All our energy.
All the time.

MARITIME ELECTRIC
A FORTIS COMPANY

March 4, 2021

Hand Del 1:58 pm MLA

Island Regulatory & Appeals Commission
PO Box 577
Charlottetown PE C1A 7L1

Dear Commissioners:

Pursuant to Orders UE16-04 and UE20-06, please find enclosed five copies of Maritime Electric's Application and Evidence in support of proposed revisions to the components of the interim Weather Normalization Mechanism and Reserve effective January 1, 2020 and January 1, 2021.

If you require further information, please do not hesitate to contact me at 902-629-3701.

Yours truly,

MARITIME ELECTRIC

Michelle Francis
Vice President,
Finance & Chief Financial Officer

MF10
Enclosures

180 Kent Street • PO Box 1328 • Charlottetown, PE C1A 7N2
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Maritime Electric

C A N A D A

PROVINCE OF PRINCE EDWARD ISLAND

BEFORE THE ISLAND REGULATORY

AND APPEALS COMMISSION

IN THE MATTER of Section 20 of the *Electric Power Act* (R.S.P.E.I. 1988, Cap. E-4) and **IN THE MATTER** of the Application of Maritime Electric Company, Limited for an order of the Commission approving revisions to the components of the interim Weather Normalization Mechanism and Reserve effective January 1, 2020 and January 1, 2021 and for certain approvals incidental to such an order.

Date: March 4, 2021

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1.0 APPLICATION

C A N A D A

PROVINCE OF PRINCE EDWARD ISLAND

BEFORE THE ISLAND REGULATORY
AND APPEALS COMMISSION

IN THE MATTER of Section 20 of the *Electric Power Act* (R.S.P.E.I. 1988, Cap. E-4) and **IN THE MATTER** of the Application of Maritime Electric Company, Limited for an order of the Commission approving revisions to the components of the interim Weather Normalization Mechanism and Reserve effective January 1, 2021 and for certain approvals incidental to such an order.

Introduction

1. Maritime Electric Company, Limited ("Maritime Electric" or "the Company") is a public utility subject to the Electric Power Act ("EPA" or "the Act") engaged in the production, purchase, transmission, distribution and sale of electricity within Prince Edward Island.

2. In recent years, Maritime Electric's sales revenue and energy supply costs have become subject to greater volatility due to variations in temperature from historical averages and increases in the use of electricity for space heating. To mitigate this increasing volatility and the resulting uncertainty with respect to customer rates, the Company sought approval to adopt a Weather Normalization Mechanism and Reserve as part of its General Rate Application filed on October 28, 2015.

3. On February 29, 2016, the Island Regulatory and Appeals Commission ("IRAC" or "the Commission") issued Order UE16-04 which, among other things, approved the adoption of the proposed Weather Normalization Mechanism and Reserve on an interim basis, effective January 1, 2016 to February 28, 2019. The "Application" section of the approved Weather Normalization Mechanism and Reserve requires that revisions to the

components of the formulas contained therein are to be submitted to the Commission for approval on or before October 31 of the year prior to the effective date of the change.

4. On September 27, 2019, IRAC issued Order UE19-08 which approved the Weather Normalization Mechanism and Reserve account on an interim basis until February 28, 2022.

5. On December 19, 2019, IRAC issued Order UE19-10 which approved revisions to the components of the formulas of the interim Weather Normalization Reserve for the 2019 fiscal year.

6. On December 21, 2020, IRAC issued Order UE20-06 which approved revisions to the components of the formulas of the interim Weather Normalization Reserve for the 2020 fiscal year.

Application

5. Maritime Electric hereby applies for an Order from IRAC approving revisions to the components of the interim Weather Normalization Mechanism and Reserve effective January 1, 2020 and January 1, 2021 and for certain approvals incidental to such an Order.

6. The proposals contained in this Application represent a just and reasonable balance of the interests of Maritime Electric and those of its customers and will, if approved, allow the Company to continue to provide a high level of service to customers at a cost that is, in all circumstances, reasonable.

Procedure

7. Filed hereto is the Affidavit of T. Michelle Francis and Angus S. Orford which contains the evidence on which Maritime Electric relies in this Application.

Dated at Charlottetown, Province of Prince Edward Island, this 4th day of March, 2021.

D. Spencer Campbell, Q.C.

STEWART MCKELVEY
65 Grafton Street, PO Box 2140
Charlottetown PE C1A 8B9
Telephone: (902) 629-4549
Facsimile: (902) 892-2485
Solicitors of Maritime Electric Company, Limited

2.0 AFFIDAVIT

C A N A D A

PROVINCE OF PRINCE EDWARD ISLAND

BEFORE THE ISLAND REGULATORY
AND APPEALS COMMISSION

IN THE MATTER of Section 20 of the *Electric Power Act* (R.S.P.E.I. 1988, Cap. E-4) and **IN THE MATTER** of the Application of Maritime Electric Company, Limited for an order of the Commission approving revisions to the components of the interim Weather Normalization Mechanism and Reserve effective January 1, 2020 and January 1, 2021 and for certain approvals incidental to such an order.

We, T. Michelle Francis of Emyvale and Angus Sumner Orford of Charlottetown, in Queens County, Province of Prince Edward Island, MAKE OATH AND SAY AS FOLLOWS:

1. We are the Vice President, Finance and Chief Financial Officer and Vice President, Corporate Planning and Energy Supply for Maritime Electric Company, Limited ("Maritime Electric" or the "Company") respectively and as such have personal knowledge of the matters deposed to herein, except where noted, in which case we rely upon the information of others and in which case we verily believe such information to be true.

2. Maritime Electric is a public utility subject to the provisions of the Electric Power Act ("EPA") engaged in the production, purchase, transmission, distribution and sale of electricity within Prince Edward Island.

3. We prepared or supervised the preparation of the evidence and to the best of our knowledge and belief the evidence is true in substance and in fact. A copy of the evidence is attached to this our Affidavit, and is collectively known as Exhibit "A", contained at Sections 4 through 6 and Appendices A through C inclusive.

4. Section 7 contains a Proposed Order of the Commission based on the Company's Application.

SWORN TO SEVERALLY at
Charlottetown, Prince Edward
Island, the 4th day of March, 2021.
Before me:

T. Michelle Francis

Angus S. Orford

A Commissioner for taking affidavits
in the Supreme Court of Prince Edward Island.

3.0 INTRODUCTION

3.1 Corporate Profile

Maritime Electric Company, Limited ("Maritime Electric" or the "Company") owns and operates a fully integrated system providing for the purchase, generation, transmission, distribution and sale of electricity throughout Prince Edward Island ("PEI"). The Company's head office is located in Charlottetown with generating facilities in Charlottetown and Borden-Carleton. The Company has contractual entitlement to capacity and energy from NB Power's Point Lepreau Nuclear Generating Station ("Point Lepreau") and an agreement for the purchase of capacity and system energy from NB Power delivered via two submarine cables leased from the Province of PEI. The Company purchases 92.5 megawatts ("MW") of wind powered energy under contract with the PEI Energy Corporation.

3.2 Overview of Evidence

Weather normalization reserves are common in approach throughout the utility industry and are part of a broader group of deferral reserves designed to mitigate volume or demand fluctuations. The purpose of a Weather Normalization Reserve is to stabilize electricity rates charged to customers by removing the volatility in sales and energy supply costs caused by temperature changes relative to historical averages. Where the Heating Degree Days[1] ("HDD") variation is above normal (colder temperature than historical average), the Company will experience incremental marginal net revenue (revenue less energy costs) which would need to be returned to customers and when the HDD variation is below normal (warmer temperature than historical average) there will be a shortfall in net revenue which will need to be recovered from customers.

In recent years, Maritime Electric's sales revenues and energy supply costs have become subject to greater volatility due to variations in the number of HDDs and increases in the use of electricity for space heating. To mitigate this increasing volatility and the resulting

[1] http://climate.weather.gc.ca./glossary_e.html - Heating degree-days for a given day are the number of degrees Celsius that the mean temperature is below 18°C. If the temperature is equal to or greater than 18°C, then the number will be zero. For example, a day with a mean temperature of 15.5°C has 2.5 heating degree-days; a day with a mean temperature of 20.5°C has zero heating degree-days.

uncertainty with respect to customer electricity rates, the Company submitted a proposal to adopt a Weather Normalization Reserve as part of its General Rate Application filed on October 28, 2015.

In Commission Orders UE16-04 and UE16-04R, the Commission granted interim approval to adopt a Weather Normalization Reserve for the period January 1, 2016 to February 28, 2019 but expressed concerns about the impact that it may have on the Rate of Return Adjustment ("RORA") account. As a result, the Commission also ordered the Company to provide the monthly balance of the Weather Normalization Reserve as part of its monthly reporting requirements to IRAC and to also file the year-end balance of the Weather Normalization Reserve on or before February 28th of each of 2017, 2018 and 2019. The Commission has indicated it will determine whether to approve a permanent Weather Normalization Reserve based on its review of these monthly and annual reports.

The interim Weather Normalization Reserve states that "Revisions to the components of the [megawatt hour] MWh Variation from Average and Marginal Net Revenue formulas for a calendar year are to be submitted to the Commission for approval on or before October 31 of the year prior thereto".

On November 30, 2018, the Company filed an application with the Commission to approve the rates, tolls and charges for electric service for the years March 1, 2019 to February 28, 2022, including approval of the Weather Normalization Mechanism and Reserve account for 2019 and future years. In Commission Order UE19-08, the Commission approved continuation of the Weather Normalization Mechanism and Reserve account on an interim basis until February 28, 2022 with no change to the method of calculation that has been used since 2016. The Company was also ordered to continue filing the monthly balance of the Weather Normalization Reserve account on or before January 31 in each of 2020, 2021 and 2022.

On December 18, 2019, Grant Thornton LLP provided a report to the Commission on their review of the Company's Weather Normalization Reserve and Adjustments. Grant Thornton concluded that the 2019 variables were calculated in accordance with the approved definition and there were no material variances. In Commission Order UE19-10, the Commission approved revisions to the Weather Normalization Marginal Net Revenue Variables for the 2019 fiscal year and ordered the Company to file the proposed Weather Normalization Marginal Net Revenue Variables for 2020 with the Commission on or before January 31, 2020.

Pursuant to Commission Order UE19-08, the Company filed an application with the Commission on January 31, 2020, requesting approval of changes to the Schedule of Rates effective March 1, 2020 and March 2, 2021, including the proposed revisions to the variables of the Weather Normalization Reserve account for January 1, 2020. Further amendments to this application were filed on February 10, 2020 and on February 14, 2020. Grant Thornton LLP, as engaged by the Commission to review the application including the proposed variables for the period January 1, 2020 to December 31, 2020, issued a report on the application on October 14, 2020. Their findings on the proposed Weather Normalization Mechanism are found in Section 10 of the report.

On December 21, 2020, IRAC issued Order UE20-06 which approved the variables for the 2020 fiscal period as proposed in the original application. However, no changes to customer rates or the ECAM base rate were approved by the Commission in 2020 and the variables for the period January 1, 2020 to December 31, 2020 approved by the Commission in Order UE20-06 should be revised to reflect this. Section 5.0 in this Application is filed in support of the proposed revisions to the components of the MWh Variation from Average and Marginal Net Revenue formulas for the period beginning January 1, 2020.

Further, the evidence in Section 6.0 of this Application is filed in support of the proposed revisions to the components of the MWh Variation from Average and Marginal Net Revenue formulas for the period beginning January 1, 2021.

3.3 Operation of Maritime Electric's Approved Interim Weather Normalization Reserve and its Components

The balance of the Weather Normalization Reserve on the Company's balance sheet represents the cumulative monthly change in the contribution of sales resulting from variations in HDDs from the normal ten year average.

When HDDs in a month are higher than the normal ten year average for that month, a marginal net revenue amount will be subtracted on the Company's income statement and added to the Reserve as an amount owing to the customer. However, when HDDs in a month are lower than the normal ten year average for that month, a marginal net revenue amount will be added to the Company's income statement and subtracted from the Reserve as an amount recoverable from the customer.

As a formula, the monthly contribution to the Weather Normalization Reserve is a product of the two components as expressed below:

Contributions to Weather Normalization Reserve	=	MWh Variation From Average	X	Marginal Net Revenue

Where,

MWh Variation from Average = (Actual HDD Value – Average HDD Value) X (MWh per HDD Coefficient)

Marginal Net Revenue = Forecast Unit Revenue per MWh – Forecast Unit Energy Cost per MWh

4.0 PROPOSED REVISIONS TO JANUARY 1, 2020 COMPONENTS OF THE WEATHER NORMALIZATION RESERVE

4.1 Components Approved in Order UE20-06

The Commission's Order UE20-06 approved the Weather Normalization Adjustment Variables for the period January 1, 2020 to December 31, 2020 as submitted by the Company in the revised application ("Application") for rates effective March 1, 2020 and March 2, 2021 submitted on February 14, 2020. The variables submitted for approval effective January 1, 2020 were based on the approval of rates effective March 1, 2020. As no change in rates was approved in 2020, the variables approved by the Commission in Order UE20-06 should be updated to reflect this fact.

In addition, the Application was reviewed by Grant Thornton LLP who issued a report on the Application on October 14, 2020. In Section 10 of their report, Grant Thornton discusses their review of the Weather Normalization Mechanism. Their findings have been incorporated into this section.

4.2 MWh Variation from Average

There are two elements of the MWH Variation from Average component of the Weather Normalization Reserve Account:

- Average HDD value; and
- MWh per HDD Coefficient.

4.2.1 Average HDD Value

The Average HDD Value is calculated using the rolling 10 year average HDD value based upon the most recent 10 years of information available as measured by Environment Canada for the Charlottetown Airport weather station. In the Application, the Average HDD Value for 2020 of 4,386 was calculated based upon the 10-year period from 2009 to 2018 and no update is required to this variable.

4.2.2 MWh Per HDD Coefficient

In Section 10.3 of their report, Grant Thornton noted three minor variations in the HDD values reported by the Company in 2018 that changed the proposed coefficient from $68.07 to $67.91 and further suggested that the coefficient be adjusted to $67.91 in their conclusion in Section 10.4. The Company is in agreement and, therefore, proposes that the MWh per HDD Coefficient for 2020 be adjusted to $67.91. An updated calculation of the MWh/HDD Coefficient for 2020 is provided in Schedule 2 of Appendix A.

4.3 Marginal Net Revenue

The Marginal Net Revenue rate is calculated as the Forecast Unit Revenue per MWh less the Forecast Unit Energy Cost per MWh. As a result, there are two elements of the Marginal Net Revenue component that require revision for the period beginning January 1, 2020:

- Forecast Unit Revenue per MWh; and
- Forecast Unit Energy Cost per MWh.

4.3.1 Forecast Unit Revenue Per MWh

For 2020, the approved Unit Revenue per MWh of $145.29 in Order UE20-06 was based upon the forecast 2020 information provided in the Application including the proposed new rates being approved on March 1, 2020. The revised Forecast Unit Revenue per MWh proposed for 2020 has been updated with actual results to December 31, 2020 based on the actual approved rates. Using these inputs, the Forecast Unit Revenue per MWh for 2020 is $143.55 as detailed in Appendix A – Schedule 3.

4.3.2 Forecast Unit Energy Cost Per MWh

The Forecast Unit Energy Cost per MWh is the Commission approved base rate for the Energy Cost Adjustment Mechanism (“ECAM”) for the particular year. The Application proposed a corresponding increase in the ECAM base rate on March 1, 2020 to $92.25 per MWh. However, there was no change the ECAM base rate

approved by the Commission in 2020 and the existing ECAM base rate of $91.61 remained in effect for the year. Therefore, the Forecast Unit Energy Cost per MWh for 2020 is $91.61 as shown in Appendix A – Schedule 3.

4.4 Impact of Proposed Revisions on the Balance of the Weather Normalization Reserve

The general ledger balance of the Weather Normalization Reserve on December 31, 2020 was $362,731 receivable from customers. A schedule of the monthly change in the Weather Normalization Reserve from its inception on January 1, 2016 to December 31, 2020 is provided in Appendix B – Schedule 1. Schedule 1 reflects the following:

- An adjustment of $7,320 recoverable from customers in January 2020 to reflect adjustments recommended in Grant Thornton LLP Report on the Weather Normalization Reserve dated December 18, 2019;
- The Weather Normalization Adjustment Variables for the period January 1, 2020 to December 31, 2020, which were approved in UE20-06, Item 29 and as proposed in the Application for rates effective March 1, 2020 and March 2, 2021; and
- An adjustment of $1,057,328 to reflect UE20-06, Item 26 ordering the Weather Normalization Reserve balance at December 31, 2019 be applied to the RORA balance as of December 31, 2020.

Appendix B – Schedule 2 shows the monthly change in the Reserve from January 1, 2016 to December 31, 2020 updated to reflect the following updates to the inputs:

- A further adjustment of $479 payable to customers identified in Section 10 of Grant Thornton LLP's Report on the Maritime Electric 2020-2021 Rate Application dated October 14, 2020;
- A further adjustment of $26 recoverable from customers to reflect the proper 10 Year Average Monthly Heating Degree Days for November and December 2019 to reflect adjustments identified in the Grant Thornton LLP Report on the Weather Normalization Reserve dated December 18, 2019 and approved in Commission Order UE19-10; and

- An adjustment of $9,035 payable to customers to reflect revisions to the January 1, 2020 components of the Weather Normalization Reserve as proposed in Sections 5.2 and 5.3 above.

The revised balance of the Weather Normalization Reserve account including the above noted adjustments is $353,243 receivable from customers on December 31, 2020. The net of the above adjustments of $9,488 payable to customers will be reflected in the 2021 fiscal year pending the Commission's approval of the proposed revisions to the January 1, 2020 components of the Weather Normalization Reserve.

5.0 PROPOSED JANUARY 1, 2021 COMPONENTS OF THE WEATHER NORMALIZATION RESERVE

5.1 Overview of Proposed January 1, 2021 Components

The proposed components to the Weather Normalization Reserve set out in this section reflect customer electricity rates effective January 1, 2021 approved by the Commission in Order UE20-06.

5.2 MWh Variation from Average

There are two elements of the MWH Variation from Average components that require revision for the period beginning January 1, 2021:

- Average HDD value; and
- MWh per HDD Coefficient.

5.2.1 Average HDD Value

The Average HDD Value is calculated using the rolling 10 year average HDD value based upon the most recent 10 years of information available as measured by Environment Canada for the Charlottetown Airport weather station[2].

The updated Average HDD Value proposed to be used for 2021 is 4,394 based upon the 10-year period from 2010 to 2019, as calculated in Appendix C – Schedule 1.

5.2.2 MWh Per HDD Coefficient

The determination of the MWh Per HDD Coefficient (the "Coefficient") to be used for 2021 is calculated using econometric modelling with a linear regression analysis, consistent with prior years. The linear regression analysis identifies the estimated change in MWh sales (customer usage) resulting from a unit variation in HDD.

[2] Where no data is available from Environment Canada for the Charlottetown Airport weather station, data available for the nearest weather station (for example, Harrington PEI weather station) is used.

The revised Coefficient proposed for 2021 is 72.30 MWh per HDD based upon the data from October 2019 to May 2020 as calculated in Appendix C – Schedule 2.

5.3 Marginal Net Revenue

The Marginal Net Revenue rate is calculated as the Forecast Unit Revenue per MWh less the Forecast Unit Energy Cost per MWh. As a result, there are two elements of the Marginal Net Revenue component that require revision for the period beginning January 1, 2021:

- Forecast Unit Revenue per MWh; and
- Forecast Unit Energy Cost per MWh.

5.3.1 Forecast Unit Revenue Per MWh

The revised Forecast Unit Revenue per MWh proposed for 2021 has been updated with actual results to December 31, 2020 and reflects the 2021 rate adjustments approved in Order UE20-06. Using these inputs, the Forecast Unit Revenue per MWh for 2021 is $147.00 as detailed in Appendix C – Schedule 3.

5.3.2 Forecast Unit Energy Cost Per MWh

The Forecast Unit Energy Cost per MWh is the Commission approved base rate for the ECAM for the particular year. For 2021, the ECAM base rate of $92.44 per MWh was proposed in Section 4.1 of the Application.

This ECAM base rate for 2021 was not expressly approved by the Commission in Order UE20-06. However, it is the basis for the energy costs included in the revenue requirement in the calculation of the approved customer rates for January 1, 2021. The calculation of the proposed ECAM base rate was provided in Attachment 2 of the Final Submission to Commission Staff on the General Rate Application Docket UE20944 filed on December 18, 2020. It is, therefore, requested that the ECAM base rate of $92.44 per MWh be approved effective January 1, 2021 in this application and this rate is included in Appendix C – Schedule 3.

5.3.3 Summary

Using the Forecast Unit Revenue per MWh and Forecast Unit Energy Cost per MWh for 2021 as described above, the 2021 Marginal Net Revenue Rate is calculated to be $54.56 per MWh as detailed in Appendix C – Schedule 3.

6.0 SUMMARY

The Weather Normalization Mechanism and Reserve was approved by IRAC, on an interim basis, in Order UE16-04 effective for the period January 1, 2016 to February 28, 2019. Its interim approval was further extended to February 28, 2022 in Order UE19-08.

The Company proposes that the Commission approve the revisions to the Weather Normalization Mechanism variables for 2020 and 2021 as outlined in this application and summarized in the table below.

Summary of Proposed Revisions to Weather Normalization Mechanism Variables			
	Approved UE20-06 January 1, 2020	**Proposed Revision January 1, 2020**	**Proposed January 1, 2021**
MWH Variation from Average			
Average HDD Value	4,386	4,386	4,394
MWH per HDD Coefficient	68.07	67.91	72.30
Marginal Net Revenue			
Forecast Unit Revenue per MWh	$145.29	$143.55	$147.00
Forecast Unit Energy Cost per MWh	$92.25[3]	$91.61[4]	$92.44

Further the Company requests the Commission approve the ECAM base rate of $92.44[5] per MWh effective January 1, 2021.

[3] Proposed ECAM base rate of $92.25 not approved.
[4] Existing ECAM base rate of $91.61 remained in effect for year.
[5] Included in Attachment 2 – Supporting Calculations of Final Submission to Commission Staff on the General Rate Application Docket UE20944 filed on December 18, 2020.

7.0 PROPOSED ORDER

C A N A D A

PROVINCE OF PRINCE EDWARD ISLAND

BEFORE THE ISLAND REGULATORY

AND APPEALS COMMISSION

IN THE MATTER of Section 20 of the *Electric Power Act* (R.S.P.E.I. 1988, Cap. E-4) and **IN THE MATTER** of the Application of Maritime Electric Company, Limited for an order of the Commission approving revisions to the components of the Weather Normalization Reserve, including the MWh Variation from Average and Marginal Net Revenue, for the period beginning January 1, 2021 and for certain approvals incidental to such an order.

UPON receiving an Application by Maritime Electric Company, Limited (the "Company") for approval of proposed revisions to the Weather Normalization Reserve;

AND UPON considering the Application and Evidence filed in support thereof;

NOW THEREFORE for the reasons given in the annexed Reasons for Order and pursuant to the Electric Power Act.

IT IS ORDERED THAT

The ECAM base rate of $92.44 per MWh as proposed in Attachment 2 of the Final Submission to Commission Staff on the General Rate Application Docket UE20944 effective January 1, 2021 is approved; and

The revisions to the components of the interim Weather Normalization Reserve for the period beginning January 1, 2020 and January 1, 2021 filed herein on March XX, 2021 and summarized below are approved.

Approved Weather Normalization Mechanism Variables		
	Effective Date January 1, 2020	**Effective Date January 1, 2021**
Average HDD Value	4,386	4,394
MWH per HDD Coefficient	67.91	72.30
Forecast Unit Revenue per MWh	$143.55	$147.00
Forecast Unit Energy Cost per MWh	$91.61	$92.44

DATED at Charlottetown this ____ day of ____, 2021

BY THE COMMISSION:

_____

_____, Chair

_____

_____, Commissioner

_____

_____, Commissioner

_____

_____, Commissioner

APPENDIX A

Proposed Revised Components of 2020 Weather Normalization Reserve Account

Schedule 1 – Calculation of 10 Year Average HDD

Schedule 2 – Calculation of MWh/HDD Coefficient

Schedule 3 – Calculation of Forecast Marginal Net Revenue Rate

Appendix A
Schedule 1
Calculation of 10-Year Average HDD

Month	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	10 year average (2009 - 2018)
January	866	686	744	715	812	771	829	713	712	764	761
February	664	608	697	700	672	717	858	628	657	621	682
March	675	556	621	572	603	760	743	654	690	602	648
April	420	367	420	379	441	453	537	475	416	445	435
May	245	262	259	224	235	308	233	259	264	280	257
June*	102	114	150	119	107	120	163	121	94	168	126
July	42	13	21	12	13	1	28	30	27	14	20
August	30	21	14	5	17	28	3	23	29	9	18
September*	135	107	90	76	106	118	73	101	92	126	102
October*	345	290	249	240	291	228	315	255	203	339	275
November	392	429	397	424	472	461	420	401	440	520	436
December	643	515	569	589	744	582	545	665	695	709	626
	4,559	3,968	4,231	4,055	4,513	4,547	4,747	4,325	4,319	4,596	**4,386**
								Standard Deviation			250

Appendix A
Schedule 2
Calculation of MWh/HDD Coefficient

Year	Month	Days in month	Actual HDD	HDD per day	Reported sales (MWh)	Fewer hours of daylight	Average HDD per day	Average MWh per day
		A	B	C = B / A	D	E	F = (C + C of Prior Month)/2	G = F / A of Prior Month
2018	Jul	31	14	0.5	74,378			
	Aug	31	9	0.3	84,692			
	Sep	30	126	4.2	81,747			
	Oct	31	339	10.9	75,686	2.52	7.6	2,523
	Nov	30	520	17.3	89,804	4.07	14.1	2,897
	Dec	31	709	22.9	103,979	5.21	20.1	3,466
2019	Jan	31	757	24.4	112,477	5.40	23.6	3,628
	Feb	28	737	26.3	116,531	4.53	25.4	3,759
	Mar	31	638	20.6	102,342	3.11	23.4	3,655
	Apr	30	449	15.0	93,021	1.53	17.8	3,001
	May	31	352	11.3	84,397	0.00	13.2	2,813
	Jun	30	106	3.5	81,030			

Linear regression results:
(Oct 2018 - May 2019)

	HDD	Daylight hrs	b	
*	67.91	34.11	1873.33	coefficients
	6.44	21.15	101.94	standard error coefficients
	0.97	87.47	#N/A	R^2, standard error y
	96.25	5.00	#N/A	F, degrees of freedom
	1472762	38252.86	#N/A	Regression SS, residual SS
	10.54	1.61	18.38	t values

* This coefficient is the estimated change in sales (in MWh) for a change of 1 HDD.

Appendix A
Schedule 3
Calculation of Forecast Marginal Net Revenue Rate for 2020

Rate Class	2020 (Actual) Revenue ($)	Sales (MWh)	Unit Revenue ($/MWh)	
	A	B		
Residential	89,411,391	651,506		*
General Service	56,690,272	363,528		*
Small Industrial	12,761,587	91,606		
Total	158,863,250	1,106,640	$ 143.55	C = A / B
Forecast Unit Energy Cost per MWh			(91.61)	D
Marginal Net Revenue Rate			$ 51.94	E = C + D

* Excludes revenue and kWh sales from seasonal customers

APPENDIX B

Monthly Change in Weather Normalization Reserve
January 1, 2016 – December 31, 2020

Schedule 1 - Monthly Change in Weather Normalization Reserve –
January 1, 2016 to December 31, 2020

Schedule 2 - Adjusted Monthly Change in Weather Normalization Reserve –
January 1, 2016 to December 31, 2020

Appendix B
Schedule 1
Monthly Change in Weather Normalization Reserve - January 1, 2016 to December 31, 2020

	Heating Degree Days (below 18 deg C)			Space heating load			Weather Normalization Reserve	
MM/YY	Actual HDD	10 Year Average Monthly HDD	Variation from 10 Year Average HDD	Coefficient (MWh/HDD)	Variation from Average (MWh)	Marginal Net Revenue ($/MWh)	Increase (Decrease) ($)	Balance Owing (Recoverable) ($)
	A	B	C = A - B	D	E = C X D	F	G = E X F	H = Sum of G
January, 2016	713.0	753.9	(40.9)	41.73	(1,707)	50.42	(86,055)	(86,055)
February, 2016	628.2	688.2	(60.0)	41.73	(2,504)	50.42	(126,242)	(212,296)
March, 2016	654.0	637.2	16.8	41.73	701	50.42	35,348	(176,949)
April,2016	475.0	420.6	54.4	41.73	2,270	50.42	114,459	(62,490)
May, 2016	259.0	264.5	(5.5)	41.73	(230)	50.42	(11,572)	(74,062)
June, 2016	121.0	110.0	11.0	41.73	459	50.42	23,144	(50,917)
July, 2016	30.0	16.5	13.5	41.73	563	50.42	28,404	(22,513)
August, 2016	23.0	24.2	(1.2)	41.73	(50)	50.42	(2,525)	(25,038)
September, 2016	101.0	107.1	(6.1)	41.73	(255)	50.42	(12,835)	(37,872)
October, 2016	255.0	272.8	(17.8)	41.73	(743)	50.42	(37,452)	(75,324)
November, 2016	401.0	421.8	(20.8)	41.73	(868)	50.42	(43,764)	(119,088)
December, 2016	665.0	620.5	44.5	41.73	1,857	50.42	93,629	(25,459)
January, 2017	712.0	751.4	(39.4)	43.21	(1,702)	49.56	(84,375)	(109,833)
February, 2017	657.0	704.2	(47.2)	43.21	(2,040)	49.56	(101,078)	(210,912)
March, 2017	690.0	646.1	43.9	43.21	1,897	49.56	94,011	(116,900)
April,2017	416.0	433.7	(17.7)	43.21	(765)	49.56	(37,904)	(154,805)
May, 2017	264.0	256.4	7.6	43.21	328	49.56	16,275	(138,529)
June, 2017	94.0	114.6	(20.6)	43.21	(890)	49.56	(44,115)	(182,644)
July, 2017	27.0	16.4	10.6	43.21	458	49.56	22,700	(159,944)
August, 2017	29.0	22.8	6.2	43.21	268	49.56	13,277	(146,667)
September, 2017	92.0	106.2	(14.2)	43.21	(614)	49.56	(30,409)	(177,076)
October, 2017	202.8	279.6	(76.8)	43.21	(3,319)	49.56	(164,466)	(341,542)
November, 2017	439.7	423.6	16.1	43.21	696	49.56	34,478	(307,064)
December, 2017	695.4	613.2	82.2	43.21	3,552	49.56	176,030	(131,034)
January, 2018	764.4	760.1	4.3	46.66	201	51.38	10,309	(120,725)
February, 2018	620.8	699.3	(78.5)	46.66	(3,663)	51.38	(188,195)	(308,920)
March, 2018	602.0	652.1	(50.1)	46.66	(2,338)	51.38	(120,109)	(429,030)
April,2018	445.1	440.1	5.0	46.66	233	51.38	11,987	(417,043)
May, 2018	279.9	261.9	18.0	46.66	840	51.38	43,153	(373,890)
June, 2018	168.4	121.2	47.2	46.66	2,202	51.38	113,157	(260,733)
July, 2018	14.0	18.9	(4.9)	46.66	(229)	51.38	(11,747)	(272,480)
August, 2018	9.4	19.9	(10.5)	46.66	(490)	51.38	(25,173)	(297,653)
September, 2018	124.7	104.7	20.0	46.66	933	51.38	47,948	(249,705)
October, 2018	338.7	276.1	62.6	46.66	2,921	51.38	150,077	(99,628)
November, 2018	519.5	426.3	93.2	46.66	4,349	51.38	223,437	123,809
December, 2018	709.0	620.5	88.5	46.66	4,129	51.38	212,169	335,978
January, 2019	756.5	757.6	(1.1)	50.19	(55)	52.09	(2,876)	333,102
February, 2019	736.8	688.7	48.1	50.19	2,414	52.09	125,750	458,852
March, 2019	637.5	656.8	(19.3)	50.19	(969)	52.09	(50,457)	408,395
April,2019	448.8	432.6	16.2	50.19	813	52.09	42,352	450,747
May, 2019	351.6	257.5	94.1	50.19	4,723	52.09	246,010	696,757
June, 2019	105.9	118.5	(12.6)	50.19	(632)	52.09	(32,941)	663,817
July, 2019	25.5	18.7	6.8	50.19	341	52.09	17,778	681,594
August, 2019	17.3	19.0	(1.7)	50.19	(85)	52.09	(4,444)	677,150
September, 2019	142.6	101.9	40.7	50.19	2,043	52.09	106,404	783,554
October, 2019	298.9	271.6	27.3	50.19	1,371	52.09	71,424	854,977
November, 2019	478.7	425.7	53.0	50.19	2,660	52.09	138,560	993,538
December, 2019	638.3	613.9	24.4	50.19	1,225	52.09	63,790	1,057,328
January 2020 Adjustment per 2019 GT Report							(7,320)	1,050,008
January, 2020	732.7	761.2	(28.5)	68.07	(1,943)	53.04	(103,042)	946,966
February, 2020	687.0	682.2	4.8	68.07	328	53.04	17,402	964,368
March, 2020	645.8	647.6	(1.8)	68.07	(123)	53.04	(6,499)	957,870
April, 2020	457.6	435.3	22.3	68.07	1,517	53.04	80,477	1,038,346
May, 2020	288.2	256.9	31.3	68.07	2,131	53.04	113,043	1,151,389
June, 2020	102.6	125.8	(23.2)	68.07	(1,582)	53.04	(83,906)	1,067,482
July, 2020	31.7	20.1	11.6	68.07	790	53.04	41,881	1,109,363
August, 2020	24.5	17.9	6.6	68.07	447	53.04	23,684	1,133,048
September, 2020	113.4	102.3	11.1	68.07	758	53.04	40,184	1,173,232
October, 2020	281.5	275.7	5.8	68.07	394	53.04	20,904	1,194,136
November, 2020	397.2	435.5	(38.3)	68.07	(2,608)	53.04	(138,352)	1,055,785
December, 2020	525.6	625.6	(100.0)	68.07	(6,810)	53.04	(361,188)	694,597
December 2019 Balance to RORA per UE20-06							(1,057,328)	(362,731)

Appendix B
Schedule 2
Adjusted Monthly Change in Weather Normalization Reserve - January 1, 2016 to December 31, 2020

	Heating Degree Days (below 18 deg C)			Space heating load			Weather Normalization Reserve	
MM/YY	Actual HDD	10 Year Average Monthly HDD	Variation from 10 Year Average HDD	Coefficient (MWh/HDD)	Variation from Average (MWh)	Marginal Net Revenue ($/MWh)	Increase (Decrease) ($)	Adjusted Balance Owing (Recoverable) ($)
	A	B	C = A - B	D	E = C X D	F	G = E X F	H = Sum of G
January, 2016	713.0	753.9	(40.9)	41.73	(1,707)	50.42	(86,055)	(86,055)
February, 2016	628.2	688.2	(60.0)	41.73	(2,504)	50.42	(126,242)	(212,296)
March, 2016	654.0	637.2	16.8	41.73	701	50.42	35,348	(176,949)
April,2016	475.0	420.6	54.4	41.73	2,270	50.42	114,459	(62,490)
May, 2016	259.0	264.5	(5.5)	41.73	(230)	50.42	(11,572)	(74,062)
June, 2016	121.0	110.0	11.0	41.73	459	50.42	23,144	(50,917)
July, 2016	30.0	16.5	13.5	41.73	563	50.42	28,404	(22,513)
August, 2016	23.0	24.2	(1.2)	41.73	(50)	50.42	(2,525)	(25,038)
September, 2016	101.0	107.1	(6.1)	41.73	(255)	50.42	(12,835)	(37,872)
October, 2016	255.0	272.8	(17.8)	41.73	(743)	50.42	(37,452)	(75,324)
November, 2016	401.0	421.8	(20.8)	41.73	(868)	50.42	(43,764)	(119,088)
December, 2016	665.0	620.5	44.5	41.73	1,857	50.42	93,629	(25,459)
January, 2017	712.0	751.4	(39.4)	43.21	(1,702)	49.56	(84,375)	(109,833)
February, 2017	657.0	704.2	(47.2)	43.21	(2,040)	49.56	(101,078)	(210,912)
March, 2017	690.0	646.1	43.9	43.21	1,897	49.56	94,011	(116,900)
April,2017	416.0	433.7	(17.7)	43.21	(765)	49.56	(37,904)	(154,805)
May, 2017	264.0	256.4	7.6	43.21	328	49.56	16,275	(138,529)
June, 2017	94.0	114.6	(20.6)	43.21	(890)	49.56	(44,115)	(182,644)
July, 2017	27.0	16.4	10.6	43.21	458	49.56	22,700	(159,944)
August, 2017	29.0	22.8	6.2	43.21	268	49.56	13,277	(146,667)
September, 2017	92.0	106.2	(14.2)	43.21	(614)	49.56	(30,409)	(177,076)
October, 2017	202.8	279.6	(76.8)	43.21	(3,319)	49.56	(164,466)	(341,542)
November, 2017	439.7	423.6	16.1	43.21	696	49.56	34,478	(307,064)
December, 2017	695.4	613.2	82.2	43.21	3,552	49.56	176,030	(131,034)
January, 2018	764.4	760.1	4.3	46.66	201	51.38	10,309	(120,725)
February, 2018	620.8	699.3	(78.5)	46.66	(3,663)	51.38	(188,195)	(308,920)
March, 2018	602.0	652.1	(50.1)	46.66	(2,338)	51.38	(120,109)	(429,030)
April,2018	445.1	440.1	5.0	46.66	233	51.38	11,987	(417,043)
May, 2018	279.9	261.9	18.0	46.66	840	51.38	43,153	(373,890)
June, 2018	167.6	121.2	46.4	46.66	2,165	51.38	111,239	(262,651)
July, 2018	14.0	18.9	(4.9)	46.66	(229)	51.38	(11,747)	(274,398)
August, 2018	9.4	19.9	(10.5)	46.66	(490)	51.38	(25,173)	(299,571)
September, 2018	125.7	104.7	21.0	46.66	980	51.38	50,345	(249,225)
October, 2018	338.7	276.1	62.6	46.66	2,921	51.38	150,077	(99,149)
November, 2018	519.5	426.3	93.2	46.66	4,349	51.38	223,437	124,288
December, 2018	709.0	620.5	88.5	46.66	4,129	51.38	212,169	336,457
January, 2019	756.5	757.6	(1.1)	50.19	(55)	52.09	(2,876)	333,581
February, 2019	736.8	688.7	48.1	50.19	2,414	52.09	125,750	459,331
March, 2019	637.5	656.8	(19.3)	50.19	(969)	52.09	(50,457)	408,875
April,2019	448.8	432.6	16.2	50.19	813	52.09	42,352	451,227
May, 2019	351.6	257.5	94.1	50.19	4,723	52.09	246,010	697,237
June, 2019	105.9	118.5	(12.6)	50.19	(632)	52.09	(32,941)	664,296
July, 2019	25.5	18.7	6.8	50.19	341	52.09	17,778	682,074
August, 2019	17.3	19.0	(1.7)	50.19	(85)	52.09	(4,444)	677,629
September, 2019	142.6	101.9	40.7	50.19	2,043	52.09	106,404	784,033
October, 2019	298.9	271.6	27.3	50.19	1,371	52.09	71,424	855,457
November, 2019	478.7	425.7	53.0	50.19	2,662	52.09	138,639	994,096
December, 2019	638.3	616.7	21.6	50.19	1,082	52.09	56,365	1,050,461
January, 2020	732.7	761.2	(28.5)	67.91	(1,938)	51.94	(100,668)	949,793
February, 2020	687.0	682.2	4.8	67.91	327	51.94	17,001	966,795
March, 2020	645.8	647.6	(1.8)	67.91	(122)	51.94	(6,349)	960,446
April, 2020	457.6	435.3	22.3	67.91	1,514	51.94	78,622	1,039,068
May, 2020	288.2	256.9	31.3	67.91	2,126	51.94	110,438	1,149,506
June, 2020	102.6	125.8	(23.2)	67.91	(1,573)	51.94	(81,691)	1,067,815
July, 2020	31.7	20.1	11.6	67.91	788	51.94	40,916	1,108,731
August, 2020	24.5	17.9	6.6	67.91	445	51.94	23,139	1,131,870
September, 2020	113.4	102.4	11.0	67.91	749	51.94	38,906	1,170,775
October, 2020	281.5	275.5	6.1	67.91	411	51.94	21,340	1,192,115
November, 2020	397.2	435.5	(38.3)	67.91	(2,602)	51.94	(135,164)	1,056,951
December, 2020	525.6	625.6	(100.0)	67.91	(6,794)	51.94	(352,866)	704,085
December 2019 Balance to RORA per UE20-06							(1,057,328)	(353,243)

APPENDIX C

Proposed Components of 2021 Weather Normalization Reserve Account

Schedule 1 – Calculation of 10 Year Average HDD

Schedule 2 – Calculation of MWh/HDD Coefficient

Schedule 3 – Calculation of Forecast Marginal Net Revenue Rate

Appendix C
Schedule 1
Calculation of 10-Year Average HDD

Month	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	10 year average (2010 - 2019)
January	686	744	715	812	771	829	713	712	764	757	733	750
February	608	697	700	672	717	858	628	657	621	737	687	689
March	556	621	572	603	760	743	654	690	602	638	646	644
April	367	420	379	441	453	537	475	416	445	449	458	438
May	262	259	224	235	308	233	259	264	280	352	288	268
June*	114	150	119	107	120	163	121	94	168	106	103	126
July	13	21	12	13	1	28	30	27	14	26	32	18
August	21	14	5	17	28	3	23	29	9	17	25	17
September*	107	90	76	106	118	73	101	92	126	143	113	103
October*	290	249	240	291	228	315	255	203	339	299	282	271
November	429	397	424	472	461	420	401	440	520	479	397	444
December	515	569	589	744	582	545	665	695	709	638	526	625
	3,968	4,231	4,055	4,513	4,547	4,747	4,325	4,319	4,596	4,638	4,288	**4,394**
										Standard Deviation		257

* 2018 Data updated to reflect HDD per Grant Thornton Review of 2019 Variables.

Appendix C
Schedule 2
Calculation of MWh/HDD Coefficient

Year	Month	Days in month	Actual HDD	HDD per day	Reported sales (MWh)	Fewer hours of daylight	Average HDD per day	Average MWh per day
		A	B	C = B / A	D	E	F = (C + C of Prior Month)/2	G = F / A of Prior Month
2019	Jul	31	25.5	0.8	73,093			
	Aug	31	17.3	0.6	81,800			
	Sep	30	142.6	4.8	78,179			
	Oct	31	298.9	9.6	75,158	2.52	7.2	2,505
	Nov	30	478.7	16.0	90,932	4.07	12.8	2,933
	Dec	31	638.3	20.6	104,550	5.21	18.3	3,485
2020	Jan	31	732.7	23.6	115,810	5.40	22.1	3,736
	Feb	29	687.0	23.7	119,888	4.53	23.7	3,867
	Mar	31	645.8	20.8	104,564	3.11	22.3	3,606
	Apr	30	457.6	15.3	96,434	1.53	18.0	3,111
	May	31	288.2	9.3	83,473	0.00	12.3	2,782
	Jun	30	102.6	3.4	76,417			

Linear regression results:
(Oct 2019 - May 2020)

	HDD	Daylight hrs	b	
*	72.30	60.49	1819.08	coefficients
	5.36	16.55	83.48	standard error coefficients
	0.98	71.30	#N/A	R^2, standard error y
	163.87	5.00	#N/A	F, degrees of freedom
	1666288	25421.30	#N/A	Regression SS, residual SS
	13.50	3.66	21.79	t values

* This coefficient is the estimated change in sales (in MWh) for a change of 1 HDD.

Appendix C
Schedule 3
Calculation of Forecast Marginal Net Revenue Rate for 2021

Rate Class	2021 (Forecast) Revenue ($)	Sales (MWh)	Unit Revenue ($/MWh)	
	A	B		
Residential	96,551,697	683,181		*
General Service	63,617,695	402,425		*
Small Industrial	13,590,015	96,469		
Total	173,759,407	1,182,075	$ 147.00	C = A / B
Forecast Unit Energy Cost per MWh			(92.44)	D
Marginal Net Revenue Rate			$ 54.56	E = C + D

* Excludes revenue and kWh sales from seasonal customers.