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July 21, 2021

Gloria Crockett  
Maritime Electric Company, Ltd.  
180 Kent Street  
Charlottetown, PE C1A 7N2

Dear Ms. Crockett

SUBJECT: 2020 Cost Allocation Study

Please find attached the findings of Chymko Consulting Ltd.'s Electric Utility cost allocation study technical update to assist Maritime Electric with its upcoming rate proposal to the Island Regulatory and Appeals Commission.

We appreciate the time and effort of Maritime Electric staff to provide us with the necessary data and information to conduct this study. Should you have any questions or comments on this report, please contact me at (403) 781-7691.

Yours truly,

A handwritten signature in blue ink, appearing to read "M. Turner", is written over a circular blue stamp or watermark.

Michael Turner  
President

cc: John Cunniffe

Attachment



## 2020 Cost Allocation Study

Maritime Electric

July 21, 2021

[\(revised January 27, 2022\)](#)

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# EXECUTIVE SUMMARY

Maritime Electric Company Limited (MECL) retained Chymko Consulting Ltd. to update the comprehensive 2017 Cost Allocation Study in support of a future rate proposal to the Island Regulatory and Appeals Commission (IRAC). The following report provides the results of this study, which is based on MECL's 2020 Financial Results for twelve months ending on December 31, 2020.

A cost allocation study first functionalizes revenue requirement (in this case, the Statement of Earnings), essentially seeking to attribute the full cost of service to a specific purpose, such as power supply, transmission, distribution network, services and metering, customer care, and lighting. Next, the cost allocation study classifies each function as demand, energy, or site-related depending upon how the cost of that function might vary with how end-use customers use the system. Finally, the cost allocation study will allocate the functionalized and classified expenses to rate classes.

Table A below summarizes MECL's allocated revenue requirement.

<b>Table A</b>				
<b>Allocated 2020 Net Revenue Requirement from Rates</b>				
	Revenue Collected	Allocated Cost	Revenue-to-Cost Ratio (2020)	Revenue-to-Cost Ratio (2017)
Residential	50.7%	54.7%	93%	91%
Residential (S)	2.3%	2.4%	94%	96%
Farm	2.8%	3.1%	92%	82%
General Service	29.0%	24.65%	118%	121%
General Service (S)	0.7%	0.7%	1023%	113%
Small Industrial	6.3%	5.8%	109%	102%
Large Industrial	6.9%	7.21%	96%	94%
Lights	1.1%	1.4%	79%	91%
Unmetered	0.2%	0.2%	1056%	104%
Total	100.0%	100.0%	100%	100%

Allocated cost is one bookend for a 2021 rate proposal, representing the cost to provide electric utility service for each rate class. If cost causation were the only consideration, for instance, Table A indicates that 2021 rates should seek to recover 54.7 per cent of 2021 revenue requirement from the Residential rate class, 2.4 per cent from the Seasonal Residential rate class, and so on.

Another consideration is how much the rate for each class of customer would have to change to recover allocated cost. By the current revenue-to-cost ratios shown in Table A above, some rates would need to change significantly. Subject to full consideration of all rate design principles and further analysis of any such change, it may well be that rate rebalancing would need to be implemented gradually over the course of multiple years.

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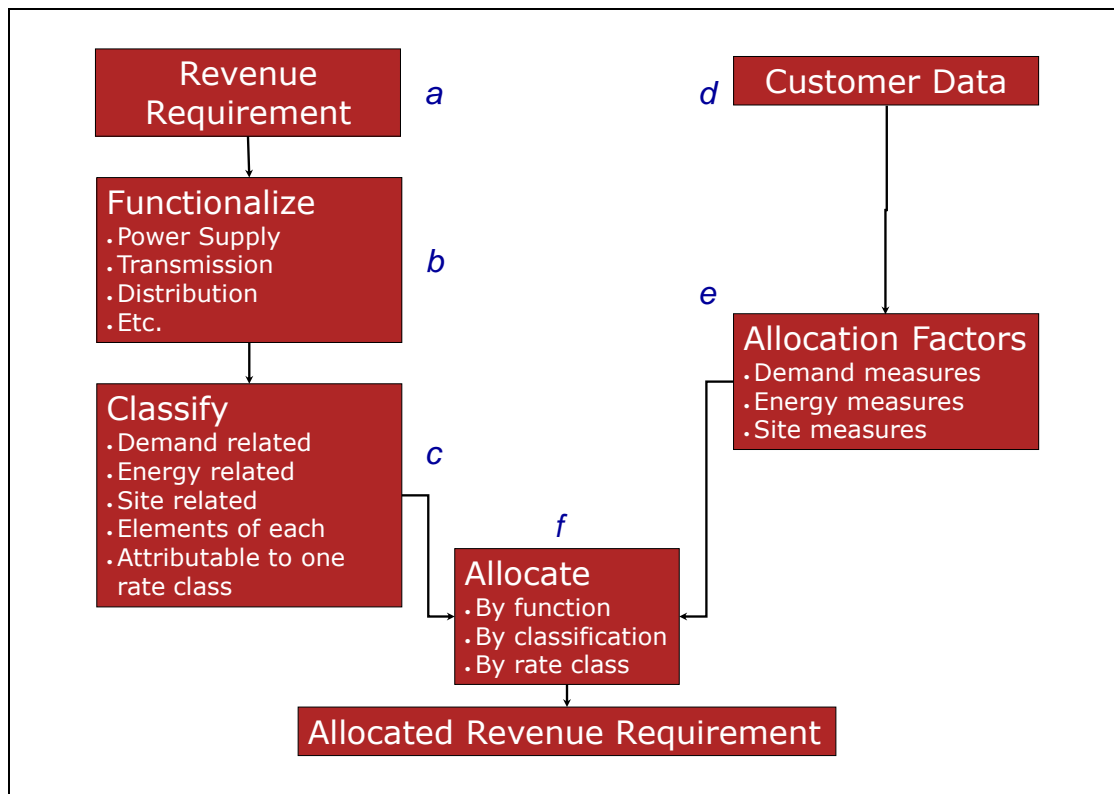
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# 1 INTRODUCTION

1. Maritime Electric Company Limited (MECL) retained Chymko Consulting Ltd. (CCL) to complete a technical update to the cost allocation study conducted in support of MECL's 2021 rate proposal to the Island Regulatory and Appeals Commission (IRAC or the Commission). Based on the assumptions discussed in this report, CCL's cost allocation study takes as a starting point MECL's Statement of Earnings for twelve months, ending on December 31, 2020. Contained in MECL's December 2020 monthly financial report submitted to IRAC, the Statement of Earnings represents the total cost of providing electric utility service at a rate of return determined by IRAC in Order UE19-08 and in Order UE20-06.
2. A cost allocation study typically begins with determining "revenue requirement," which represents the forecast cost of providing electric utility service based on a regulator-approved rate of return. MECL's 2020 Statement of Earnings is similarly based on a rate of return deemed to be in the public interest insofar as it is compliant with Order UE19-08. Therefore, the principal difference between the Statement of Earnings and revenue requirement is that the Statement of Earnings is calculated after-the-fact and revenue requirement is typically forward-looking. MECL has traditionally filed cost allocation studies based on actual expenses from the previous calendar year, and in using the 2020 Statement of Earnings this study is no different.
3. This study examines the detailed expenses underlying the Statement of Earnings and assigns, attributes, or allocates expenses to each of MECL's rate classes. The fully-allocated 2020 Statement of Earnings by rate class then becomes an important benchmark to inform MECL's anticipated 2021 rate proposal. If the Residential rate class is attributed fifty per cent of 2020 expenses, for instance, then this information can serve as a target or objective for designing 2021 Residential rates.
4. The first step of a cost allocation model is to group similar types of expenses that make up revenue requirement into elements of service, or functions. For each function, the user of the cost allocation model must consider:
  - Is the function incurred for the purpose of servicing all rate classes, a sub-set of rate classes, or a single rate class?
  - If the function is attributable to more than one rate class, how might the cost of that function vary depending upon how end-use customers use the distribution system? For example, does the cost vary with peak daily demand changes? Does it vary with the total amount of energy delivered? Does it vary with the number of distribution sites served?
  - How does each rate class contribute to the use of distribution infrastructure? For example, how does each rate class contribute to total peak demand and total energy delivered? How many sites are served in each rate class?

5. In order to answer the above questions, cost allocation studies follow a structured process, which can be explained with the aid of [Figure 1](#) below. Taking revenue requirement (labelled as a) as a given, the first step is known as functionalization (labelled as b), which begins with attributing each line item in the study by its purpose or function.

**Figure 1: Process of a cost allocation study**



6. The next step in a cost allocation study is called classification (c). The purpose of classification is to determine how each function might vary based on how end-use customers use the system. Sometimes, a function exists solely for the purpose of serving a subset of rate classes, perhaps only a single rate class. However, as long as the function is attributable to more than one rate class, it is necessary to explore further as to whether the expense will vary with peak demand on the system, the amount of energy consumed, or the number of sites served by the system. Thus, each function is classified as demand-related, energy-related, site-related, or a combination of the three.
7. The final step of a cost allocation study is to allocate the functionalized and classified revenue requirement to rate classes. The choice of allocation factor is to a large degree influenced by the classification of each functionalized detail of revenue requirement. For example, demand-related costs are generally allocated by the same proportions as the peak demand of each rate class. Similarly, energy-related costs are allocated by the same proportions as energy sales and site-related costs are allocated by the relative size of each rate class.

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8. The development of allocation factors starts with the collection of MECL's system load data and billing statistics (d). From this foundation along with any associated load research data, it is possible to calculate allocation factors (e) based on each rate classes' peak demand, energy consumption, and the number of sites per rate class.
  9. As suggested by the overview above, the process of a cost allocation study is relatively uncomplicated given there is agreement upon how a cost is to be functionalized, classified, and allocated. Thus, generally accepted principles and methods have evolved out of a number of years of regulatory experience. Regulated distribution utilities must file cost allocation studies to demonstrate that their tariffs are just and reasonable. Generally accepted methods typically evolve out of the regulatory process, but even these continue to evolve with industry changes and provincial government policy. Furthermore, every utility is different, and every utility service area has its own unique characteristics and issues that may justify a different method. Therefore, it is important to justify the rationale for every cost functionalization, classification, and allocation decision, regardless of whether it is a commonly accepted standard or not.

## 2 FUNCTIONALIZATION

10. The starting point for cost allocation is the 2020 MECL Statement of Earnings. This is summarized in Table 1 below.

<b>Table 1<sup>1</sup></b>	
<b>MECL 2020 Statement of Earnings (Revenue Requirement, \$,000)</b>	
Twelve Months ending December 31, 2020	
Operating Expenses	
Energy Costs	129,520
ECAM Adjustment	(1,333)
Net Energy Costs	128,187
Distribution	5,188
Transmission	739
Transmission and Distribution - Other	2,364
Transmission - OATT	218
General	11,272
Total Operating Expenses	147,967
Amortization	
Amortization Other	909
Amortization Plant And Equipment	28,535
Total Amortization	29,445
Total Operating Income	177,412
Financing Expenses	
Long-Term Debt	12,442
Short-Term Debt	706
Interest Charged To Construction	(444)
Amortization of Financing Costs	14
Total Financing Expenses	12,718
Earnings before Income Taxes	20,701
Income Taxes	6,318
Net Earnings	14,382
Gross Revenue Requirement	210,831
OATT Revenue	(2,513)
Other Revenue <sup>2</sup>	(5,005)
Net Revenue Requirement	203,313

11. Net earnings identified is equivalent to the Company's actual return on equity for a prospective revenue requirement. MECL's 2020 earnings were less than the 9.35% maximum rate of return approved by the Commission in Order UE19-08, but this difference is not expected to have a material impact on the cost allocation results.
12. As in the 2017 Cost Allocation Study, the Statement of Earnings in Table 1 includes Pole Revenue in other revenue rather than in streetlight revenue.

<sup>1</sup> Table totals in this report may not reconcile due to rounding.

<sup>2</sup> Includes pole rental revenue.



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## 2.1 METHOD

13. Consistent with the 2017 Cost Allocation Study, CCL's current study fully attributes revenue requirement in Table 1 to one of sixteen functions discussed below. For purposes of summary, the sixteen functions are also discussed under six general categories: power supply, transmission, distribution network, services and metering, customer care, and lighting.

### *Power Supply*

- Generation: MECL's Borden and Charlottetown generating facilities, which are typically dispatched for backup purposes.
- Purchased Power: Energy supply purchases from NB Power and PEI Energy Corp, which are typically dispatched for base load and ancillary service requirements.

### *Transmission*

- High-voltage transmission facilities operating at a voltage of 69 kV or greater.

### *Distribution Network*

- Substations: Facilities used to regulate and step-down voltages from transmission facilities to distribution lines.
- Primary Lines: Bulk distribution lines used to deliver energy from substations to localized distribution transformers.
- Transformers: Facilities used to regulate and step-down voltages from primary distribution lines to a voltage more suitable for the end-use consumer.
- Secondary Lines: Local distribution lines operating at a consumer-level voltage that service multiple end-use customers.

### *Services and Metering*

- Service Lines: Local distribution lines operating at a consumer-level voltage that connect the distribution network to the meter of a single, end-use customer.
- Meter Assets: Metering infrastructure used to measure and record energy consumed by each end-use customer.
- Meter Reading: The process of collecting and processing end-use customer metering data, primarily for the purpose of billing.

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## Customer Care

- Billing: The process of preparing and delivering invoices to end-use customers for power supply and use of the MECL system.
- Remittance & Collection: The accounts receivable process of collecting and processing end-use customer bill payments.
- Uncollectibles & Damage Claims: Uncollectibles are associated with the cost of outstanding customer invoices (e.g. bad debts), whereas damage claims represent claims against MECL for damage to customers' property.
- Service Connections: Activities related to the connection or re-connection of customers, which may include off-cycle meter reads as well as modifications or additions to secondary lines, service lines, and meters. MECL recovers the cost of these activities under sections O-1 and O-2 of its tariff.
- Late Payments: Penalty revenues associated with consumer accounts in arrears, as recovered under section O-3 of the MECL tariff.

## Lighting

- Facilities dedicated to the use of providing electric service to street and area lighting, as defined under sections N-22, N-23, N-25, and N-26 of the MECL tariff.

14. CCL functionalizes revenue requirement as per a series of methods and assumptions summarized in Table 2 below, which are unchanged from the 2017 Cost Allocation Study. Overall, this table demonstrates that sixty-two per cent of revenue requirement is directly assigned to a function. An additional thirty-five per cent is functionalized according to the same proportions as the underlying facilities and assets, the majority of which are also directly assignable because of detailed asset records. A further three per cent is allocated by the same proportions by which labour cost is functionalized, which leaves just 0.1 per cent to be allocated by various methods involving professional judgement.

<b>Table 2</b>					
<b>Methods to Functionalize 2020 MECL Revenue Requirement</b>					
	Direct Assign	Assets & Facilities	Labour	Professional Judgment	Total
<b>Operating Expenses</b>					
Energy Costs	99%	1%	0%	1%	100%
ECAM Adjustment	100%	0%	0%	0%	100%
Net Energy Costs	99%	1%	0%	1%	100%
Distribution	18%	76%	0%	6%	100%
Transmission	100%	0%	0%	0%	100%
Transmission and Distribution - Other	7%	93%	0%	0%	100%
Transmission – OATT	100%	0%	0%	0%	100%
General	6%	17%	54%	23%	100%
Total Operating Expenses	87%	6%	4%	3%	100%
<b>Amortization</b>					
Amortization Other	73%	7%	20%	0%	100%
Amortization Plant And Equipment	0%	100%	0%	0%	100%
Total Amortization	2%	97%	1%	0%	100%
Total Operating Income	73%	21%	4%	2%	100%
<b>Financing Expenses</b>					
Long-Term Debt	0%	100%	0%	0%	100%
Short-Term Debt	0%	100%	0%	0%	100%
Interest Charged To Construction	0%	100%	0%	0%	100%
Amortization of Financing Costs	0%	100%	0%	0%	100%
Total Financing Expenses	0%	100%	0%	0%	100%
Earnings before Income Taxes	0%	100%	0%	0%	100%
Income Taxes	0%	100%	0%	0%	100%
Net Earnings	0%	100%	0%	0%	100%
Gross Revenue Requirement	61%	34%	3%	2%	100%
OATT Revenue	100%	0%	0%	0%	100%
Other Revenue	23%	5%	0%	71%	100%
Net Revenue Requirement	62%	35%	3%	0%	100%

15. To the extent that the information exists, and it is practical to do so, the first priority in functionalization is to directly attribute as much as possible to a given function without the need to allocate. The detailed financial accounting records provided by MECL allows CCL to directly assign nearly two thirds of revenue requirement to one of the sixteen functions.
16. That which cannot be directly assigned is allocated. Amortization, debt financing, return, and income tax are the most important examples of a functional allocation. These expenses comprise more than one quarter of the MECL revenue requirement and are only indirectly associated with the sixteen functions. Amortization, debt financing, and return are all calculated based on MECL's infrastructure investment and therefore the underlying infrastructure becomes a determining factor as to how these expenses should be functionalized. Moreover, MECL pays income tax only if it earns a positive return and therefore, tax is also indirectly associated with utility infrastructure.
17. CCL allocates these expenses by the same proportions as the underlying capital infrastructure, which means that gross plant and depreciation must also be fully attributed

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to each of the sixteen functions. MECL's detailed plant records facilitate a relatively straightforward functionalization process as shown in Schedule 4.0 of Appendix A. More than half of gross plant in service is directly attributable to a single function and an additional thirty-nine per cent is attributable to a narrow subset of the sixteen functions.

18. The next-most important functionalization method as it affects total revenue requirement is general operating expenses non-specific to a function. For instance, because corporate overhead costs (corporate supervisory salaries and employment benefits) exist for the purpose of all other personnel, CCL allocated such expenses by the same proportions as all other labour expenses already attributed to the sixteen functions.
19. The final category of functionalization method used is broadly described as professional judgement in Table 2. This describes seven different methods that are applied on a case-by-case basis depending upon the nature of the expense. The two most important methods, as measured by total expense allocated, are used for the allocation of energy control centre expenses and the allocation of finance administration costs. In the case of the former, this and previous studies rely on the professional judgement of MECL staff to functionalize energy control centre: one-quarter to power supply, one-quarter to transmission, and the remaining amount to the distribution network, as shown in Schedule 5.0 of Appendix A. In the case of financial administration, approximately half of the annual expense is postage and stationery associated with billing and the other half is labour cost. For the half that is labour, expenses are functionalized according to the work responsibilities of the five personnel in that department.

## 2.2 RESULT

20. The outcome of the functionalization process is summarized in Table 3 below.

Table 3 Functionalized MECL Revenue Requirement (\$,000)							
	Power Supply	Trans'n	Distrib'n Network	Services and Metering	Customer Care	Lighting	Total
Operating Expenses							
Energy Costs	122,396	65,033	515	12	0	1	129,520
	037	55					
ECAM Adjustment	(1,333)	0	0	0	0	0	(1,333)
Net Energy Costs	121,627	65,033	515	12	0	1	128,187
	04	55					
Distribution	76	76	4,439	555	0	42	5,188
Transmission	0	739	0	0	0	0	739
T&D – Other	0	0	2,364	0	0	0	2,364
Transmission – OATT	0	218	0	0	0	0	218
General	1,38541	1,70765	4,81749	1,36257	1,92930	723	11,272
	1	4					
Total Operating Expenses	123,191	8,77264	12,1673	1,9249	1,92930	115	147,967
	088	1	4				
Amortization							0
Other	702	92	102	13	0	1	909
Plant And Equipment	9,580	2,923	11,617	3,951	47	417	28,535
Total Amortization	10,282	3,014	11,719	3,964	47	418	29,445
Total Operating Income	133,473	11,7865	23,8865	5,88793	1,9767	5334	177,412
	70	6	4				
Financing Expenses							0
Long-Term Debt	1,24925	2,08853	67,8052	1,59646	393	1764	12,442
		6	8				
Short-Term Debt	8571	11944	400386	913	2	10	706
Charged To Construction	(4453)	(7591)	(24352)	(579)	(1)	(6)	(444)
Amortization of Financing	12	32	78	2	0	0	14
Total Financing Expenses	1,52573	2,13459	67,2095	1,6831	4033	1789	12,718
		2	9				
Earnings before Tax	2,07482	34,4732	11,7332	2,65573	6654	2920	20,701
		19	6	9			
Income Taxes	758632	1,06028	3,45781	81036	1720	889	6,318
		8					
Net Earnings	1,72440	2,41932	87,1528	1,84490	4638	2031	14,382
			69	3			
Gross Revenue Requirement	1367,47	187,598	42,8281	10,1731	2,08364	1,0015	210,831
	915	263	39	4			
OATT Revenue	0	(2,513)	0	0	0	0	(2,513)
Other Revenue	(3327)	(456)	(3,7261)	(356)	(1,160)	(4)	(5,005)
			)				
Net Revenue Requirement	1367,44	164,702	398,102	10,2713	92204	1,00199	203,313
	687	49	418	8		7	

21. The results in Table 3 are relatively consistent with previous studies, which is reasonable given that CCL has followed the same methods as the previous study. Compared to CCL's 2017 Cost Allocation Study for MECL, the largest shift in functionalized expense is related to power supply, which has dropped from sixty-nine per cent to sixty-eight per cent of the total functionalized cost (see Table 4 below).

22. Excluding power supply from the analysis, Table 4 also demonstrates that there is an increase in expenses functionalized as transmission. At the same time, costs that are functionalized as distribution-related increased at a lower rate than other functionalized costs, resulting in the distribution function's share of revenue requirement decreasing from fifty-nine per cent in 2017 to fifty-eight per cent in 2020 when power supply is excluded. When power supply is included, the share of distribution-related costs grew. This increase is primarily attributed to growth in maintenance lines.
23. Expenditures within revenue requirement will shift focus over time and since 2017, MECL's revenue requirement shifted slightly from on-island generation expenses (down ~~two-one~~ per cent of total revenue requirement) toward more expenditures on transmission, substation, and primary lines expenses. If nothing else changes, MECL's biggest energy consumers, small and large industrials, benefit from this because generation is allocated in part based on energy sales whereas transmission, substation, and primary lines expenses are allocated based on peak demand. In other words, the evolving revenue requirement observed here has the effect of shifting more expenses to Residential and General Service and less toward Small and Large Industrial, assuming all else equal.

<b>Table 4</b>							
<b>Functionalized MECL Revenue Requirement</b>							
	Power Supply	Trans'n	Distrib'n Network	Services and Metering	Customer Care	Lighting	Total
Per cent of total							
2020 Revenue Requirement	67 <del>8</del> %	87%	19%	5%	0%	0%	100%
2017 Revenue Requirement	69%	7%	18%	5%	1%	0%	100%
Excluding Power Supply							
2020 Revenue Requirement	N/A	224%	589%	15%	1%	21%	100%
2017 Revenue Requirement	N/A	22%	59%	16%	2%	1%	100%

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## 3 CLASSIFICATION

24. Functionalized revenue requirement is next classified based on the generally accepted cost drivers that can be measured in terms of how customers use the system. Costs associated with upstream functions are generally accepted to be a function of the peak demand placed on the system and are classified accordingly. At the other extreme, downstream functions, such as services and metering, are generally a function of the number of sites served.<sup>3</sup>

### 3.1 METHOD

#### *Power Supply*

25. In the context of a vertically integrated and regulated electric utility, power supply requirements are generally considered to be a function of both peak demand and total energy consumed. Power supply is a function of total energy consumed because all else equal, a utility with 50,000 GWh of annual sales would incur higher power supply costs than a utility with 1,000 GWh of annual sales. However, even among two utilities with the same annual sales, generation resource planning (and therefore, cost) will differ based on the peak hourly demand. While a consistently flat electrical load may be better served by larger generating facilities suited for full-on production, a variable and peaking load will require a different mix of generating resources. Options for meeting variable peak demand may include smaller scale facilities, technologies that are able to ramp-up production on relatively short notice, or a combination of the two.
26. In Order UE19-08, the Commission approved the Point Lepreau Cost Allocation Classification Study, which included three main changes. All three changes were introduced in the 2017 study and remain for this 2020 study.
- Twenty-five per cent of Point Lepreau's fixed costs are classified as demand-related, and seventy-five per cent of as energy-related.
  - All combustion turbine fuel costs are classified as energy-related given that most of the combustion turbine's fuel usage occurs to supply energy for the system.
  - A portion of wind purchase power is classified as demand-related, with the remainder energy-related. The demand portion, currently twenty-three per cent, mirrors the ratio of wind power nameplate capacity that is included as capacity for capacity planning purposes.

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<sup>3</sup> Note that CCL's report often uses the term "sites" as opposed to "customers" in the context of a cost allocation study. The purpose of this terminology is to be clear that a cost allocation study is concerned with attributing revenue requirement to distribution points of delivery or "sites." Some customers may actually be served by multiple sites.

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27. Consistent with previous studies, twenty-five percent of MECL's Energy Control Centre (ECC) is functionalized as power supply and this portion is classified as energy related. In the context of power supply, the purpose of the ECC is to manage and coordinate the delivery of energy. The remaining portion of ECC activities are related to long term resource planning, and so the remaining seventy-five percent of the ECC costs are functionalized to transmission and distribution, where classification is discussed as follows.

### *Transmission*

28. Transmission lines are part of a bulk delivery system that ultimately services all utility customers, including wholesale customers. Transmission infrastructure is generally unaffected by the addition of one more customer, unless the addition of that customer is expected to materially affect peak system demand. CCL therefore considers transmission lines to be demand-related and allocates these functions based on coincident peak demand.<sup>4</sup> Coincident peak demand is appropriate for this allocation because transmission facilities must be capable of providing service during the time of system peak. PEI's demand for electricity is at its highest during the winter, and therefore MECL's backbone delivery system must be designed to accommodate peak demand at this time.

### *Distribution Network*

29. Substations are part of a bulk delivery system that services virtually all MECL customers. Like transmission infrastructure, substations are generally unaffected by the addition of one more customer, unless the addition of that customer is expected to materially affect peak system demand. Thus, substations are classified as demand-related and allocated based on coincident peak demand.<sup>5</sup>
30. Functions such as primary lines, transformers, and secondary lines are also part of MECL's distribution network. These facilities must be designed to meet peak demand, the cost of these functions will increase as more customers are added to the system. Expanding the distribution system to service new customers will require MECL to extend distribution lines and install new transformers, and so there will be a base level cost regardless of the capacity that these facilities will be required to carry.
31. This cost allocation study continues with the same basic principles followed in previous MECL cost allocation studies. MECL considers that circumstances have not materially changed and the Company's objective for this study is to apply consistent methods to previous studies and facilitate a more meaningful comparison of results over time. Thus, lines are classified as fifty

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<sup>4</sup> For transmission lines, peak demand is measured at the transmission system level including losses, which as noted earlier are not evenly distributed between rate classes.

<sup>5</sup> The allocator for substations is also adjusted to recognize that some Large Industrial customers are serviced at a transmission voltage and do not use substation facilities.



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per cent demand-related and fifty per cent site-related<sup>6</sup> whereas transformers are classified as sixty per cent demand-related and forty per cent site-related.

### *Services, Metering, and Customer Care*

32. Functions such as service lines, metering, meter reading, billing, remittance & collection, and uncollectibles & damage claims are all classified as site-related. It is generally recognized that the cost of these functions will primarily vary with the number of customers served. Factors other than demand, energy or sites also play a role in cost causation, but these adjustments are made by the choice of allocation and are discussed further in Section 4.
33. Finally, functions associated with service connections and late payments are also classified as site-related. From a cost causation perspective, MECL tracks cost by rate class and so classification of these functions is mainly for presentation purposes. In Section 4, these functions are allocated to rate classes in the exact same proportion as actual revenue.

## 3.2 RESULT

34. MECL's classified revenue requirement is summarized in Table 5 below.

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<sup>6</sup> For the allocation of distribution network functions, allocators are adjusted to recognize that some distribution customers are serviced at a primary voltage and do not use a MECL transformer or secondary line.

<b>Table 5</b>				
<b>Classified 2020 MECL Revenue Requirement (\$,000)</b>				
	Demand	Energy	Site	Total
Operating Expenses				
Energy Costs	28,23154	101,226449	140	129,520
ECAM Adjustment	(223)	(1,110)	0	(1,333)
Net Energy Costs	278,931008	100,039116	140	128,187
Distribution	2,7224	219	2,445	5,188
Transmission	739	0	0	739
T&D - Other	1,443	0	921	2,364
Transmission - OATT	218	0	0	218
General	5,472513	4735	5,3257	11,272
Total Operating Expenses	38,525644	100,60493	8,8303	147,967
Amortization				
Other	2878	5676	55	909
Plant And Equipment	16,75169	2,667424	9,353	28,535
Total Amortization	167,80347	32,234991	9,408	29,445
Total Operating Income	55,328691	103,8483	18,24138	177,412
Financing Expenses				
Long-Term Debt	7,185302	512403	4,74537	12,442
Short-Term Debt	41508	239	269	706
Charged To Construction	(25761)	(184)	(169)	(444)
Amortization of Financing	8	01	5	14
Total Financing Expenses	7,3464	52412	4,85042	12,718
Earnings before Tax	112,14954	853671	7,89481	20,701
Income Taxes	3,649708	2605	2,4069	6,318
Net Earnings	8,306441	592466	5,48476	14,382
Gross Revenue Requirement	745,627304	1054,22056	30,96184	210,831
		6		
OATT Revenue	(2,513)	0	0	(2,513)
Other Revenue	(1,9446)	(119)	(3,049)	(5,005)
Net Revenue Requirement	70,170844	1054,20855	27,93512	203,313
		7		

35. CCL applied the same methods as previous studies and to the extent that results in Table 5 vary from previous studies, it is because different parts of revenue requirement change at varying rates.
36. There was no material change in the share of revenue requirement classified as site-related costs, so this discussion focusses on changes in demand-related and energy-related revenue requirement. The share of revenue requirement classified as demand-related increased by three per cent while the share of energy-related revenue requirement fell by ~~four~~ three per cent. These changes were primarily caused by shifts in energy costs and amortization.
37. Diesel fuel costs for the combustion turbines, which are classified as energy-related, declined by about eighty per cent between 2017 and 2020. During the same period, annual amortization related to transmission infrastructure has grown relative to total revenue requirement. Given that transmission is classified as all demand-related, the result is that a significantly greater portion of amortization is classified as demand-related.

38. Excluding power supply from the analysis, Table 6 also demonstrates the effect of shifts toward transmission, which is primarily classified as demand-related, as noted in Section 2.2 of this report.

<b>Table 6</b>				
<b>Classified MECL Revenue Requirement</b>				
	Demand	Energy	Site	Total
Per cent of total				
2020 Revenue Requirement	35%	5±2%	14%	100%
2017 Revenue Requirement	32%	55%	14%	100%
Excluding Power Supply				
2020 Revenue Requirement	58%	0%	42%	100%
2017 Revenue Requirement	55%	0%	45%	100%

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# 4 ALLOCATION

39. Once revenue requirement is classified between demand, energy, and site-related, the next step is to allocate revenue requirement to rate classes. This requires some consideration of how customers should be grouped into rate classes for purposes of allocation as well as choosing the appropriate allocator for each expense.

## 4.1 RATE CLASSES

40. The rate classes used in the current cost allocation study are consistent with previous cost allocation studies and remain influenced by a 1990s regulatory framework that obliged MECL to adopt the same rate schedules as New Brunswick Power. For the 2014 study, CCL modified its cost allocation model to separate farms from the Residential rate class. Until such time as the issue is resolved, the study continues to show farms as if it were a separate rate class.

## 4.2 ALLOCATORS

41. The final step of the cost allocation study is to allocate the utility's classified revenue requirement to rate classes. The choice of allocation factor is to a large degree influenced by classification. For example, demand-related costs are generally allocated by the same proportions as the peak demand of each rate class. Similarly, energy-related costs are allocated by the same proportions as energy sales and site-related costs are allocated by the relative number of sites within each rate class. Below are some common measures of customer usage that are often used as the basis for allocation to rate classes.
42. New from 2017 is to incorporate the findings of load research from 2020. Residential, Farm, and General Service customers are all typically cumulative-metered. Before 2020, expectations about behaviour was based on load research undertaken in the early 1990s. This new load research was able to replace or at least improve upon certain assumptions made by previous studies. Cost allocation studies are driven by relative changes, so all percentage figures quoted are in reference to the change in total share. For instance, a two-percentage point change to peak demand does not necessarily mean that peak demand increased two percentage points. This could also mean that other rate classes shrunk by a total of two percentage points – or simply grew at a slower rate.

### *Coincident Peak Demand (CP)*

43. Coincident peak represents each rate class's contribution to the utility's peak demand day. This is typically measured over the period of one year, but other variants include the sum of peak summer and peak winter demands as well as the sum of daily peak demand for twelve consecutive months. This type of allocator is often paired with demand-related costs associated with high-voltage transmission. The MECL system peak occurs during the winter due to the combination of lighting and heating demand.

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44. While the coincident peak demand allocator recognizes customers are collectively peaking, it also recognizes that individual customers use energy at different times of the day. For example, a transmission line servicing one 1 MW customer is likely to require higher capacity than a line that services one thousand 1 kW customers who collectively add up to 1 MW. Given that individual customers do not necessarily peak at the same time, this diversity can be factored into transmission system design. The calculation of coincident peak demand also reflects this diversity, making it an appropriate allocator for transmission facilities.
  45. Firm load is used to allocate purchased power costs to account for the fact that interruptible load reduces the amount of generating capacity that needs to be purchased.
  46. Under normal conditions, the MECL system peak reliably occurs during December, when demands for lighting and heating load are at their highest. Contrary to expectations, the 2020 system peak of 257.2 MW occurred on January 17 during a winter storm. However, January 17 was a storm day in PEI, with schools and many businesses closed. This resulted in the Residential load being higher than it otherwise would have been, and General Service and Small Industrial loads being lower than they would otherwise have been. So that the 2020 Cost Allocation Study could be based on more representative loads for the system peak, MECL and CCL agreed to use the second highest peak load for 2020 (255.4 MW on December 16) as the coincident peak for this study.
  47. Notably, updated load data indicate that Residential customers' share of the coincident peak rose by about four percentage points, while shares of coincident peak for Farm, General Service, and Small Industrial each fell. The utility has noted increased use of electric heat among the Residential class, which may explain part of this increase, though the 2020 results may also be influenced by pandemic-related lockdowns. Specific to the farm group, previous studies assumed a residential-like behaviour in the absence of any other information. With load research, the farm share of coincident peak fell by 2.5 percentage points.

### *Non-Coincident Peak Demand (NCP)*

48. Non-coincident peak demand (NCP) represents the peak demand for each rate class without regard for when the peak occurs for other rate classes. Therefore, the sum of all rate class NCPs is (by definition) equal to or greater than the system peak. This type of allocator is typically paired with demand-related costs associated with more localized distribution facilities. NCP is widely recognized as an appropriate allocator for components of the distribution system that must be designed and built to handle local peak demand situations that do not necessarily correspond to the overall system peak.
49. Distribution network functions classified as demand-related are allocated based on non-coincident peak demand. As facilities become more localized, they are more likely to serve one rate class and the needs of specific local customers play a more important role in network design. Individual customers served by a distribution feeder are still diverse, but less so than in a bulk transmission system that services a greater number and a broader mix of customers. Thus, local distribution customers are more likely to peak at the same time compared to a random collection of residential, commercial, and industrial customers. Given that local

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distribution facilities are more likely to serve one rate class, an allocation based on non-coincident rate class peak demand is appropriate. The calculation of non-coincident peak demand reflects diversity within a rate class, but not between rate classes.

50. Based the load research, the farm share of non-coincident peak fell by only 1.5 percentage points compared to 2017. Large industrial customers are (and were in 2017) interval metered; their share of non-coincident peak increased slightly in 2020.

### *Energy Use*

51. An energy allocator is calculated from rate class kWh sales, grossed-up for losses. This allocator is used for power supply classified as energy-related, but is not otherwise used for the other wires-related functions.
52. As per the updated load data, Residential energy sales (relative to total sales) rose by five percentage points from the 2017 level. The utility has noted increased use of electric heat, which may explain part of this increase, though the 2020 results may also be influenced by pandemic-related lockdowns.

### *Number of Sites*

53. The number of sites within each rate class is used to allocate site-related costs. Depending upon the function to be allocated, adjustments are required. For instance, the allocation of the secondary lines function should exclude distribution sites that are just served at the primary voltage. Another adjustment is necessary for lighting fixtures and other unmetered points of delivery, which are high in number but the addition of one more fixture should not cause distribution cost to increase as much as the addition of one more Residential customer, for example.<sup>7</sup>
54. Furthermore, site counts are sometimes weighted if the per-site cost is known to differ between rate classes and neither a demand nor an energy-based allocation is a reasonable alternative. This situation often occurs when a number of factors either directly or indirectly affect the per-site cost and the net impact is material. This is a generally accepted cost allocation practice and in its cost allocation model, CCL weights the site-based allocations of functions such as service lines, meter assets, meter reading, billing, and remittance & collection.
55. While the functions for service connection and late payment revenue are classified as site-related, this is mainly for completeness. This revenue is directly assigned to rate classes according the same proportions as it was collected.

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<sup>7</sup> In this study, CCL discounted the number of lighting fixtures and unmetered points of delivery by a factor of 0.40. CCL selected 0.40 such that the allocated secondary distribution voltage cost per fixture is approximately one fifth of a Residential customer.

56. The share of sites considered Residential rose by two percentage points, while all others fell in relatively equal shares.

### *Summary of Allocators*

<b>Table 7</b>					
<b>Summary of 2020 Peak Demand Allocators</b>					
	Coincident Peak <sup>8</sup> (kW)	Coincident Peak - Firm (kW)	Non-Coincident Peak <sup>9 10</sup> (kW)	Energy Including Losses <sup>8</sup> (MWh)	Sites
Residential	153,982	153,982	151,306	604,483	61,785
Residential (S)	1,835	1,835	6,801	20,423	7,709
Farm	8,780	8,780	11,544	47,023	523
General Service	61,822	61,296	68,196	363,482	7,487
General Service (S)	2	2	2,090	6,978	1,690
Small Industrial	13,236	13,236	19,790	91,606	288
Large Industrial	14,205	4,237	8,870	151,758	6
Lights	1,179	1,179	1,198	4,494	4,727
Unmetered	371	371	364	2,501	281
<b>Total</b>	<b>255,412</b>	<b>244,918</b>	<b>270,160</b>	<b>1,292,749</b>	<b>84,495</b>

## 4.3 RESULT

57. MECL's allocated revenue requirement is shown in detail in Appendix A while a simplified version is shown in Table 8 below.

<sup>8</sup> Calculated at input voltage.

<sup>9</sup> Calculated at primary voltage.

<sup>10</sup> Excludes transmission only customers and transmission losses. Note that for the Residential rate class, the non-coincident peak is lower than the coincident peak because non-coincident peak is used for allocating distribution expenses, and therefore excludes losses on the high-voltage system (i.e., transmission losses).

<b>Table 8</b>						
<b>Allocated 2020 MECL Revenue Requirement (\$,000)</b>						
	Operating Expenses	Capital Expenses	Gross Revenue Requirement	OATT Revenue	Other Revenue	Net Revenue Requirement
Residential	77,766 <del>51</del>	38,453 <del>85</del>	116,219 <del>36</del>	(1,515)	(3,399)	111,222 <del>305</del>
Residential (S)	2,713 <del>2</del>	2,556 <del>4</del>	5,269 <del>3</del>	(18)	(271)	4,980 <del>74</del>
Farm	4,787	1,655 <del>6</del>	6,442	(86)	(107)	6,248
General Service	38,663 <del>58</del>	12,665 <del>39</del>	51,329 <del>78</del>	(608)	(796 <del>7</del> )	49,892 <del>3</del>
General Service (S)	751 <del>0</del>	714 <del>9</del>	1,471 <del>65</del>	(0)	(62)	1,408 <del>3</del>
Small Industrial	9,366 <del>3</del>	2,656 <del>43</del>	12,006 <del>22</del>	(130)	(175)	11,701 <del>6</del>
Large Industrial	12,660 <del>54</del>	2,096 <del>83</del>	14,755 <del>36</del>	(140)	(67)	14,549 <del>30</del>
Lights	965	2,008 <del>12</del>	2,973 <del>7</del>	(12)	(118)	2,843 <del>8</del>
Unmetered	312	118	431 <del>0</del>	(4)	(9)	418 <del>7</del>
Total	147,967	62,864	210,831	(2,513)	(5,005)	203,313

58. Again, results are consistent with prior studies and differences from the 2017 study are largely caused by (1) how MECL's revenue requirement and customer base have evolved since 2017, and (2) the impact of the updated load data. A comparison appears below in Table 9, and explanations regarding changes in MECL's customer base follow below.

<b>Table 9</b>				
<b>Allocated MECL Revenue Requirement</b>				
	Total Revenue Requirement		Excluding Power Supply	
	2020	2017	2020	2017
Residential	55%	50%	63%	61%
Residential (S)	2%	2%	5%	5%
Farm	3%	5%	2%	4%
General Service	25%	26%	19%	19%
General Service (S)	1%	1%	1%	1%
Small Industrial	6%	6%	4%	4%
Large Industrial	7%	8%	2%	2%
Lights	1%	1%	4 <del>3</del> %	3%
Unmetered	0%	0%	0%	0%
Total	100%	100%	100%	100%

### *Residential*

59. As the rate class that consumes the most energy in absolute terms, Residential continues to be allocated the largest share of revenue requirement. This share continues to increase as energy sales and peak demand also increase at a faster rate than the number of customers. CCL understands that electric heating has increased in popularity in the last several years, which might account for the higher sales per household, though for this 2020 study year, we cannot rule out that some of this impact may be due to pandemic lockdowns.
60. Many new homes are installing both resistive and heat pump installations, with the resistive heat sources intended to operate only during the coldest times of the year. Annual system peaks typically occur between mid-December and mid-January, during extended cold snaps.



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Holiday lighting is on, and many of the installed heat pumps are supplemented with resistive heat. The utility believes this has been the main contributing factor to observed higher system peaks.

61. Though Residential is allocated a larger share of revenue requirement, higher sales also mean more revenue. In terms of how this would affect any rate rebalancing, the revenue-to-cost ratio improves by two percentage points.

### *Residential (Seasonal)*

62. The Residential Seasonal rate class's share of revenue requirement is relatively unchanged from 2017. There was a slight reduction in share of sites, although the number of Seasonal Residential sites increased. This difference is most likely due to the comparatively faster growth of the Residential rate class.
63. The shares of coincident peak and non-coincident peak allocated to the Residential Seasonal rate class increased slightly while the share of energy sales stayed consistent with 2017 numbers. Unfortunately, the increase in allocated costs combined with relatively stable sales resulted in a two-percentage point drop in the revenue-to-cost ratio, from ninety-six per cent in 2017 to ninety-four per cent in 2020.

### *Farm*

64. In previous studies, little was known about the behaviour of farms during system peak, and so the default assumption was to assume they behaved similarly to Residential customers. Load research shows that farms are not as "peaky" as previously assumed, which results in fewer expenses allocated to farms. Revenue was always observable and did not change to the same degree as previous studies, and so the revenue-to-cost ratio improves as a result.

### *General Service*

65. Compared to 2017, both sales and non-coincident peak decreased for the General Service rate class, while coincident peak demand increased by about one percentage point. However, all behaviour after March 2020 is likely to have been influenced by the COVID-19 pandemic because sales and revenue also fell, which may have impacted the role of General Service customers in the December 2020 system peak. Demand throughout the year was lower, even though it typically remains stronger (relative to residential) in summer months due to air conditioning load.
66. Overall, the General Service share of cost fell at a faster rate than revenue, leaving the revenue-to-cost ratio three percentage points lower than in 2017.

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### *General Service (Seasonal)*

67. There were slight changes in the consumption patterns from the Seasonal General Service customers. Non-coincident peak, energy, and sites all decreased by a third of a percentage point or less. The coincident peak remained consistent with prior studies.

### *Small Industrial*

68. The Small Industrial share of coincident peak fell by about 0.6 percentage points compared to 2017. This may in part be related to customers shifting to Large Industrial in 2017,<sup>11</sup> and potentially also related to the pandemic.
69. Non-coincident peak decreased by nearly two percentage points. As such, fewer demand-related costs are allocated to the Small Industrial rate class. The share of revenue fell at a slower rate, perhaps due to billing demand minimums. Overall, the revenue-to-cost ratio increased as a result.

### *Large Industrial*

70. The share of sites in the Large Industrial rate class stayed relatively constant, although the share of non-coincident peak increased by just over one percentage point while sales fell slightly.
71. Large Industrial customers are metered on an hourly basis and no assumptions are required to measure their usage during system peak. Revenue from this group changed at a slower rate and the revenue-to-cost ratio improved slightly, and is now within MECL's range of tolerance.

### *Lights*

72. Conversion to LED streetlights means lower energy usage and reduced power supply cost, but not necessarily a lower cost for fixed wires infrastructure to serve this rate class. Compared to 2017, in fact, capital costs (i.e., return and depreciation) directly assigned to lighting has increased. This is attributed to LED conversions and associated capital work to connect the LEDs to the distribution network. Also affecting lighting allocation is the change noted in Section 2.1 on functionalization, in which power supply becomes a smaller proportion of revenue requirement and wires costs a larger proportion. With lighting already attributed a smaller portion of power supply due to the LED conversions, this combination has an amplifying effect such that lighting's share of 2020 revenue requirement increases from 2017. The impact is that Lights' revenue-to-cost ratio falls to seventy-nine per cent.

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<sup>11</sup> For the 2017 study, it was necessary to make assumptions about how much peak load would shift because interval metering was not yet installed for these sites.

# 5 CONCLUSIONS

73. CCL’s 2020 Cost Allocation Study is based on MECL’s 2020 Statement of Earnings. To use these results as a yardstick for the next rate proposal, which would propose to generate a different level of revenue, it is necessary to express the allocated net revenue requirement as a percentage share. This adjustment is shown in Table 10.

Table 10 Allocated 2020 Net Revenue Requirement from Rates		
	Net Revenue Requirement (\$,000)	Per cent Share
Residential	111,305,222	54.7%
Residential (S) <sup>12</sup>	4,980,74	2.4%
Farm	6,248	3.1%
General Service	49,892,3	24.65%
General Service (S)	1,408,3	0.7%
Small Industrial	11,701,6	5.8%
Large Industrial	14,549,30	7.12%
Lights	2,843,8	1.4%
Unmetered	418,7	0.2%
Total	203,313	100.0%

74. Allocated cost in Table 10 is only one yardstick or guideline for designing future rates. Other rate design considerations are equally important and one such consideration is the current structure and level of rates. If the desired change is too significant and would cause rate shock (for example, an increase greater than ten per cent of the total bill), then it may be necessary to adopt additional strategies to implement change gradually. One such indicator of the possibility of rate shock is the revenue-to-cost ratio. Table 11 below calculates revenue-to-cost ratios on current rates as well as providing similarly calculated revenue-to-cost ratios from the 2017 study.

<sup>12</sup> Of note is the very small allocation to Farm customers that are currently billed as Seasonal Residential; this is primarily due to the fact that MECL identified only fifteen such sites in its 2014 data. CCL considers there to be too few customers and too few sales to create an administratively feasible rate. Not only is this too small of a sample to depend on consistent cost allocation results over time, but 2014 usage appears very similar to Seasonal Residential and the administration of such a rate class is likely to be burdensome. Thus, CCL recommends that these two groups remain in the same Seasonal rate class.

<b>Table 11</b>				
<b>Allocated 2020 Net Revenue Requirement from Rates</b>				
	Revenue Collected	Allocated Cost	Revenue-to-Cost Ratio (2020)	Revenue-to-Cost Ratio (2017)
Residential	50.7%	54.7%	93%	91%
Residential (S)	2.3%	2.4%	94%	96%
Farm	2.8%	3.1%	92%	82%
General Service	29.0%	24.56%	118%	121%
General Service (S)	0.7%	0.7%	1032%	113%
Small Industrial	6.3%	5.8%	109%	102%
Large Industrial	6.9%	7.24%	96%	94%
Lights	1.1%	1.4%	79%	91%
Unmetered	0.2%	0.2%	1056%	104%
Total	100.0%	100.0%	100%	100%

75. Given that the objective of a cost allocation study is to fairly allocate revenue requirement to rate classes on a cost causation basis, a ratio below 100 per cent in Table 11 indicates that (all else equal) rate revenues should be raised for that rate class. Similarly, a ratio above 100 per cent indicates that current rate revenues are above cost and should (all else equal) be lowered.
76. What is generally accepted to be a reasonable revenue-to-cost ratio will vary among Canadian provinces and regulators. For MECL's specific circumstances, CCL considers 100 per cent to be a long-term objective, but variances in any given year would be expected and reasonable. Actual rate impacts will depend upon MECL's rate design proposal, and MECL's proposal will need to make such other considerations such as rate shock, whether an overall general rate increase is required, and policy-related decisions falling out from the COVID-19 pandemic.
77. Moreover, one must consider that rates are set prospectively and that normal forecast variances in cost, load, and revenue will mean that the intended revenue-to-cost ratio will rarely be achieved. Pending further rate design analysis, it may be necessary to compromise revenue-to-cost ratio objectives in the short run to mitigate rate shock for one or more rate classes or even subsets of customers within rate classes. In this situation, a short to medium term objective of transitioning customer rates toward a revenue-to-cost ratio between 90 per cent and 110 per cent may be more reasonable, with a long-term goal of bringing the revenue-to-cost ratios within 95 per cent to 105 per cent, as directed by the Commission.
78. The Residential revenue-to-cost ratio improved from 2017 to 2020. Though a greater share of revenue requirement is allocated to Residential, higher sales also means greater revenue and overall, the revenue-to-cost ratio improved by two percentage points.
79. The updated load data showed that the revenue-to-cost ratio for Farm customers is not as low as previously thought. Load research indicated that Farm customers contribute less to the system peak than CCL calculated in 2017, resulting in a reduction in demand-related costs allocated to Farm and an improvement in the revenue-to-cost ratio.
80. The revenue-to-cost ratio for the Small Industrial rate class has increased from 102 per cent to 109 per cent since 2017. Fewer demand-related costs were allocated to Small Industrial

because of a lower share of coincident peak and non-coincident peak. However, share of revenue fell at a slower rate. The current revenue-to-cost ratio is no longer within MECL's desired target range of 95 to 105 per cent.

81. Unit cost is another output from the cost allocation study with potential use for rate design. Unit cost is calculated by dividing billing units into allocated cost for each rate class. In Table 12 below, CCL divides billing demand (i.e., peak demand on the customers' bills) into allocated demand-related cost and number of bills into allocated site-related cost.

<b>Table 12</b>		
<b>Unit Cost Results for Consideration in Rate Design</b>		
	Demand-Related (\$/kW/Mo Billing Demand)	Site-Related (\$/Bill/Mo)
Residential	N/A	25.9 <del>10</del>
Residential (S)	N/A	45.44 <del>39</del>
Farm	N/A	26.1 <del>79</del>
General Service	19.21 <del>39</del>	33.13 <del>04</del>
General Service (S)	8.6 <del>08</del>	687.04 <del>96</del>
Small Industrial	12.59 <del>68</del>	38.98 <del>74</del>
Large Industrial	9.2 <del>08</del>	290.97 <del>00</del>
Lights	N/A	6102.9 <del>35</del>
Unmetered	801.76 <del>99</del>	65.24 <del>6</del>
Total	N/A	1,2036.17 <del>69</del>

82. Site-related unit cost gives some indication for an appropriate monthly service charge. Given that the service line, meter, and billing costs are all considered site-related, a monthly service charge equal to unit cost would at least ensure the utility is recovering the localized fixed costs from every customer regardless of their consumption. One such application is the Seasonal rate, which requires just as much local distribution infrastructure to serve but is billed for only half the year. From a cost-causation perspective, it would be fair for the Seasonal rate class to have a higher monthly service charge to ensure these local infrastructure costs are recovered from each site.<sup>13</sup>
83. Like the site-related unit cost, the demand-related unit cost in Table 12 is calculated as the demand-related cost divided by the kilowatts billed to customers in that rate class. This only applies to rate classes that are metered and billed for peak demand and unit cost also provides useful information for a potential demand charge. Demand-related costs are predominantly related to reserve power supply, transmission, and primary voltage distribution and flowing through the demand-related unit cost in the monthly demand charge helps communicate to these customers the value of reducing peak demand.

<sup>13</sup> Note that there is an offsetting effect in which Seasonal rate classes are allocated fewer demand-related costs because they contribute little to system peak by virtue of being less active in the winter.

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## *Final Remarks*

84. The overall purpose of a cost allocation study is to develop a benchmark to guide rate design. Rates that reflect the full cost of electric utility service are generally accepted as a worthwhile objective, subject to other considerations. MECL's existing rate structure is in place, in part, because MECL was legislated from 1994 to 2004 to operate under price cap regulation based on the New Brunswick tariff. Customer acceptance is an important consideration in rate design and the longevity of the existing structure may make some changes, regardless of their merit, more difficult to accept. It is for this reason that cost allocation results alone should not be the determining factor for rates. The revenue-to-cost ratios in Table 11 indicate that some rates might need to change significantly. As per MECL's Rate Design Application, currently on Docket UE22503 before the Commission, MECL is proposing to rebalance rates gradually and in stages. This will also afford future opportunities to update the cost allocation results for post-pandemic years and confirm directionally how far rate rebalancing should proceed.

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# APPENDIX A: DETAILED SCHEDULES