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MARITIME ELECTRIC
A FORTIS COMPANY

January 11, 2022

Hand Del 3:31 pm MLA

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

Dear Ms. Mosher:

UE22503 - Application for an Order to Approve Stage 1 Rate Design Changes
Response to Additional Interrogatories from Synapse Energy Economics, Inc.

Please find attached the Company's response to the additional Interrogatories filed by Synapse Energy Economics, Inc. with respect to the Company's Application for an Order to Approve Stage 1 Rate Design Changes. An electronic copy will follow.

Yours truly,

MARITIME ELECTRIC

Gloria Crockett

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Manager, Regulatory & Financial Planning

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IR-1 Please refer to MECL's response to IR-10 from Synapse Energy Economics, Inc., in which MECL provided farm customer interval meter data for 2018-2020.

a. Please confirm that the data provided in response to this IR reflect hourly consumption, and not consumption over some other interval (e.g., 15-minute intervals).
b. Please confirm that the data provided in response to this IR are the same data that were analyzed in the Farm Study. If yes, please also confirm that the metered accounts are those of "larger" farms, as indicated in the Farm Study (see page 5 of the Farm Study).
c. Using the data provided by MECL in response to this IR, Synapse has calculated that the average monthly consumption for 2020 for the sample of 87 meters is approximately 959 kWh. Please confirm that this result is accurate, and please further explain why, if the foregoing calculation is accurate, the average consumption is so low for this sample for 2020 given that the focus was on larger farms.

Response:

a. The data provided in response to IR-10 reflects hourly consumption.

b. The data provided in response to IR-10 was the data used in the Farm Study. Maritime Electric confirms that the metered accounts are those of the "larger" farms as indicated in the Farm Study.

c. No, the average monthly consumption of the 87 meters sampled in 2020 is 12,371 kWh. The calculation that produces the value of 959 kWh includes only the meter base recorded reading, and does not reflect the meter multiplier[1] that is associated with each of the 87 meters. The multiplier is used to convert the meter base recorded reading into kWh units.

An update to the previously provided Excel spreadsheet labelled *IR-10 – Farm Data 2019-2020.xlsx* with the supporting calculations of the 2020 monthly average consumption is provided to show the supporting calculations for this response.

[1] The multiplier for each meter was provided in Maritime Electric's response to IR-10, spreadsheet 'Synapse IR-10 – Farm Data Jul2018 to Dec2018.xlsx', worksheet 'All', row 24.

IR-2 Refer to MECL's Application for an Order to Approve the Stage 1 Rate Design Changes filed on May 14, 2021 ("Application"), Appendix A ("Farm Study"). On page 25 of the Farm Study, it is noted that there are approximately 2,200 Residential accounts that are identified as farms by SIC code, whereas in Table 3 of the Application (on page 24), there are reported to be 418 farms with average monthly consumption exceeding 5,000 kWh. Please confirm that the 1,782 farms with monthly consumption of 5,000 kWh or less are included in the totals for the other cohorts in Table 3.

Response:

The approximately 2,200 Residential accounts that have farm SIC codes minus the 418 farms with greater than 5,000 kWh usage for January 2020 are included in the other cohorts in Table 3. The 2,200 number is an estimate for 2020, based on the count of 2,094 for 2017. No analysis has been done of Residential accounts with farm SIC codes for the year 2020.

Table 3
Preliminary Residential Load Study - Analysis of Year-Round Residential Cohorts

Cohorts	Number of Customers	Energy Sales (GWh)	2017 Allocated Cost ($ 000s) A	2017 Base Revenue ($ 000s) B	RTC Ratios (%) C = B/A
1. Usage up to 2,300 kWh	53,474	410.1	73,136	70,902	96.9
2. Usage 2,301 kWh to 5,000 kWh	7,017	150.6	26,102	21,367	81.9
3. Domestic > 5,000 kWh	293	11.6	2,070	1,462	70.7
4. Farms > 5,000 kWh	418	42.5	5,663	4,816	85.0
5. Other > 5,000 kWh	45	10.5	1,752	1,140	65.1
Combined	**61,247**	**625.3**	**108,722**	**99,688**	**91.7**

IR-3 Refer to Table 3 on page 24 of the Application for an Order to Approve the Stage 1 Rate Design Changes filed on May 14, 2021.

a. Please provide the number of farm customers included in Cohort 1 (Usage up to 2,300 kWh) and, separately, the number of farm customers included in Cohort 2 (Usage 2,301 to 5,000) kWh.
b. Please explain whether the values in column B ("2017 Base Revenue ($000s)") reflects revenues calculated using March 2019 – February 2020 billing determinants, or something else.
c. Please provide the workpapers showing the calculation of Table 3 values in native format.

Response:

a. The cohorts in Table 3 were determined by January 2020 billing kWh usage. Of the 523 farms in the 2020 Cost Allocation Study ("CAS"), 29 of these farms are in Cohort 1, 76 are in Cohort 2, and 418 are in the "Farms > 5,000 kWh" cohort. No analysis has been done of the Residential accounts with farm SIC codes for the March 2019 to February 2020 period or for the year 2020.

b. The 2017 Base Revenue amounts in column B were calculated using March 2019 – February 2020 billing determinants.

c. The calculation of the values in Table 3 is provided in the attached spreadsheet labeled *Synapse December 2021 IR 3 - Table 3 Supporting Calculations*.

IR-4 Refer to Table 4 on page 25 of the Application for an Order to Approve the Stage 1 Rate Design Changes filed on May 14, 2021.

a. Please explain in detail how the change in residential allocated costs from the preliminary residential load study results was calculated. For example, please explain whether the 2017 cost allocation study unit costs were multiplied by the March 2019 – February 2020 billing determinants, or whether the allocation factors in the 2017 Cost Allocation Study were modified.
b. Please provide the workpapers showing the recalculation of the residential allocated costs in native format.

Response:

a. As per Table 3 of the Rate Design Study, the Preliminary Residential Load Study results indicate that the combined revenue-to-cost ("RTC") ratio of all year-round residential cohorts is 91.7 per cent. The total 2017 base revenue for all Residential year-round customers of $90,728 thousand was divided by the 91.7 per cent to determine the adjusted 2017 allocated costs of $98,950 thousand to Residential year-round customers.

The difference between the original 2017 allocated costs to year-round residential of $100,178 thousand less the adjusted 2017 allocated costs of for year-round Residential customers of $98,950 thousand is $1,228 thousand. This is the amount of the 2017 costs allocated from year-round Residential to General Service.

This reduction in allocated costs is allocated between non-farm year-round Residential and farm year-round Residential based on their proportionate share of their total original 2017 allocated costs. For non-farm year-round Residential, the 2017 allocated costs were reduced by $91,806/($91,806+$8,372) X $1,228 = $1,125 thousand. For year-round farm Residential, the 2017 allocated costs were reduced by $8,372/($91,806+$8,372) X $1,228 = $103 thousand.

The offsetting increase in 2017 costs allocated to General Service was also allocated to year-round and seasonal General Service based on their proportionate share of their total original 2017 allocated costs. For General Service, the 2017 allocated costs were increased by $47,880/($47,880+$1,565) X $1,228 = $1,189 thousand. For General Service Seasonal, the 2017 allocated costs were increased by $1,565/($47,880+$1,565) X $1,228 = $39 thousand.

b. The working papers to support this recalculation were provided in the response to IR-8 of the previous Synapse IRs filed on October 1, 2021, in the excel file labelled *Synapse IRs - 8a 24 and 25 - Application Tables and Charts.xlsx* in the tab labelled Table 4.

IR-5 Refer to Table 2 on page 6 of the Farm Study. Please confirm that the total number of residential accounts reported for each farm type, in the first row, is inclusive of the number of farms indicated in the second row.

Response:

The total number of Residential accounts shown for each farm type in the first row is inclusive of the number of farms shown in the second row. The reason that there are more accounts than farms is that some farms take electricity service at more than one location. For example, a potato farm may have more than one warehouse, with each warehouse metered separately. In Maritime Electric's billing system, there is a separate account for each meter.

IR-6 Refer to MECL's response to IR-9 from Synapse Energy Economics, Inc; Table 7 from the 2017 Cost Allocation Study; and Table 7 from the 2020 Cost Allocation Study. The table below compares the number of sites for selected customer classes in the 2017 Cost Allocation Study and the 2020 Cost Allocation Study.

	Sites		
Class	**2017 CAS**	**2020 CAS**	**Change**
Residential	57,286	61,785	4,499
Residential (S)	7,504	7,709	205
Farm	2,094	523	(1,571)
General Service 1	7,191	7,487	296
General Service 1 (S)	1,704	1,690	(15)
Small Industrial	291	288	(3)

a. Please provide a detailed accounting of the change in the number of farms from 2017 to 2020. That is, provide the number of farms that were reclassified into each class, as well any reduction in the overall number of farms.
b. Please explain the basis for any changes in classification of customers as "farms" to other classes, and provide all supporting data and analysis to justify such changes.
c. MECL's response to IR-9 states that farms with consumption of less than or equal to 5,000 kWh per month are included in the 523 sites in the Cost Allocation Study, and that only 418 farms have consumption greater than 5,000 kWh per month. Please explain whether including farms with usage less than or equal to 5,000 kWh in the "farm" class in 2020 is consistent with the approach described in response to (b) above.
d. Please provide a revised Table 7 for the 2020 Cost Allocation Study that uses the same classification scheme used in the 2017 Cost Allocation Study for farm customers (i.e., classifying such customers as "farms" rather than as residential or other types of customers.)
e. Please provide a revised Table 8 for the 2020 Cost Allocation Study that uses the same classification scheme used in the 2017 Cost Allocation Study for farm customers (i.e., classifying such customers as "farms" rather than as residential or other types of customers.)
f. Please provide a revised Table 11 for the 2020 Cost Allocation Study that uses the same classification scheme used in the 2017 Cost Allocation Study for farm customers (i.e., classifying such customers as "farms" rather than as residential or other types of customers.)

Response:

a. The 2,094 farms in the 2017 Cost Allocation Study ("CAS") and the 523 farms in the 2020 CAS were identified in Maritime Electric's billing system using different approaches. When the 2017 CAS was prepared, the SIC code assigned to each account was used to identify farms as a subset of the Residential class. As a result, 2,094 Residential accounts with a farm SIC code were grouped separately as "Farms" for the 2017 CAS.

Subsequent examination of these accounts in the initial stages of the Farm Study showed that many of the Residential accounts with a farm SIC code were either small farming operations or were no longer farming.

Given that the primary focus of the Farm Study was to assess the impact on farms of eliminating the declining second block energy charge[2] in the Residential Rate, a separate analysis was done to identify the larger farms who would be thus impacted. This analysis identified the 523 farms that made up the farm subset of the Residential class in the 2020 CAS. The analysis was based on publically available lists of farming operations, and included a detailed analysis of Residential accounts using more than 5,000 kWh per month. Hence, some of these 523 farms have a non-farm SIC code, as shown in the table below. All of the farms in the table are year-round Residential class accounts. No analysis was done of Residential accounts with a farm SIC code for the 2020 CAS.

Table for IR-3a
Comparison of Number of Farm Customers

	2017 CAS	2020 CAS	Change
Residential with farm SIC code	2,094	419	-1,675
Residential with non-farm SIC code	0	104	104
Total	**2,094**	**523**	**-1,571**

b. There no changes to the classification of farms to other classes. The difference in the number of Residential accounts identified as farms in 2017 versus 2020 is the result of a different approach used to identify large farms in 2020 as discussed in our response to a. above.

c. Almost all of the 523 farms shown in the 2020 CAS had greater than 5,000 kWh usage for at least one month during the year. The cohorts in Table 3 on page 24 of the Company's May 14, 2021 Application were determined by their January 2020 billing kWh usage. Of these 523 farms, 418 had greater than 5,000 kWh usage for January 2020.

d. The Company asserts that the 2020 CAS presented the large and small farm results in the most accurate way possible, given the data that has been collected on those customers. No analysis has been done for 2020 of Residential accounts by farm SIC code for the reasons explained herein.

The 2,094 customers in 2017 identified as 'Farm' customers were Residential customers with farm-affiliated SIC codes, which identified these customers in our systems as 'farms'. Included were all sizes of farms, from small to large. In the 2017 CAS, the impact of the 'Farm' customers was estimated from the monthly billed energy and demand amounts, where available, for the customers. These estimated amounts were backed out of the Residential class amounts, which lead to the Residential values used in the 2017 CAS.

The 523 customers identified as 'Farm' customers in the 2020 CAS were specific farm customers. Almost all had greater than 5,000 kWh energy consumption in a given month

[2] The current approved rate structure includes a lower per kWh charge for residential consumption over 2,000 kWh per month.

in 2020, and the remainder were identified through cross referencing known farm operations with customer accounts. These 523 customers are considered the 'large' farms in Maritime Electric's system. The Farm Study undertaken by the Company used a subset (87 in total) of these 523 farms to determine the usage patterns of the Island's large farms and assess the impact on farms of eliminating the declining second block energy charge. It was the information from this subset of large farms that determined the coincident peak ("CP") and non-coincident peak ("NCP") values for the 'Farm' category in the 2020 CAS.

The Residential Load Study is determining the usage patterns of the Company's Residential class customers with monthly usage less than 5,000 kWh[3], and as such does not include the Farms being analyzed in the Farm Study. The Residential CP and NCP figures used in the 2020 CAS were developed from Residential Load Study data analysis.

The Company could apply the same methodology used in 2017 on 2020 data. This will require significant work to capture the customers and redo the CAS with all customers with a farm SIC code designated as 'farms'. However, the results would be less accurate than what has been supplied in the 2020 CAS for the following reasons:

- Large farm system usage was captured through the Farm Study and the results applied to the large farms in the 2020 CAS.
- Small farm system usage was captured in the Residential Load Study and the results applied to the small farms, and other Residential class customers, in the 2020 CAS.
- By taking all 2020 customers with a 'farm' SIC code, the data set will include both small and large farms. The Company does not have recent load data analysis for the Residential class a whole, and thus does not have CP and NCP data for all customers with a 'farm' SIC code.
    - If the Company applies the 2020 Residential CP and NCP against all the farms, it will not include the impact of the larger farms on the Residential CP and NCP.
    - Similarly, if the Company applies the 2020 Farms CP and NCP against all farms, it will not take into account the impact of the 1,500+ small farms on the results.
- The 2020 CAS delineated the large farms from the small farms as the usage of the latter much more closely resembles a typical Residential class customer.

e. Please see the response to d. above.

f. Please see the response to d. above.

[3] When developing the Load Study, the Company determined that almost all Residential class customers with a January consumption greater than 5,000 kWh were farm customers, and these large customers' usage patterns would be captured through the Farm Study. The usage patterns of 'smaller' Residential customers – those with consumption less than 5,000 kWh per month, would be captured in the Load Study.