? If in written or electronic format, please file.
- d) Did you meet with members or representatives of KAP? If so, what information did they provide to you? If in written or electronic format, please file.
- e) Are all issues the same for all customers – and if not, please identify which customers are concerned about which issues.
- f) Were you instructed to include a critique of the capital plan of Keeyask?
- g) If you were instructed to critique the capital plans, including Keeyask, please identify and provide the information and/or instructions provided to you.
- h) If you were not asked to critique the capital costs of Keeyask, how did you determine that this was a key issue for GSS/GSM customers?
- i) Were you instructed to consider cancellation costs for Keeyask? And if so, by whom?
- j) If you were not asked to consider the cancellation costs for Keeyask, how did you determine that this was a key issue for GSS/GSM customers?

Response:

- a) As noted at page six of the LEI report, pursuant to Public Utilities Board Order (“PUB”) No. 70/17 the General Service Small and General Service Medium (“GSS/GSM”) customer classes were granted intervener status in the 2017/2018 and 2018/2019 General Rate Application. In addition, also pursuant to PUB Order No. 78/17, Keystone Agricultural Producers (“KAP”) were also granted intervener status in the 2017/2018 and 2018/2109 General Rate Application. Board Order No. 70/17 outlines the various issues that are in scope for these interveners. Thereafter, on September 15, 2017, the PUB granted

the blending of GSS/GSM and KAP interventions on the basis that there was sufficient community of interest between the two interveners.

The firm of Hill Sokalski Walsh Olson LLP is legal counsel for the GSS/GSM/KAP intervention. Hill Sokalski Walsh Olson LLP retained LEI to provide independent evidence to assist the PUB in understanding the views and positions of the GSS/GSM and KAP in light of Manitoba Hydro's current 2017/2018 and 2018/2019 General Rate Application and in accordance with PUB Order No. 70/17. In that regard, the firm of Hill Sokalski Walsh Olson LLP did not provide LEI with any written instructions.

LEI prepared its report using its independent judgement to provide opinion evidence that is fair, objective, and non-partisan. Further, LEI prepared its report using its independent judgment to provide opinion evidence that is related to matters that are in scope of these proceedings and within its area of expertise and to provide such additional assistance as the PUB may reasonably require in determining any matter in issue in these proceedings.

- b) LEI focused on the issues that it considers, in its independent judgement, had the greatest impact on the customer classes it was asked to represent.
- c) LEI did not meet with members or representatives of GSS/GSM/KAP stakeholders. LEI will be participating in workshops with the GSS/GSM/KAP stakeholders after the evidentiary portion of the hearing is completed.
- d) LEI did briefly interact with KAP and Legal Counsel by telephone in order to confirm which sectors were of particular interest, namely, Hog Farms, Dairy Farm automation, and irrigation.
- e) LEI believes that the issues it discusses are generally applicable to all customers.
- f) Examination of Keeyask is consistent with LEI's role as an independent advisor as well as being within the issues to be considered in the proceeding. OIC 70/17 requires the examination of major and base/sustaining capital; as outlined in the Issues List in Appendix A of OIC 70/17, cost estimating, prioritization of expenses, forecast assumptions for timing of capital expenditures and tracking of expenditures over time, and capital expenditures to reliability results are just some of the issues considered within the scope of LEI's work.

Consistent with the examination of Keeyask is Manitoba Hydro's acknowledgement, as has been stated in LEI Evidence Section 6, page 52, that OIC 92/17 requires the PUB to perform a "careful examination of capital expenditures in the context of its rate approval function." A primary driver of capital expenditure is major new generation and transmission which includes investments in the Keeyask generating station, Bipole III 500 kV High Voltage Direct Current ("HVDC") transmission line, the Manitoba-Minnesota 500 kV transmission interconnection, and the Manitoba-Saskatchewan 230 kV transmission project. Again, as LEI has stated in Section 4.1, page 35, "while Bipole III is a significant portion of future capital expenditure, and additional non-transmission

alternatives may not have been fully explored, LEI has focused on Keeyask because investment is less far along on Keeyask than Bipole III, Bipole III appears to have demonstrated reliability benefits, and Keeyask is not needed to meet Manitoba load until 2040.” It is, therefore, prudent that Manitoba Hydro discuss alternatives for addressing Keeyask in order to conduct a “careful examination.”

- g) Please see the response in part f.
- h) Please see the response in part f.
- i) Please see the response in part f.
- j) Please see the response in part f.

2.3 MH/LEI I -3

Reference:

- LEI Evidence Section 3, Page 16 of 61 – Figure 7

Request:

Please confirm that LEI's calculation of Manitoba Hydro's average commercial rate in 2017 was derived by dividing total commercial sales for the year ended March 31, 2016 by total commercial consumption for the year ended March 31, 2016 as per page 27 of Manitoba Hydro's 65th Annual Report.

Response:

No. LEI's calculation of Manitoba Hydro's average commercial rate in 2017 was derived by dividing total commercial sales for the year ended March 31, 2017 by total commercial consumption for the year ended March 31, 2017 as per page 33 of Manitoba Hydro's 66th Annual Report.¹⁸

¹⁸ Manitoba Hydro. *Manitoba Hydro-Electric Board 66th Annual Report For the Year Ended March 31, 2017*.
<https://www.hydro.mb.ca/corporate/ar/pdf/annual_report_2016_17.pdf>

2.4 MH/LEI I -4

Reference:

- LEI Evidence Section 3, Page 16 – Figure 8 and Page 17 – Figure 9

Request:

- a) Please provide the actual, proposed or projected rate increases for each of the jurisdictions identified in Figure 9 for the 2016 – 2021 period. If LEI is unable to supply this information, please advise whether it is because LEI has not made such inquiries or whether it is because such information is not publicly available;
- b) For each jurisdiction identified in Figure 9, please provide LEI’s calculations and source materials used to determine the Commercial Retail Rates for the jurisdiction.

Response:

- a) Given that there are multiple utilities in these jurisdictions, LEI considered the use of 2% a reasonable approach compared to Manitoba Hydro’s approach.
- b) To calculate the electricity rates for Canadian utilities in 2016, LEI has divided total revenues by the total amount of electricity sold, as shown in Figure 17 below. With the exception of Manitoba Hydro, these rates were then inflated by 2% for each year until 2021.

Figure 17. Calculation of electricity rates in Canadian jurisdictions

Provinces	Sales revenue (\$ millions)	Sales volume (GWh)	Electricity Rate (¢/kWh)
Manitoba Hydro	496	6,876	7.21
SaskPower	2,277	22,080	10.31
Hydro Quebec	3,842	45,500	8.44

Source: Manitoba Hydro, SaskPower, Hydro Power Annual Reports

For US utilities, LEI has utilized the average electricity rate to end-users from the Energy Information Administration. The rate is then converted from USD to CAD using an exchange rate of \$1 USD to \$1.25 CAD, as shown in Figure 18 below. Again, the rate is raised by 2% each year, in line with inflation expectations.

Figure 18. Calculation of electricity rates in US jurisdictions

States	Electricity Rate (USD ¢/kWh)	Electricity Rate (CAD ¢/kWh)
Kansas	10.74	13.43
North Dakota	9.55	11.94
Montana	10.25	12.81
Washington	8.46	10.58
Oklahoma	8.27	10.34
Michigan	10.91	13.64

Source: EIA

2.5 MH/LEI I -5

Reference:

- LEI Evidence Section 3.3, pages 17 to 18 of 61

Request:

- a) Please provide LEI's numerical calculations leading to the conclusion that electricity expenditures will rise by approximately 8%, from 1.7 - 1.9% of total gross farm expenditures.
- b) Please provide the percentage of total gross farm expenditures accounted for by electricity, as determined based on the above calculations.

Response:

- a) Figure 19 shows the percentage share of the electricity expenditures from 2010 to 2016.

Figure 19. Electricity expenditures, total gross operating expenses, and percentage share of electricity expenditures of total gross operating expenses for farms in Manitoba from 2010-2016

Year	Electricity expenditures	Total gross operating expenses	Percentage share of electricity expenditures
2010	68,802	3,808,500	1.8%
2011	72,931	3,985,890	1.8%
2012	75,119	4,410,301	1.7%
2013	81,128	4,606,358	1.8%
2014	83,968	4,601,065	1.8%
2015	85,647	4,711,486	1.8%
2016	89,073	4,658,833	1.9%

Source: *Statistics Canada.*

Figure 20 summarizes the calculations LEI carried out to obtain the change in electricity expenditures for a one-year application of the rate increase from 2016/17 to 2017/18.

Figure 20. Sample calculations for change in electricity expenditures as a result of one year of the 7.9% rate increase from 2016/17 to 2017/18

$$\begin{aligned} \text{Percentage share of electricity expenditures}_{2016/17} &= \frac{\text{Electricity expenditures}_{2016/17}}{\text{Total gross operating expenses}_{2016/17}} \times 100 \\ &= \frac{\$89,073}{\$4,658,833} \times 100 \\ &\approx 1.9119\% \end{aligned}$$

Applying 1 year of a 7.9% rate increase...

$$\begin{aligned} \text{Electricity expenditures}_{2017/18} &= \text{Electricity expenditures}_{2016/17} \times \left(1 + \frac{7.9}{100}\right) \\ &= \$96,110 \end{aligned}$$

$$\begin{aligned} \text{Total gross operating expenses}_{2017/18} &= \text{Total gross operating expenses}_{2016/17} - \text{Electricity expenditures}_{2016/17} + \text{Electricity expenditures}_{2017/18} \\ &= \$4,658,833 - \$89,073 + \$96,110 \\ &= \$4,665,870 \end{aligned}$$

$$\begin{aligned} \text{Percentage share of electricity expenditures}_{2017/18} &= \frac{\text{Electricity expenditures}_{2017/18}}{\text{Total gross operating expenses}_{2017/18}} \times 100 \\ &= \frac{\$96,110}{\$4,665,870} \times 100 \\ &= 2.0598\% \\ &\approx 2.1\% \end{aligned}$$

Therefore,

Percentage change in percentage shares of electricity expenditures_{2016/17} to 2017/18

$$\begin{aligned} &= \frac{\text{Percentage share of electricity expenditures}_{2017/18} - \text{Percentage share of electricity expenditures}_{2016/17}}{\text{Percentage share of electricity expenditures}_{2016/17}} \times 100 \\ &= \frac{2.0598\% - 1.9119\%}{1.9119\%} \times 100 \\ &= 7.737\% \\ &\approx 8\% \end{aligned}$$

Assuming the percentage share of electricity expenditures of total gross operating costs is within 1.7% to 1.9%, the percentage change in percentage shares of electricity expenditures would remain approximately 8%.

- b) Based on the above calculations, the percentage of total gross farm operating costs accounted for by electricity after one year of the 7.9% rate increase (i.e. for the year 2017/18) is approximately 2.1%, as opposed to the 1.9% prior to the application of the rate increase (i.e. for the year 2016/17).

2.6 MH/LEI I -6

Reference:

- LEI Evidence Section 3, pages 17 to 24 of 61

Preamble:

LEI calculates the “declining average operating profit” for hog, potato and dairy producers.

Request:

- a) What assumptions does LEI make in its calculations with respect to the change in price for products sold in each of the 5 years (2016 to 2021)?
- b) For each of the sectors hog, potato and dairy, please provide the year to year change in operating profit for the years 2006 to 2016 in graph form (similar to Figures 11, 12 and 13). Please provide calculations and source of data.

Response:

- a) To calculate the change in electricity costs associated with hog, potato, and dairy production, LEI assumed that net sales and costs of all components, except electricity, remained constant from 2017/18 to 2024/25.

With regards to hog farming specifically, the *Guidelines for Estimating Swine Farrow-Finish Costs 2016* estimate the costs per sow based on a group of 500 sows.¹⁹ The average Manitoba hog farm has approximately 5,000 hogs; as such, LEI assumes that the costs per farm can be estimated as the product of the costs per sow provided, 500 sows, and a factor of 10. Furthermore, LEI also assumes that the rate increase doesn't impact the cost of feed production, and thus the overall cost of feed per sow. LEI notes that this could lead to conservative estimates of the percentage share of electricity of total operating costs of a hog farm.

In the case of the irrigated potato farm calculations, the *Guidelines for Estimating Potato Production Costs 2016* estimates the costs per acre based on a potato land base of 780 harvested acres; LEI assumed that the per acre costs assume approximately the same regardless of the harvestable area.²⁰ LEI also assumed that the average harvestable area per irrigated potato farm in Manitoba is approximately equal to the harvested acres of potatoes in Manitoba in 2016 divided by the number of potato farms in Manitoba in 2016.

¹⁹ Government of Manitoba. *Guidelines for Estimating Swine Farrow-Finish Costs 2016*. November 2015.

²⁰ Government of Manitoba. *Guidelines for Estimating Potato Production Costs – 2016*. January 2016.

Furthermore, the guidelines' per acre costs also assume that 40% of the pumping is done with the use of diesel, whereas 60% is done with hydroelectricity. LEI carries this assumption forward to calculate the portion of irrigation costs that can be attributed to electricity (i.e. 60%).

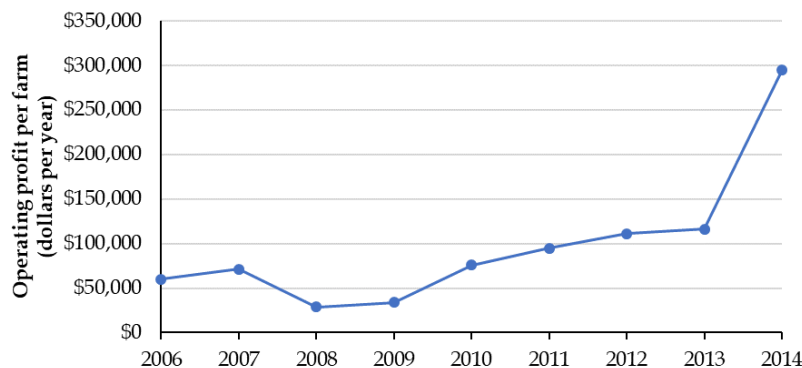
Lastly, for dairy farm calculations, the costs per farm values provided by *Statistics Canada* are based on the 325 dairy farms in Manitoba in 2010.²¹ LEI assumes that the costs per farm based on a set of 325 farms in 2010 would be approximately the same as the costs per farm based on the 399 dairy farms in Manitoba in 2016.

- b) LEI does not have access to the data specific to Manitoba in the time allocated to respond to the IRs.

However, Figure 21, Figure 22, and Figure 23 provide the year-to-year change in operating profits for the average hog, irrigated potato, and dairy farm in Canada from 2006 through to 2014, sourced from *Statistics Canada*. Data pertaining to operating profits for the three sectors was unavailable for the years of 2015 and 2016. LEI notes that these numbers are not representative of the sectors' operating profits specifically in Manitoba.

The data provided by *Statistics Canada*, including number of farms, total operating revenues, total operating expenses, and operating profit, was categorized in terms of revenue classes (i.e. \$10,000 to \$49,000, \$50,000 to \$99,999, \$100,000 to \$249,999, \$250,000 to \$499,999, and \$500,000). LEI synthesized this information into an average of all revenue classes by taking the weighted averages each year based on the number of farms in the given year. Details regarding these calculations can be found in the excel file "MH-LEI I-6".

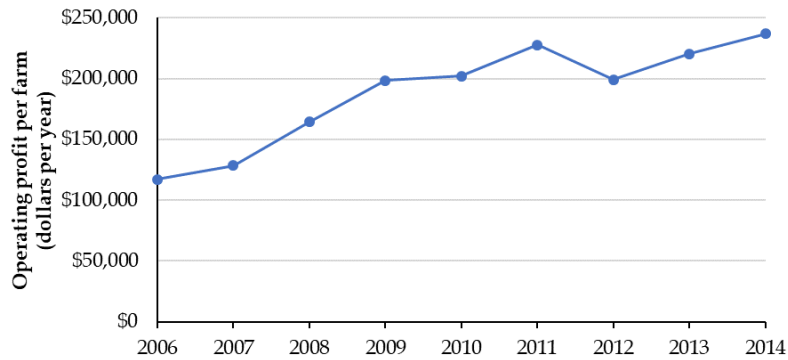
Figure 21. Operating profits per hog farm in Canada from 2006-2014



Source: *Statistics Canada*

²¹ "Statistics on Revenues and Expenses of Farms - Average Operating Revenues and Expenses by Province (or Region) for Selected Farm Types - Dairy Cattle and Milk." *Statistics Canada*. Web. October 23, 2017. <<http://www.statcan.gc.ca/pub/21-208-x/2012002/t069-eng.pdf>>

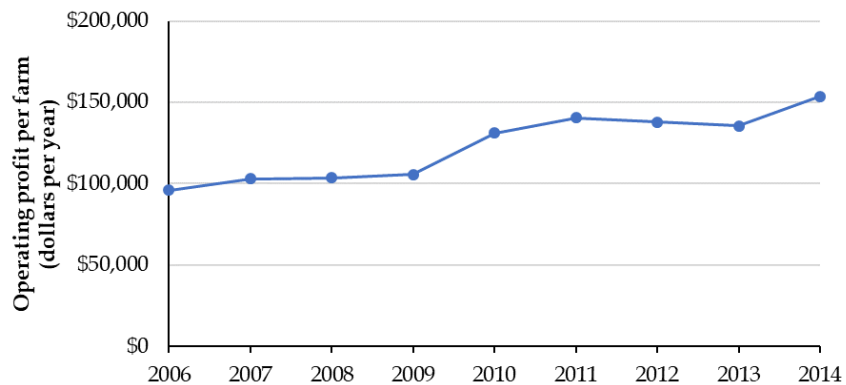
Figure 22. Operating profits per irrigated potato farm in Canada from 2006-2014



Note: LEI assumes that the operating profits per potato farm per year are approximately equivalent to that of an irrigated potato farm.

Source: Statistics Canada

Figure 23. Operating profits per dairy farm in Canada from 2006-2014



Source: Statistics Canada

2.7 MH/LEI I -7

Reference:

- LEI Evidence Section 3, page 20-23

Preamble:

Graphs which have a non-zero origin can be misleading.

Request:

Please revise the graphs in Figures 11, 12 and 13 to have a zero origin on the Y axis.

Response:

LEI has reformulated Figures 11, 12, and 13 to have a zero origin.

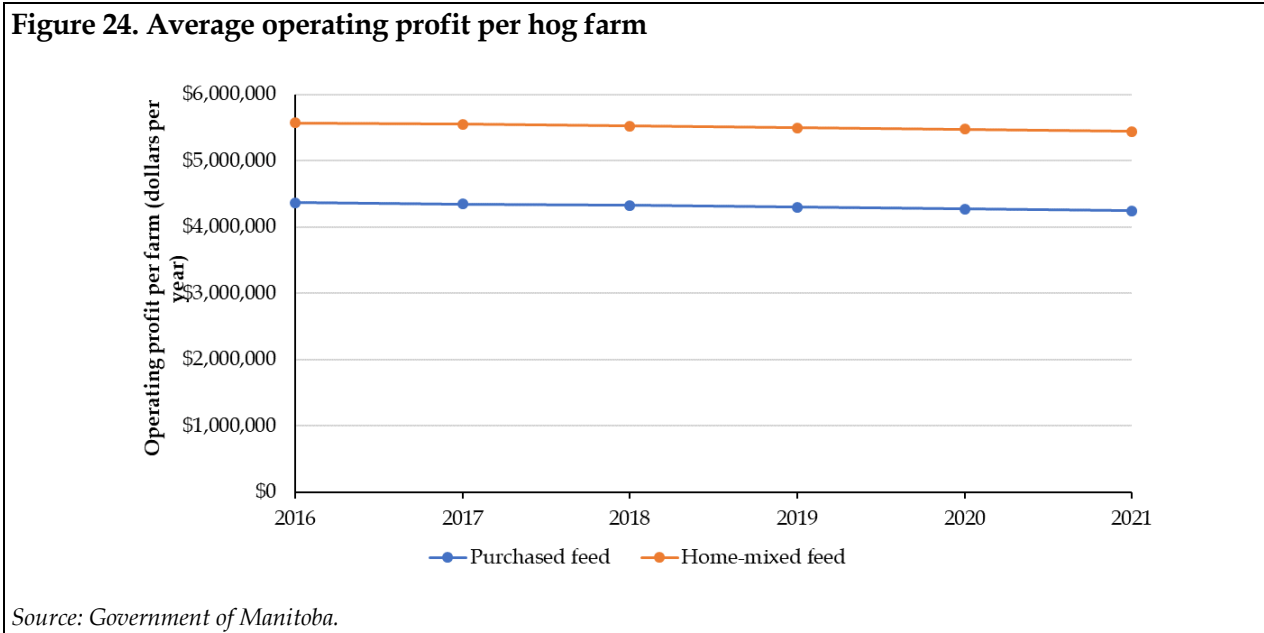
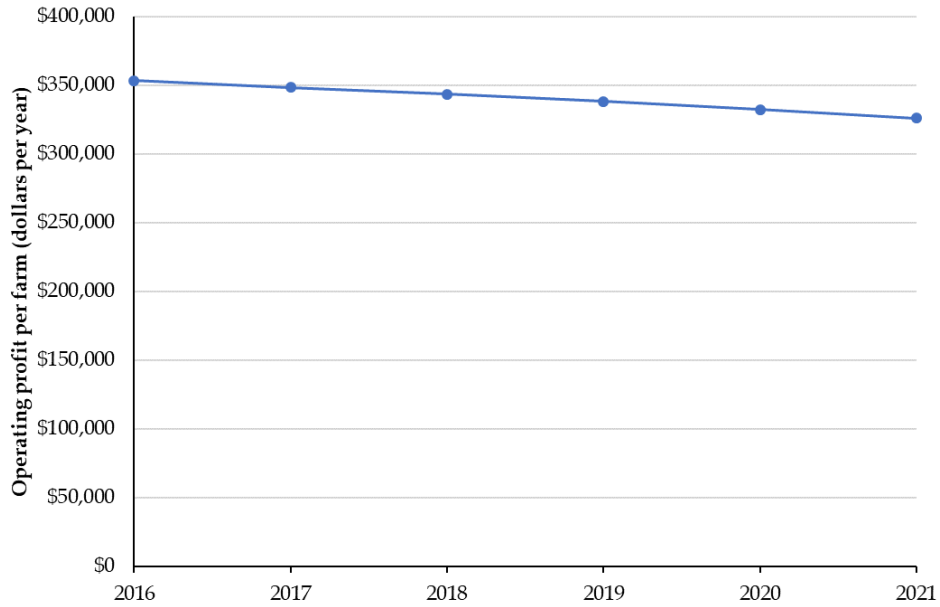
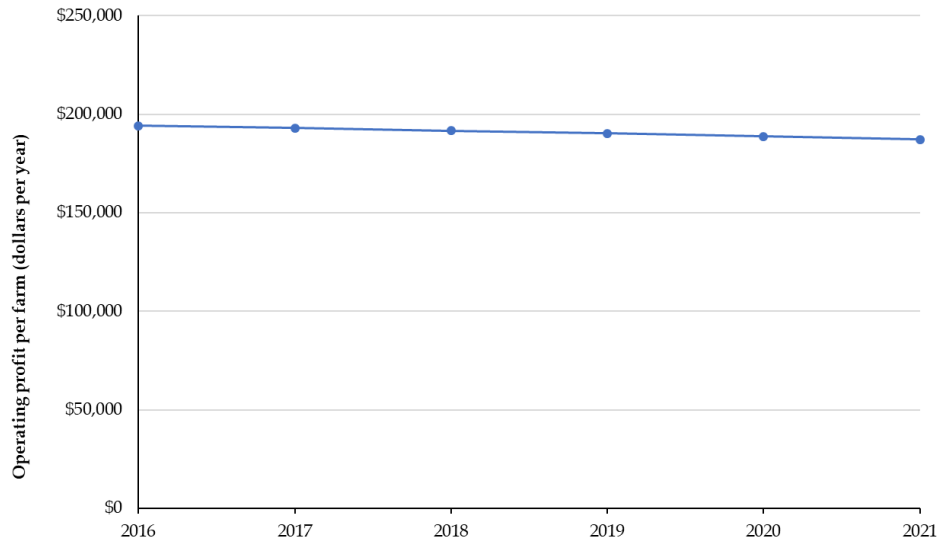


Figure 25. Average operating profit per irrigated potato farm



Source: Government of Manitoba.

Figure 26. Average operating profit per dairy farm



Source: Statistics Canada

2.8 MH/LEI I -8

Reference:

- LEI Evidence Section 3, page 36 of 61

Preamble:

With regard to the impact on typical commercial customers, at page 24, it is stated “LEI used data published from the US National Association of Convenience and Fuel Retailing (“NACS”) 2015 State of the Industry Summit reports.”

Request:

- a) What studies or information is LEI relying upon to support the assumption that the US gas station and convenience store data is a reasonable “appropriate proxy to show potential impacts on Manitoba Hydro’s general service small customers” or that the convenience store and fuel retailing industries in the US and Canada are roughly analogous with respect to GSS/GSM customer costs and revenues?
- b) What jurisdictions were surveyed in the NACS Study and what are the applicable electric rates in those jurisdictions?

Response:

- a) LEI considers the convenience store example as comparable to GSS class connected at 51 kVA with a power factor of 90%.²² Given those conditions, a GSS customer would consume 16,753 kWh of electricity per month with a load factor of 50%, and 25,139 kWh per month with a 75% load factor.²³ The average convenience store in Minnesota has an energy use intensity of 94 kWh/ft², given an average size of 2,768 ft², it would consume 21,683 kWh of electricity monthly.^{24,25} Since the monthly consumption of the average convenience stores falls within the 16,753 kWh to 25,139 kWh range, LEI believes it is an appropriate proxy for the GSS customer class. LEI does not assume that convenience stores make up a majority of GSS customers, rather it is an example of a type of GSS customer.

²² Manitoba Hydro. *Appendix 9.6 Bill Comparisons*. September 2017.

²³ Ibid.

²⁴ Minnesota Department of Commerce. *Convenience Store Energy Efficiency*. November 2013.

²⁵ The Association for Convenience and Fuel Retailing. *Scope of the industry*. 2017.

Statistics Canada reported the operating gross margin for convenience stores as 21.5% in Canada, similarly to the US, NACS reported an operating gross margin of 28% for convenience stores.^{26,27}

- b) The NACS survey accounts for all jurisdictions across the United States. The commercial electricity rates for the top 10 jurisdictions shown in Figure 1 below, using data from EIA's average commercial retail price as of July 2017.²⁸

Figure 1. Comparison of commercial retail rates in states with the most convenience stores

State	US rates	CAD rates
Texas (15,671 stores)	8.29	10.36
California (11,774 stores)	17.69	22.11
Florida (9,930 stores)	9.49	11.86
New York (8,570 stores)	16.11	20.14
Georgia (6,761 stores)	10.09	12.61
North Carolina (6,306 stores)	8.82	11.03
Ohio (5,635 stores)	9.75	12.19
Michigan (4,833 stores)	10.91	13.64
Pennsylvania (4,737 stores)	8.90	11.13
Illinois (4,737 stores)	8.83	11.04
Manitoba* (731 stores)	7.29	9.1125

Note: Assumed exchange rate of 1.25 CAD=1 USD

Manitoba's store count data from 2011

Source: US National Association of Convenience and Fuel Retailing, EIA, Manitoba GRA, Canadian convenience stores association

Retail electricity rates for the bottom three states are outlined in Figure 2 below.

²⁶ Statistics Canada. *Retail trade, operating statistics*. 2012.

²⁷ NACS. *How convenience stores work and their contributions to communities*. July 2017.

²⁸ EIA. *Electric Power Monthly: Table 5.6.A. Average Price of Electricity to Ultimate Customers by End-Use Sector*. August, 2017.

Figure 2. Comparison of commercial retail rates in states with the least convenience stores

State	US rates	CAD rates
Alaska (217 stores)	11.54	14.43
Delaware (348 stores)	9.43	11.79
Wyoming (354 stores)	9.77	12.21
Manitoba* (731 stores)	7.29	9.1125

Note: Assumed exchange rate of 1.25 CAD=1 USD

Manitoba's store count data from 2011

Source: US National Association of Convenience and Fuel Retailing, EIA, Manitoba GRA, Canadian convenience stores association

2.9 MH/LEI I -9

Reference:

- LEI Evidence Section 3.4, page 25 of 61

Preamble:

With respect to the impact on typical commercial customers, at page 25 it is stated “LEI relied on data from Statistics Canada and Smith Travel Research data completed for the hotel sector in the US.”

Request:

- a) What information was derived from Canadian Statistics Canada data and what information was derived US Smith Travel Research/HOST data?
- b) What studies or experience are LEI relying on to conclude that US hotel sector data is a reasonable proxy to show potential impacts in Manitoba?
- c) What jurisdictions were surveyed in the Smith Travel/HOST studies and what are the applicable electric rates in those jurisdictions?

Response:

- a) Statistics Canada data was used to benchmark against calculated operating gross margins from US Smith Travel Research/HOST data. Since the last available dataset for operating gross margins from Statistics Canada was 2012, LEI found it appropriate to use US Smith Travel Research/ HOST data as it provides a more up to date and complete dataset.
- b) LEI considers the hotel example is an appropriate proxy because it is comparable to GSM customers connected at 500 kVA with a power factor of 90%.²⁹ Given those conditions, a GSM customer would consume 82,125 kWh of electricity per month with a load factor of 25%, and 164,250 kWh per month with a 50% load factor.³⁰ According to the 2012 Commercial Building Energy Consumption Survey, the average hotel in the US has an energy use intensity of 14 kWh/ft². Given an average size of 94,250 ft² of floor space, hotels on average consume 109,958 kWh of electricity monthly.^{31,32} Since the monthly

²⁹ Manitoba Hydro. *Appendix 9.6 Bill Comparisons*. September 2017.

³⁰ Manitoba Hydro. *Appendix 9.6 Bill Comparisons*. September 2017.

³¹ Michaels Energy. *Convenience Store Energy Efficiency*. 2013

³² Moselle, Ben. *National Building Cost Manual*, 40th ed. 2016

consumption of the average hotels falls within the 82,125 kWh to 164,250 kWh range, LEI believes it is an appropriate proxy for the GSM customer class. LEI does not assume that hotels make up a majority of GSM customers, rather it is an example of a type of GSM customer.

- c) The HOST Almanac 2017 accounts for all jurisdictions across the United States. The retail electricity rates for the top 10 states with the largest supply of hotel rooms is listed in Figure 27 below.³³

Figure 27. Comparison of retail electricity rates in states with most supply of hotel rooms

States	US rates	CAD rates
Nevada	7.92	9.90
Florida	9.49	11.86
Illinois	8.83	11.04
District of Columbia	11.09	13.86
New York	16.11	20.14
California	17.69	22.11
Georgia	10.09	12.61

Source: EIA, Smith Travel Research

Note: Assumed exchange rate of 1.25 CAD=1 USD

³³ Smith Travel Research. *Total United States: Top 10 Markets Supply*. August 2013.

2.10 MH/LEI I -10

Reference:

- LEI Evidence Section 4, page 34 of 61;
- Order 70/17, Appendix A, page 37

Request:

Please identify how Section 4 of the London Economics Report, entitled Capital Plan relates to the Scope of the hearing as identified in Order 70/17.

Response:

Please see LEI's response to MH/LEI I - 2 part f.

2.11 MH/LEI I -11

Reference:

- LEI Evidence Section 5, pages 44 to 48 of 61, Figure 28

Preamble:

LEI states that “To explore Manitoba Hydro’s performance on an illustrative basis against a selection of peer utilities, LEI identified several Key Performance Indicators (“KPIs”).” LEI goes on to compare these KPIs for Manitoba Hydro to seven other utilities.

Request:

- a) For each utility identified in Figure 28, please provide LEI’s assumptions regarding number of employees, identify LEI’s source of information and all data supporting the calculation of the metrics as outlined in Figure 29.
- b) Please provide LEI’s understanding of any major capital projects undertaken by the utilities identified in Figure 28 during the time period associated with employee count data and describe LEI’s understanding of what portion of utility staff are devoted to major capital project work. If not known, please acknowledge the simplifying assumption that each utility has the same capital activity profile.
- c) Please provide LEI’s understanding of how and to what extent the identified utilities use subsidiaries to perform operations comparable to those performed by Manitoba Hydro internal staff (e.g. export marketing function). If not known, please acknowledge the simplifying assumption that each utility has the same operating framework.
- d) Please provide LEI’s understanding of how and to what extent the identified utilities use contractors to perform operations comparable to those performed by Manitoba Hydro internal staff (e.g. Overhead line maintenance). If not known, please acknowledge the simplifying assumption that each utility has the same operating framework.

Response:

- a) LEI used the total number of full-time employees as indicated on the utilities’ 2016 annual reports without adjustments, with the exception of the 900 employees removed from Manitoba Hydro’s 6,411 full-time employees, as per their workforce reduction plan. The numbers of full-time employees were obtained from the utilities’ annual reports; please refer to LEI’s response to PUB/GSS-GSM-KAP-9, part c for a list of the annual reports used. All data supporting the calculations of metrics in Figure 29, along with the sources used, can be found in the Excel file “MH LEI I-12 Part a”.
- b) LEI does not believe that the proportion of employees devoted to major capital work should be viewed as an extraordinary factor in considering a utility’s productivity. Indeed, decisions about whether to outsource or perform work using internal resources

may be a contributor to relative productivity levels, as is the timing and magnitude of major capital projects; utilities should be encouraged to make the choice that provides the best value to ratepayers. LEI does not regard this as a “simplifying assumption.” LEI emphasizes, however, that the point of its illustrative analysis was to suggest that more detailed evidence on Manitoba Hydro relative productivity would be an important consideration in determining the appropriateness of Manitoba Hydro’s operating costs.

- c) LEI does not believe that the location of employees in the corporate structure should be viewed as an extraordinary factor in considering a utility’s productivity. Indeed, decisions about whether to outsource work to a competitive, non-regulated subsidiary or to use internal resources may be a contributor to relative productivity levels, and utilities should be encouraged to make the choice that provides the best value to ratepayers. LEI does not regard this as a “simplifying assumption.” LEI emphasizes, however, that the point of its illustrative analysis was to suggest that more detailed evidence on Manitoba Hydro relative productivity would be an important consideration in determining the appropriateness of Manitoba Hydro’s operating costs.
- d) LEI does not believe that the use of contractors relative to utility employees should be viewed as an extraordinary factor in considering a utility’s productivity. Indeed, decisions about whether to outsource work or to use internal resources may be a contributor to relative productivity levels, and utilities should be encouraged to make the choice that provides the best value to ratepayers. LEI does not regard this as a “simplifying assumption.” LEI emphasizes, however, that the point of its illustrative analysis was to suggest that more detailed evidence on Manitoba Hydro relative productivity would be an important consideration in determining the appropriateness of Manitoba Hydro’s operating costs.

2.12 MH/LEI I -12

Reference:

- LEI Evidence Section 5, pages 46 to 48 of 61

Request:

- a) For each utility referenced in Figures 30, 31, 32 and 33, please provide the data (and source) used to perform LEI's calculation of the Key Performance Indicators and provide LEI's calculation of each Performance Indicator for each utility.
- b) What vertically integrated utilities, if any, use the following metrics:
 - i. Installed MW of capacity per employee
 - ii. Total MWh of throughput per employee
 - iii. Kilometers of wires per employee
- c) Please provide the evidence that suggest these are the appropriate metrics to assess performance in the utilities sector.

Response:

- a) Figure 29 in LEI Evidence Section 5, page 45 displays the formulas used in the calculations. Please refer to the attached Excel file "*MH LEI I-12 Part a*" for data used in performing said calculations for Key Performance Indicators in Figures 30, 31, 32, and 33. Results are also provided in said Excel file.
- b) LEI has presented these metrics as partial productivity measures which can provide an indication of relative efficiency. LEI believes that Manitoba Hydro should be required to submit a comprehensive productivity analysis to justify its operating cost structure.
- c) LEI believes that Manitoba Hydro should be required to perform a total factor productivity analysis to justify its operating cost structure. The metrics provided by LEI are illustrative, and are intended to demonstrate the need for further analysis.