

All our energy.
All the time.



December 9, 2022



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

Dear Ms. Mosher:

**2022 Supplemental Budget Request
Purchase of Transmission Assets - Bedeque, PE - Docket UE20736
Response to Additional Interrogatories from Commission Staff**

Please find attached the Company's response to Additional Interrogatories from Commission Staff with respect to the Purchase of Transmission Assets – Bedeque, PE filed on July 6, 2022.

An electronic copy of this submission will be forwarded shortly.

Yours truly,

MARITIME ELECTRIC

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

GCC36
Enclosure



ADDITIONAL INTERROGATORIES

**Responses to Interrogatories
of
Commission Staff**

**2022 Supplemental Budget Request (UE20736)
Purchase of Transmission Assets – Bedeque, PE**

Submitted December 9, 2022

Updates to Interrogatory Responses Filed on September 9, 2022

While preparing responses to the Interrogatories of Commission Staff - November 2, 2022, concerning the Company’s 2022 Supplemental Budget Request to purchase transmission assets located in Bedeque, PE, the Company refined certain estimates provided in the previous interrogatory responses submitted on September 9, 2022.

The updates relate to changes in the underlying assumptions included in the previous responses as follows:

- In the previous responses, the depreciation rate used was based on the composite rate of all transmission assets from the 2020 Depreciation Study, proposed to be adopted in the Company’s General Rate Application (“GRA”). The Company has concluded that it is more appropriate to use the composite rate of transmission lines and conductor only as the depreciation rate of these assets best represent the life span of the specific types of assets being considered for approval. As a result, the annual depreciation rate changed from 2.64 per cent to 3.39 per cent.
- In the previous responses, the estimated future tax liability did not reflect the immediate deduction of costs of removal of existing assets for tax purposes. This has been updated in the responses provided herein.

While neither of these adjustments result in material differences over the life of the assets, the Company has provided these changes to give the most accurate information possible in response to these interrogatories. Accordingly, the Company is providing updates to the tables included in the responses submitted to the Commission on September 9, 2022.

Update to IR-1 Response

TABLE 1 Annual Rate Base Impacts 2023 to 2030		
Year	Increase in Rate Base (\$000s)	Increase over 2022 Forecast Year End Rate Base^a (%)
2023	464 155	0.0
2024	330 310	0.1
2025	348 297	0.1
2026	2,814 2,647	0.6
2027	7,773 7,311	1.7 1.6
2028	10,385 9,727	2.3 2.1
2029	10,362 9,637	2.3 2.1
2030	10,003 9,230	2.2 2.0

a. 2022 forecast year end rate base was \$459,903,000 as provided in Table 6-2 of the GRA filed with the Commission on June 20, 2022.

TABLE 2 Estimated Return on Rate Base 2023 to 2030		
Year	Increase in Rate Base (\$000s)	Annual Return on Rate Base ^a (\$000s)
2023	164 155	11
2024	330 310	23 21
2025	318 297	22 20
2026	2,811 2,647	194 182
2027	7,773 7,311	535 504
2028	10,385 9,727	715 670
2029	10,362 9,637	714 664
2030	10,003 9,230	689 636

a. Return on rate base is the amount required to service the interest due to financing and Maritime Electric earnings due to return on equity for investment in capital assets.

Update to IR-3 Response

TABLE 3 Estimated Annual Investment, Cost of Removal and Depreciation			
Year	Investment (\$000s)	Cost of Removal (\$000s)	Depreciation (\$000s)
2023	142	29	2
2024	146	30	6 7
2025	-	-	8 10
2026	2,138	438	36 46
2027	4,322	885	124 155
2028	2,436	499	240 270
2029	286	59	246 316
2030	-	-	250 321
Total	9,470	1,940	879 1,127

Update to IR-11 Response

TABLE 7 Total Rate Impact for Services in Maritime Electric's OATT						
Services	Schedule in OATT	Reference	Approved OATT Rates (\$/MW-month) per UE22-04	2027 OATT Rates (\$/MW-month) Adjusted to Reflect 2026 Investments in Bedeque	2030 OATT Rates (\$/MW-month) Adjusted to Reflect 2029 Investments in Bedeque	Total (%) Change to Approved Rates
Scheduling, System Control and Dispatch	1	Appendix F	96.56	96.45 96.43	96.07 95.99	-0.5 -0.6
Reactive Supply and Voltage Control from Generation Sources	2	Appendix H	70.65	70.3 70.20	69.23 68.91	-2.0 -2.5
Regulation (Automatic Generation Control) ^a	3(a)	NB OATT	8,210.57	8,210.57	8,210.57	n/a
Load Following ^a	3(b)	NB OATT	8,175.68	8,175.68	8,175.68	n/a
AGC and Load Following for Non-Dispatchable Wind ^a	3(c)	NB OATT	\$0.44/MWh	\$0.44/MWh	\$0.44/MWh	n/a
Energy Imbalance	4	Section 6.3	n/a	n/a	n/a	n/a
Operating Reserve – Spinning ^a	5	NB OATT	8,164.06	8,164.06	8,164.06	n/a
Operating Reserve – Supplemental (10 minute) ^a	6(a)	NB OATT	3,908.48	3,908.48	3,908.48	n/a
Operating Reserve – Supplemental (30 minute) ^a	6(b)	NB OATT	3,908.48	3,908.48	3,908.48	n/a
Point-to-Point Transmission Service	7 and 8	Appendix D	3,831.93	3,917.32 3,916.70	4,182.14 4,188.55	9.4 9.3
Non-Capital Support Charge Rate	9	Section 8.0	1.77%	1.74%	1.65%	-6.8
Residual Uplift	10	Section 6.3	n/a	n/a	n/a	n/a
Network Transmission Service	Att. H	Appendix E	3,831.93	3,917.32 3,916.70	4,182.14 4,188.55	9.4 9.3

a. Rates shown are taken directly from the NB Power OATT, effective January 1, 2019, and are provided for reference.

**(UE20736) 2022 Supplemental Budget Request
Purchase of Transmission Assets - Bedeque, PE
Interrogatories from Commission Staff – November 2, 2022**

Maritime Electric

TABLE 8 Annual Rate Impact of Transmission Assets on Distribution Customer Rates and Cost						
Year	Annual Revenue Requirement (\$000s) A	80.5% to Maritime Electric Customers^a (\$000s) B = A x 80.5%	Forecast Sales (kWh)^b C	Cost (\$) per kWh D = B / C	Annual Cost (\$) Residential using 650 kWh per month E = D x 650 kWh x 12 months	Annual Cost (\$) General Service using 10,000 kWh per month F = D x 10,000 kWh x 12 months
2023	14	11	1,391,749,000	0.00001	0.08	1.20
2024	32 31	26 25	1,412,245,000	0.00002	0.16	2.40
2025	33	27	1,431,087,000	0.00002	0.16	2.40
2026	255 251	205 202	1,454,557,000	0.00014	1.09	16.80
2027	724 723	583 582	1,478,412,000	0.00039	3.04	46.80
2028	1,016 1,025	818 825	1,502,657,000	0.00054 0.00055	4.21 4.29	64.80 66.00
2029	1,050 1,064	845 857	1,527,301,000	0.00055 0.00056	4.29 4.37	66.00 67.20
2030	1,026 1,038	826 836	1,552,349,000	0.00053 0.00054	4.13 4.21	63.60 64.80

- a. Based on Maritime Electric forecast average pro rata share of OATT Revenue Requirement from 2022 to 2025.
b. GRA Forecast 2023 - 2025 kWh GRA sales forecast plus 1.64 per cent average annual growth from 2026 to 2030 per load forecast.

IR-12 Are the assets to be purchased by Maritime Electric part of the Interconnection Facilities, as defined in the Interconnection Lease Agreement?

Responses:

Yes, the assets to be purchased by Maritime Electric are part of the Interconnection Facilities, as defined in the Interconnection Lease Agreement.

IR-13 Please file the amended Interconnection Lease Agreement if finalized. Alternatively, please advise when the amended Lease will be finalized and filed with the Commission.

Responses:

Section 5.3 of the Application identifies amendments that will be required to the Interconnection Lease Agreement, upon transfer of the assets, following Commission approval. As such, these amendments will be finalized and then filed with the Commission, once Commission approval to transfer the assets has been received and the transfer has occurred. This will also provide the opportunity to consider any other amendments that may be necessary to reflect the transfer of the assets, and their replacement, as proposed in the Application.

IR-14 In response to IR-6(d) of Commission staff, Maritime Electric states that “*the primary purpose of the Contingency Fund is to ensure that money is readily available to carry out emergency cable repairs...*” Please provide support for this statement. Where is this stated in the Interconnection Lease Agreement?

Responses:

The Interconnection Lease Agreement does not specifically state “*the primary purpose of the Contingency Fund is to ensure that money is readily available to carry out emergency cable repairs.*” However, this has always been Maritime Electric’s understanding on the intent of the Contingency Fund, which is consistent with what is stated in the second paragraph of the Government Letter provided as Appendix B to the Application. This understanding is also supported by past practice, with one exception,¹ as the Contingency Fund has historically been allowed to reach and retain at least its target balance until needed for emergency cable repairs, which occurred in 1997 and 2012.

¹ In 2018, when it had not yet reached its target balance, the Contingency Fund was used to pay for capital repairs to circuit switch CS1 and reactor #1.

IR-15 In response to IR-9 of Commission staff, Maritime Electric provides the replacement/purchase cost of each item listed in Appendix A to the Application. Please confirm that these replacement/purchase costs are included in (and not in addition to) the capital expenditures forecast in Table1 (at page 10) of the Application.

Responses:

Yes, the replacement/purchase cost of each item provided in the response to IR-9 of Commission staff is included in (and not in addition to) the capital expenditures forecast in Table1 (on page 10) of the Application.

**(UE20736) 2022 Supplemental Budget Request
Purchase of Transmission Assets - Bedeque, PE
Interrogatories from Commission Staff – November 2, 2022**

Maritime Electric

IR-16 Refer to Table 8 filed in response to IR-11 of Commission staff. Please add an additional column to Table 8 to show the total percentage change to approved rates (similar to the last column in Table 7).

Responses:

Table 9 shows the total percentage change to approved rates for residential and general service customers as well as the percentage increase in annual cost for a benchmark rural residential customer and general service customer before tax.

TABLE 9 Annual Rate Impact of Transmission Assets on Distribution Customer Rates and Cost (Table 8 from response to IR-11 with additional column to show total percentage change to approved rates)							
Year	Cost (\$) per kWh A = Column D from Table 8	Annual Cost (\$) Residential using 650 kWh per month B = Column E from Table 8	Annual Cost (\$) General Service using 10,000 kWh per month C = Column F from Table 8	Increase (%) over Approved Residential First Block Rate D = A / \$0.1532	Increase (%) over Approved General Service First Block Rate E = A / \$0.1871	Increase (%) in Annual Cost Rural Residential using 650 kWh per month F = B / \$1,516.87 ^a	Increase (%) in Annual Cost General Service using 10,000 kWh per month G = C / \$23,784.30 ^b
2023	0.00001	0.08	1.20	0.01	0.01	0.01	0.01
2024	0.00002	0.16	2.40	0.01	0.01	0.01	0.01
2025	0.00002	0.16	2.40	0.01	0.01	0.01	0.01
2026	0.00014	1.09	16.80	0.09	0.07	0.07	0.07
2027	0.00039	3.04	46.80	0.25	0.21	0.20	0.20
2028	0.00055	4.29	66.00	0.36	0.29	0.28	0.28
2029	0.00056	4.37	67.20	0.37	0.30	0.29	0.28
2030	0.00054	4.21	64.80	0.35	0.29	0.28	0.27

- a. Annual cost before tax for a Benchmark Residential Customer from March 1, 2022 to February 28, 2023 from Table 7-4 of the GRA.
- b. Annual cost before tax for a Benchmark General Service Customer from March 1, 2022 to February 28, 2023 from Table 7-6 of the GRA.

IR-17 In response to IR-2(b) of Commission staff, Maritime Electric filed an internal inspection report summary and engineering consultant's report that were prepared in 2018. At page 7 of the internal inspection report, Maritime Electric recommends that PEIEC replace the Reactor and Circuit Switch for Cable #1 "*in a couple of years*". Was this replacement performed? If not, why? Please provide any communication with PEIEC regarding the recommended replacement.

Responses:

The reactor and circuit switch for cable #1 have not yet been replaced. Following the capital repairs to circuit switch CS1 and reactor #1 in 2018, Maritime Electric began discussions with Provincial Government that eventually led to the current Application. The majority of these discussions were verbal. In 2020, Maritime Electric sent an e-mail to PEIEC concerning the 2018 repairs with attachments that included reports recommending replacement of the circuit switch and reactor for cable #1.² The e-mail is provided as IR-17 – Attachment 1.

² The attachments to the e-mail are provided in the response to IR-2, as IR-2 Attachments 1 and 2.

IR-18 Please provide the agendas and minutes for all Interconnection Committee meetings from July 2017 to present.

Responses:

To date, there has not been a meeting of the Interconnection Committee. This matter was recently discussed with the PEI Energy Corporation (“PEIEC”) and it is expected that PEIEC will begin scheduling semi-annual meetings of the Interconnection Committee in early 2023.

- IR-19** The Interconnection Lease Agreement contemplates increasing the balance of the Contingency Fund beyond a maximum of \$5 million by mutual agreement of the parties.
- a) Why was increasing the Contingency Fund contributions to cover the anticipated capital replacements not presented as option for consideration by the Commission?
 - b) How much would need to be contributed to the Contingency Fund on an annual basis to cover the cost of the anticipated capital replacements? Please provide all supporting calculations and assumptions.
 - c) Assuming the Contingency Fund contributions are increased to cover the cost of the anticipated capital replacements, calculate each of the following:
 - i. The value of the assets that will be recorded in rate base in each of 2022 to the end of the useful life of the assets;
 - ii. The return on rate base (in dollars per year) that Maritime Electric will earn on the assets during their lifetime;
 - iii. The annual rate impact for both transmission and distribution customers, shown in dollars and percentage change.
 - d) Which is the least-cost option for Maritime Electric transmission and distribution customers: purchasing the assets as proposed in the Application, or increasing the annual Contingency Fund contributions to cover the anticipated capital replacements? Please explain and provide all supporting calculations and assumptions.

Responses:

- a. An option to increase the Cable Contingency Fund contributions to cover the anticipated capital replacements was not presented to the Commission on the basis that the Province and the Company together agree that the intent of the Cable Contingency Fund is to fund repairs to the cables and, therefore, should not be used to replace other assets.

In addition, increasing the Cable Contingency Fund contribution to cover the anticipated capital replacement would require an unreasonably large immediate cost increase for current transmission customers, relative to a more reasonable increase with amortization of the replacement costs over the useful life of the assets. This rationale is supported in the responses to IR-19b, IR-19c and IR-19d that follow, and is consistent with how all other Maritime Electric owned transmission assets are financed.
- b. If the Cable Contingency Fund were to be used to cover the cost of capital replacements proposed in the Application, it would be prudent to reserve the current balance, and the annual contributions of \$375,000 up to the \$5 million target balance, for cable repairs. Otherwise, using the current balance and annual contributions for capital replacement of the Bedeque assets would mean that the \$5 million target balance of the Cable Contingency Fund would not be reached until 2042.³ This would run the risk of funds not being available for a major repair should anything happen to the existing cables.

³ Using the exiting balance of the Cable Contingency Fund and annual contributions to offset a portion of the capital replacement of the Bedeque assets would fully deplete the fund, thereby requiring the fund to build from zero beginning in 2029 (\$5 million / \$375 thousand = 13.3 years).

**(UE20736) 2022 Supplemental Budget Request
Purchase of Transmission Assets - Bedeque, PE
Interrogatories from Commission Staff – November 2, 2022**

Maritime Electric

To avoid a 20-year period where the Cable Contingency Fund is below its target balance, this response assumes that a second contingency fund account would be setup for asset replacement.

The annual contribution requirements for the asset replacement fund are provided in Table 10 along with the proposed expenditures for asset replacements from 2023 to 2029 and the balance in the account each year. This scenario requires a six-year cost recovery period to ensure funds are available in the years the capital replacements are required. Note that if actual costs end up exceeding the forecast amount then the annual recovery amount would need to be adjusted accordingly.

TABLE 10 Contingency Fund – Asset Replacement Account					
Year	Proposed Asset Replacement Cost Recovery A	Proposed Removal Cost Recovery ^a B	Proposed Total Cost Recovery C = A + B	Projected Total Asset Replacement Costs ^b D	Projected Asset Replacement Account Balance E = C – D + (E for previous year) ^c
2023	\$ 1,579,000	\$ 323,000	\$ 1,902,000	\$ 171,000	\$ 1,731,000
2024	1,579,000	323,000	1,902,000	176,000	3,457,000
2025	1,578,000	324,000	1,902,000	-	5,359,000
2026	1,578,000	324,000	1,902,000	2,576,000	4,685,000
2027	1,578,000	323,000	1,901,000	5,207,000	1,379,000
2028	1,578,000	323,000	1,901,000	2,935,000	345,000
2029	-	-	-	345,000	-
Total	\$ 9,470,000	\$ 1,940,000	\$ 11,410,000	\$ 11,410,000	\$ -

- a. The upfront recovery of the cost of removal is required in this scenario because there is no alternative to recovering this cost. In comparison, for Company owned assets, the recovery of the cost of removal is recovered through depreciation.
- b. Projected Total Asset Replacement Cost includes projected cost of removal of existing assets.
- c. For 2023 (E for previous year) is zero.

The next step is to determine how to recover the costs from customers. The incremental annual amount of \$1.9 million could be recovered from transmission customers through Maritime Electric's open access transmission tariff ("OATT"), same as the existing Cable Contingency Fund annual contribution of \$375,000. Such an approach would require an increase in OATT Schedule 7 and 8 rates of 15.6 per cent effective January 2023 until December 2028.

- c. Assuming the Contingency Fund contributions are increased to cover the cost of the anticipated capital replacements:
 - i. The assets would not be owned by Maritime Electric and, therefore, there would be no value included in the Company's rate base over the life of the assets.
 - ii. The Company would not own the assets and, therefore, would not earn any return on rate base over the life of the assets.
 - iii. As discussed in the response to part (b), there would be a 15.6 per cent increase in Schedule 7 and 8 charges for transmission customers over the existing approved OATT effective 2023 until 2028. After 2028, contributions to the asset

**(UE20736) 2022 Supplemental Budget Request
Purchase of Transmission Assets - Bedeque, PE
Interrogatories from Commission Staff – November 2, 2022**

Maritime Electric

replacement account would not be required until such a time that the assets require subsequent replacement.

The annual rate impacts for distribution customers are provided in Tables 11 and 12.

TABLE 11 Annual Rate Impact of Asset Replacement Account Contributions on Distribution Customer Rates and Cost						
Year	Annual Contributions to Asset Replacement Fund (\$) A	80.5% to Maritime Electric Customers^a B = A x 80.5%	Forecast Sales (kWh)^b C	Cost (\$) per kWh D = B / C	Annual Cost (\$) Residential using 650 kWh per month E = D x 650 kWh x 12 months	Annual Cost (\$) General Service using 10,000 kWh per month F = D x 10,000 kWh x 12 months
2023	1,902,000	1,531,000	1,391,749,000	0.00110	8.58	132.00
2024	1,902,000	1,531,000	1,412,245,000	0.00108	8.42	129.60
2025	1,902,000	1,531,000	1,431,087,000	0.00107	8.35	128.40
2026	1,902,000	1,531,000	1,454,557,000	0.00105	8.19	126.00
2027	1,901,000	1,530,000	1,478,412,000	0.00103	8.03	123.60
2028	1,901,000	1,530,000	1,502,657,000	0.00102	7.96	122.40

- a. Maritime Electric forecast average pro rata share of OATT Revenue Requirement from 2022 to 2025.
- b. GRA Forecast 2023-2025 kWh GRA sales forecast plus 1.64 per cent average annual growth from 2026 to 2030 per load forecast.

TABLE 12 Annual Rate Impact of Asset Replacement Account Contributions on Distribution Customer Rates and Cost							
Year	Cost (\$) per kWh A = Column D from Table 11	Annual Cost (\$) Residential using 650 kWh per month B = Column E from Table 11	Annual Cost (\$) General Service using 10,000 kWh per month C = Column F from Table 11	Increase (%) over Approved Residential First Block Rate D = A / \$0.1532	Increase (%) over Approved General Service First Block Rate E = A / \$0.1871	Increase (%) in Annual Cost - Rural Residential using 650 kWh per month F = B / \$1,516.87	Increase (%) in Annual Cost - General Service using 10,000 kWh per month G = C / \$23,784.30
2023	0.00110	8.58	132.00	0.72	0.59	0.57	0.55
2024	0.00108	8.42	129.60	0.70	0.58	0.56	0.54
2025	0.00107	8.35	128.40	0.70	0.57	0.55	0.54
2026	0.00105	8.19	126.00	0.69	0.56	0.54	0.53
2027	0.00103	8.03	123.60	0.67	0.55	0.53	0.52
2028	0.00102	7.96	122.40	0.67	0.55	0.52	0.51

- d. The least-cost option for Maritime Electric customers is purchasing the assets as proposed in the Application.

A widely used method to assess the least-cost option to replace the Bedeque assets is to compare the net present value (“NPV”) of the future cash flows of both options as provided in Table 13.

**(UE20736) 2022 Supplemental Budget Request
Purchase of Transmission Assets - Bedeque, PE
Interrogatories from Commission Staff – November 2, 2022**

Maritime Electric

TABLE 13 NPV Comparison of Future Cash Flows	
Option	NPV
Maritime Electric Purchase Option	\$8,435,812
Asset Replacement Contingency Fund	\$9,095,440

In addition to being the least cost option, Maritime Electric purchasing the assets provides for the fair collection of the cost of the assets from the customers receiving the benefit of these assets over their expected useful life. Alternatively, the asset replacement account option would unfairly burden current customers with the full replacement cost of the new transmission assets, rather than having current and future customers pay for the assets over their useful life.⁴

The underlying calculations, inputs and assumptions for Tables 10 through 13 are provided in electronic format.

⁴ The approach to replacement of the Bedeque transmission assets as proposed in the Application aligns with fundamental regulatory principles of intergenerational equity, and rate stability and predictability.



INTERROGATORIES

IR-17 – Attachment 1

Victor, Mark

From: Arthurs, Michael
Sent: Wednesday, February 19, 2020 2:13 PM
To: Heather MacLeod
Cc: O'Rielly, Gary; Walsh, Kim
Subject: Bedeque Circuit Switcher & reactor repairs from 2018
Attachments: Bedeque Reactor - Internal Inspection Van Kooy- final report.doc.pdf; 21468 PEI Energy Corporation MECL Invoice.pdf; Circuit Switcher 1 Failure 2018 PEI Energy Summary Final.pdf

Heather

Please find attached the report from the repairs on the reactor and circuit switcher we completed in 2018.

Attached is the following:

- MECL report on repairs and recommendations for the future.
- MECL Invoice for the repair work
- Report from or transformer consultant on the status of the reactor.

Any questions please feel free to give me a call.

Thanks

Mike

Michael Arthurs, P.Eng > Superintendent, Engineering

180 Kent Street, Charlottetown, PE C1A 7N2
telephone 902-629-3669 > **mobile** 902-393-9014
fax 902-629-3630
maritimeelectric.com

All our energy.
All the time.



The contents and/or documents accompanying this transmission contain confidential information intended for a specific individual and purpose. The information is private and legally protected by law. If you are not the intended recipient, you are hereby notified that any disclosure, copying, distribution or taking of any action in reliance on the contents of this information is strictly prohibited. If you have received the communication in error, please notify the sender immediately and return to Maritime Electric. Thank you.