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OFFICE OF THE  
DIRECTOR OF RESIDENTIAL  
RENTAL PROPERTY

Ms. Cheryl Mosher  
Island Regulatory & Appeals Commission  
PO Box 577  
Charlottetown PE C1A 7L1

Dear Ms. Mosher:

**UE 22503 – Application for an Order to Approve Stage 1 Rate Design Changes  
Response to Interrogatories from Roger King**

Please find attached the Company's updated response to Interrogatory No. 5 from Roger King submitted on August 23, 2021 as well as our response to interrogatory No. 3 submitted on September 8, 2021 with respect to the Company's Application to Approve Stage 1 Rate Design Changes filed with the Commission on May 14, 2021. An electronic copy will follow.

Yours truly,

MARITIME ELECTRIC

A handwritten signature in blue ink that reads "Gloria Crockett".

Gloria Crockett, CPA, CA  
Manager, Regulatory & Financial Planning

GCC30  
Enclosure

All our energy.  
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Via email: [randjking@pei.sympatico.ca](mailto:randjking@pei.sympatico.ca)

October 15, 2021

Mr. Roger King  
519 Simpson Mill Rd  
Hunter River PE C0A 1N0

**UE 22503 – Response to Interrogatories regarding  
Application to Approve Stage 1 Rate Design Changes**

Please find attached the Company's updated response to your interrogatory No. 5 submitted on August 23, 2021 as well as our response to interrogatory No. 3 submitted on September 8, 2021 with respect to the Company's Application to Approve Stage 1 Rate Design Changes filed with the Commission on May 14, 2021.

Yours truly,

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Gloria Crockett, CPA, CA  
Manager, Regulatory & Financial Planning

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Enclosure

IR-5 Farm Study – page 22: Recognizing the Commission’s concern with declining cost energy blocks why does MECL continue to describe the [Small Industrial] and [General Service] tariffs in terms of first and second blocks? Would it not serve customers and the Commission better if the following descriptions were adopted:

- a. The [Small Industrial] tariff comprises a fixed Energy (kWh) unit cost and a fixed Demand (kW) cost independent of the amount of energy used each month. (Contrary to the page 22 claim that it “is better for a wide range of load factors”, it simply results in a lower cost for high load factors and a higher cost for poor load factors).

*Additional Clarification added by Mr. King on October 4, 2021:*

*The Small Industrial tariff has three components; for 2021 these are:*

- 1) *\$7.46/KW/month*
- 2) *17.94c/KWh for first 100KWh/KW/month*
- 3) *9.1c/KWh for the balance of monthly energy*

*The billing amounts for components 1) and 2) are both determined by the monthly KW Demand and can be combined such that the tariff has effectively just two components as I described in IR-5:*

- 1) *Demand @ \$16.30/KW/month*
- 2) *Energy @ 9.1c/KWh/month*

*My alternative interpretation of the tariff calculates exactly the same billing amount but is, in my opinion, less complicated and conveys to the customer the actual price for both Energy and Demand. The IR-5-a response insists on merging these two important and separate billing components into an energy (KWh) cost in a somewhat confusing way.*

- b. The [General Service] tariff is inequitable because it is applied to a wide range of customers’ energy consumption and demand loads. Some customer equity is achieved by having both a declining second energy block (5,000 kWh) and the first 20 kW demand exception but extending the application of this tariff is not warranted. (Clearly with 75% of [General Service] customers not being metered for demand, which drives the high [revenue-to-cost ratio] of 1.21, the application of the [General Service] tariff has to change)

**Revised Response:**

- a. Higher load factor customers have a lower average cost per kWh (total bill/number of kWh used) because their site-related and demand-related costs are spread over a larger number of kWh. Similarly, lower load factor customers have a higher average cost per kWh because their site-related and demand-related costs are spread over a smaller number of kWh.

The interpretation of the Small Industrial rate structure as \$16.30/kW for demand and

**Rate Structure Changes  
Residential and other Ratepayers (UE22503)  
Interrogatories from Roger King (Aug. 23, 2021)**

**Maritime Electric**

\$0.0910/kWh for all energy, as indicated in the clarification of the original interrogatory, can be considered appropriate for customers with medium to high load factors. This interpretation also corresponds to the Large Industrial rate structure, where customers typically have high load factors (the current Large Industrial rate structure is \$14.50/kWh for demand and \$0.0740/kWh for all energy).

However, the reason for the two energy block structure in the Small Industrial rate is to provide a better match between revenue and cost for low load factor customers. A monthly energy usage of 100 kWh per kW of demand corresponds to a monthly load factor of approximately 14 per cent (100 hours/720 hours in a month x 100 = 14 per cent). The underlying assumption is that customers with load factors of less than 14 per cent will on average have proportionally less load at system peak than higher load factor customers, and thus incur proportionally less demand-related costs. In addition, low load factor loads are often intermittent. For example, a grain dryer generally operates for six hours a day for nine days during a month, which equates to only 54 hours of operation during a month. Therefore, the two energy block structure is appropriate as it collects less than a full contribution toward demand-related costs for customers with load factors less than 14 per cent.

- b. Maritime Electric agrees that the current General Service tariff is inequitable as evidenced by its revenue-to-cost ratio. As discussed in response to IR-9, the Company will continue to analyze General Service load data and usage patterns before making a recommendation on further changes to this rate class.

**Appendix C– Preliminary Residential Class Load Study Results:**

IR-3 The Farm Study (Appendix A) shows the monthly energy of >5000KWh farm population as 520 for 2018 to 2019 and 528 for 2019 to 2020 whereas Table 3/Appendix C shows 418 farms. Appendix C explains that this difference is the peak energy use for these 100+ farms is not during the month of January and therefore the data is spread between Cohorts 1 to 4. For a complete understanding of the Farm segment please expand the extension table (Table 4?) as requested in question 2) for a new table (Table 5?) to include the 100+ farms.

***Response:***

An extended Table 3 from IR-2 is provided in Attachment 1 to this response.

Most of the 110 farm customers in the 0 to 5,000 kWh cohort are potato farms. As discussed in Appendix C to the Application, potato farms can have large variation in energy usage over the course of the year and relatively lower energy usage in January for several reasons:

- The amount of potatoes in storage is highest at the end of the harvest season in late October and early November. From then, through to the end of summer, there is a drawdown of potato stocks to supply processing requirements, which is the largest use of PEI potatoes. This can impact their energy usage in two ways:
  - By the beginning of January, potato stocks in warehouses are declining and, hence, the corresponding energy usage to maintain optimal air quality and temperature is also declining. Potato warehouses that rely on just ventilation with ambient air to maintain storage air quality are normally empty by spring.
  - Warehouses with potato stock remaining in late spring and early summer require air conditioning to maintain proper air quality and temperature and therefore have their highest energy usage in late spring and in summer.

How quickly potato warehouse stock is drawn down is largely dependent on market conditions and the demand for supply from processors. This can vary greatly from year to year. By extension, the revenue-to-cost ratio of this group of customers may vary from year to year.

- Some potato farms, including those in this cohort, operate irrigation pumps during the growing season that are not used during the winter months.

<b>EXCERPT OF TABLE 3</b>											
<b>Analysis of Farms in Year Round Cohorts</b>											
<b>(For 12 month period March 2019 to February 2020)</b>											
<b>Residential Year Round (Rate Codes 110 &amp; 130)</b>											
<b>January Billing Cohorts:</b>	<b># Customers</b>	<b>CP ( MW )</b>	<b>NCP ( MW )</b>	<b>Energy ( GWh )</b>	<b>2017 Allocated Costs (000s)</b>					<b>2017 Base Revenue (000s)</b>	<b>RTC ( % )</b>
					<b>Customer Related</b>	<b>CP Demand Related</b>	<b>NCP Demand Related</b>	<b>Energy Related</b>	<b>Total</b>		
Usage 0 to 5,000 kWh	110	0.4	0.6	4.3	\$ 32	\$ 74	\$ 32	\$ 359	\$ 497	\$ 544	109.4
Usage 5,001 - 9,600 kWh	195	2.3	3.5	12.1	58	424	188	1,003	1,673	1,440	86.1
Usage 9,601 - 17,400 kWh	137	2.6	3.0	13.9	40	480	161	1,154	1,835	1,575	85.8
Usage 17,401 - 35,200 kWh	69	2.0	3.1	10.7	20	369	167	885	1,441	1,177	81.6
Usage 35,201 - 100,000 kWh	17	0.9	1.1	5.8	5	166	59	483	714	625	87.5
<b>Combined Total</b>	<b>528</b>	<b>8.2</b>	<b>11.3</b>	<b>46.8</b>	<b>\$ 156</b>	<b>\$ 1,513</b>	<b>\$ 608</b>	<b>\$ 3,884</b>	<b>\$ 6,161</b>	<b>\$ 5,360</b>	<b>87.0</b>