EXHIBIT 9

DEFERRAL ACCOUNTS AND VARIANCE ACCOUNTS

EB-2022-0016

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9 DEFERRAL AND VARIANCE ACCOUNTS

9.0 Deferral and Variance Accounts Overview

As part of this application, Bluewater is requesting disposition of its Group 1 and Group 2 Deferral and Variance Accounts (DVA) as described throughout this exhibit. **Table 1** and **Table 2** below provide the Group 1 and Group 2 DVAs, respectively, with account balances for each account and indicate whether they are proposed for disposition as part of this application.

Table 1: Summary Table - Group 1 Outstanding DVA Balances

Account	Account Number	Total Principal ($)	Total Interest ($)	Total ($)	Proposed for Disposition
LV Variance Account	1550	138,938	3,101	142,039	Yes
Smart Metering Entity Charge Variance	1551	(18,032)	(416)	(18,448)	Yes
RSVA - Wholesale Market Service Charge	1580	239,550	7,949	247,499	Yes
Variance WMS - Sub account CBR Class A	1580	-	-	-	Yes
Variance WMS - Sub account CBR Class B	1580	(88,779)	(1,946)	(90,725)	Yes
RSVA - Retail Transmission Network Charge	1584	346,108	8,169	354,277	Yes
RSVA - Retail Transmission Connection Charge	1586	32,956	306	33,262	Yes
RSVA - Power	1588	104,042	2,475	106,517	Yes
RSVA - Global Adjustment	1589	(84,198)	(1,967)	(86,165)	Yes
Disposition and Recovery/ Refund of Regulatory Balances (2018)	1595	30,493	2,316	32,809	Yes
Disposition and Recovery/ Refund of Regulatory Balances (2019)	1595	(20,334)	(32,828)	(53,162)	No
Disposition and Recovery/ Refund of Regulatory Balances (2020)	1595	(45,819)	(50,078)	(95,897)	No
Disposition and Recovery/ Refund of Regulatory Balances (2021)	1595	173,986	4,865	178,851	No
Total Group 1 Accounts including Global Adj.		808,911	(58,053)	750,857	
Total Group 1 DVA excluding Global Adj.		893,109	(56,085)	837,022	
Total Group 1 Accounts Requested for Disposition including Global Adjustment		701,078	19,987	721,065	
Total Group 1 Accounts Requested for Disposition excluding Global Adjustment		785,276	21,956	807,231	

Table 2: Summary Table - Group 2 Outstanding DVA Balances

Account	Account Number	Total Principal ($)	Total Interest ($)	Total ($)	Proposed for Disposition
ORA - Deferred IFRS Transition Costs	1508	123,060	19,961	143,021	Yes
ORA - Pole Attachment Revenue	1508	(553,563)	(18,643)	(572,206)	Yes
ORA- Retail Service Charge Incremental Rev	1508	(59,181)	(1,728)	(60,909)	Yes
ORA - OEB Cost Assessment	1508	157,139	9,800	166,939	Yes
LRAM Variance Account	1568	770,973	23,619	794,592	Yes
Pension & OPEB Cash / Accrual Differential Deferral Account - Carrying Charges	1522		(114,380)	(114,380)	Yes
Other Regulatory Assets - OPEB Cash / Accrual Differential Deferral Account	1522	(2,295,364)	-	(2,295,364)	No
Pension & OPEB Cash / Accrual Differential Deferral Account - Contra Account	1522	2,295,364	-	2,295,364	No
Smart Grid Capital Deferral Account	1534	303,408	26,930	330,338	Yes
Smart Grid OM&A Deferral Account	1535	184,398	16,000	200,398	Yes
Smart Meter Capital and Recovery Offset - Stranded Meter Costs	1555	11,785	41,866	53,651	Yes
PILS and Tax Variance for 2006 and Subsequent Years - CCA Changes	1592	(1,405,133)	(49,926)	(1,455,059)	Yes
Total Group 2 Accounts Requested for Disposition		(467,114)	(46,501)	(513,615)	
Total Group 2 Accounts Requested for Disposition excl LRAM Variance Account		(1,238,087)	(70,120)	(1,308,206)	

Bluewater confirms is has utilized these accounts in accordance with the Board's guidance in the *Accounting Procedures Handbook and FAQ's (APH),* as well as the *Report of the Board on Electricity Distributors' Deferral and Variance Account Review Initiative* (EDDVAR Report) for recording amounts in the deferral and variance accounts.

DVA Continuity Schedule

Bluewater has completed the OEB's DVA Continuity Schedule and submitted it with this application as 'Bluewater 2023 DVA Continuity Schedule'. For Group 2 accounts this schedule only accommodated

historical continuity back until 2016. In order to provide a full continuity from the period of last disposition until the 2023 Test Year in this application, Bluewater has a provided an excel model titled 'Bluewater Supplemental DVA Continuity Schedule'.

In addition, Bluewater made the following amendments to the OEB DVA Continuity Schedule:

- **Tab 2b – Continuity Schedule:** As described in this exhibit, Bluewater has forecasted principle transactions for 2022 for a number of Group 2 Accounts. To facilitate entry of these forecasts in 2022 Bluewater has added column BM 'Forecasted 2022 Transactions'.
- **Tab 2b – Continuity Schedule:** Bluewater has adjusted column BP to include the forecast principle transactions during 2022 found in column BM.
- **Tab 4. Billing Determinants:** Bluewater hard coded the number zero into cells S23:S26 because those rate classes are not subject to the disposition of Account 1589 and, therefore, their consumption should not be pulled into Tab 7. Rate Rider Calculations in Cells D101:D104. Bluewater also adjusted the formula in Cell S41 to calculate the total in Column S.
- **Tab 5. Allocation of Balances:** This tab did not pull into it Account 1534 Smart Grid Capital Deferral Account or Account 1535 Smart Grid OM&A Deferral Account, for which Bluewater has balances for disposition. Bluewater has inserted row 48 and 49 for this purpose.
- **Tab 5. Allocation of Balances:** In order to recover the remaining balance in Account 1555 Smart Meter Capital and Recovery Offset Variance – Sub account Stranded Meters, from the appropriate customer classes only, Bluewater has hardcoded the dollar values in Row 66, according to the calculations provided in Section 9.2 below.
- **Tab 5. Allocation of Balances:** As noted below, Tab "2.1a GA Allocation" is not used; therefore, cell D11 "Amounts from Sheet 2" for RSVA-Global Adjustment was updated. It originally pulled the account balance from Tab 6.1a GA Allocation; Bluewater updated the formula so that the account balance is now pulled from the Continuity Schedule.
- **Tab 6. Class A Consumption:** Bluewater selected "no" to Question 2a in order to remove Tab "6.1a GA Allocation." Although Bluewater had two transition customers during the period of the Account 1589 GA balance accumulation, neither customer contributed to the balance or should receive the disposition because they were both Intermediate customers for the full year, paying the actual GA rate, as described in Section 9.1.1 under Account 1589.

Carrying Charges

Bluewater confirms it has used the Board prescribed interest rates established by the OEB for the respective quarterly periods to calculate the carrying charges for each regulatory deferral and variance account. Bluewater has used the current prescribed interest rate of 2.2% for the third quarter 2022 for the calculation of forecasted carrying charges through to April 30th, 2023. The only exception is Account 1522 which requires the CWIP prescribed rate. Bluewater has used the current prescribed interest rate of 4.66% for the third quarter 2022 through to April 30th, 2023.

9.01 Reconciliation of Continuity Schedule with RRR Trial Balance

The following reconciles each account noted in the DVA Continuity Schedule to have a 2021 balance varying in comparison to the amounts filed under 2.1.7 RRR.

Account 1580 – Wholesale Market Service Charge

Under 2.1.7 RRR, Account 1580 was filed with no breakdown for the sub-accounts CBR Class A and CBR Class B, whereas this breakdown is provided in the continuity schedule.

Account 1508 - Pole Attachment Revenue Variance

In preparation of this application Bluewater revisited the calculations used to report historical transactions to ensure accuracy.

Table 3 below provides the corrected calculations and reconciliation to the 2021 RRR balance.

Table 3: Pole Attachment Revenue Variance and Reconciliation

Year	Bluewater 2013 COS ($)	Approved Rate ($)	Incremental Rate Change ($)	No. of Poles	Principle ($)	Interest ($)	Total ($)
2018	22.35	28.09	5.74	6,681	(12,783)	(35)	(12,818)
2019	22.35	43.63	21.28	6,897	(146,768)	(1,762)	(148,530)
2020	22.35	44.50	22.15	6,907	(152,990)	(2,850)	(155,840)
2021	22.35	44.50	22.15	6,974	(154,474)	(2,185)	(156,659)
Total Re-calculated 2021 Balances					(467,016)	(6,832)	(473,847)
Balances reported under 2021 2.1.7 RRR					(457,794)	(7,640)	(465,434)
Variance					(9,222)	808	(8,414)

As a result of this analysis Bluewater has made adjusting entries in the 2021 Principle Adjustment and the 2021 Interest Adjustment columns of the OEB continuity schedule for $(9,222) and $808, respectively. These entries corrected the balances to reflect the revised calculations and account for the variance to the balance reported under 2.1.7 RRR.

Account 1522 - Pension & OPEB Forecast Accrual versus Actual Cash Payment Differential Carrying Charges

In preparation of this application, Bluewater has re-calculated the OPEB differential carrying charges as summarized below in **Table 4**. The re-calculation was necessary to correct the discrepancies in the carrying charges previously reported in historical RRR. The full calculations are available in Attachment 9-1 – Account 1522 Supporting Calculations.

Table 4: Summary of Changes to Account 1522 Carrying Charges

	2018 ($)	2019 ($)	2020 ($)	2021 ($)	Total ($)
OPEB Expense - 2013 COS	872,149	872,149	872,149	872,149	3,488,596
Actual Cash Payments	295,721	294,021	298,609	304,881	1,193,232
Annual Differential	576,428	578,128	573,540	567,268	2,295,364
Annual Carrying Charges	(8,807)	(26,681)	(34,518)	(44,373)	(114,380)
Reported Carrying Charges (2.1.7 RRR)	(18,792)	(37,436)	(42,641)	(51,072)	(149,941)
Variance	9,985	10,755	8,123	6,699	35,561

In order to adjust the balance to reflect the total carrying charges as of Dec 31, 2021 of $(114,379), Bluewater made an adjusting entry to the 2021 balance of $35,561.

Account 1592 - PILS and Tax Variance for 2006 and Subsequent Years – Sub-account CCA Changes

In preparation of this application Bluewater revisited the calculations used to report historical transactions to accurately capture the difference in accelerated CCA compared to the CCA rates underpinning rates. **Table 5** below provides the corrected calculations and reconciliation to the 2021 RRR balance. The full calculations are available in Attachment 9-2 - Account 1592 Supporting Calculations.

Table 5: Summary of Changes to Account 1592

	Principal Transactions	Interest Transactions	Total
2019	(564,591)	(5,673)	(570,264)
2020	(336,199)	(9,205)	(345,404)
2021	(192,798)	(5,638)	(198,436)
Total (Re-calculated)	(1,093,588)	(20,516)	(1,114,104)
2.1.7 RRR 2021	(1,263,923)	(17,737)	(1,281,660)
Variance	170,335	(2,779)	167,556

In order to adjust the balances, principle and interest entries were made to the 2021 balances of $170,335 and $(2,779), respectively. These entries corrected the balances to reflect the revised calculations and account for the variance to the balance reported under 2.1.7 RRR.

Account 1534 - Smart Grid Capital Deferral Account, and
Account 1535 – Smart Grid OM&A Deferral Account

Original transactions for Account 1534 were reported based on the gross capital spending of Smart Grid projects, which were then depreciated with the depreciation expenses recorded in Account 1535 (along with Smart Grid operating expenses). In preparation of Bluewater's 2023 rate application, Account 1534 has been revised to reflect the deferred revenue requirement related to the capital projects. The complete analysis to determine these deferred revenue requirement entries, and interest, has been provided in Attachment 9-3 – Smart Grid Deferred Revenue Supporting Calculations. The deferred revenue calculations compared to the 2021 RRR has been summarized in **Table 6** below.

Table 6: Summary of Changes to Smart Grid Capital Deferral Account

	Principal ($)	Interest ($)	Total ($)
Deferred Revenue as of Dec 2021	298,442	20,160	318,602
Reported 2.1.7 RRR (2021)	38,070	22,514	60,584
Variance	260,372	(2,354)	258,018

The entries in the DVA continuity schedule for account 1534 have been updated to reflect the annual deferred revenue requirement each year, beginning in 2013.

Account 1535 has been revised as well, with depreciation expense removed and only applicable OM&A expenses recorded. The deferred OM&A compared to the 2021 RRR balance has been summarized in **Table 7** below. The detailed OM&A and interest calculations are also provided in Attachment 9-3 – Smart Grid Deferred Revenue Supporting Calculations.

Table 7: Summary of Changes to Smart Grid OM&A Deferral Account

	Principal ($)	Interest ($)	Total ($)
Deferred OM&A as of Dec 2021	169,948	11,887	181,835
Reported 2.1.7 RRR (2021)	349,088	9,040	358,128
Variance	(179,140)	2,847	(176,293)

The entries in the DVA continuity schedule for account 1535 have been updated to reflect the annual OM&A expense each year, beginning in 2013.

9.02 Group 2 Accounts to Continue/Discontinue

Bluewater proposes to Continue / Discontinue with the following accounts listed in **Table 8**.

Table 8: DVA Continue / Discontinue

Account	Acc No	Continue / Discontinue	Explanation
Other Regulatory Assets - Deferred IFRS Transition Costs	1508	**Discontinue**	Account will no longer be required after final disposition.
Other Regulatory Assets - Pole Attachment Revenue	1508	**Discontinue**	Will no longer be necessary after the pole attachment charges are reflected in rates with this application.
Other Regulatory Assets - Retail Service Charge Incremental Revenue	1508	**Discontinue**	Will no longer be needed after the service charges are reflected in revenue requirement and balance disposed.
Other Regulatory Assets - OEB Cost Assessment	1508	**Discontinue**	Will no longer be necessary with the inclusion of costs, assessed with the new model, reflected in rates with this application.
Smart Grid Capital Deferral Account	1534	**Discontinue**	Account will no longer be required after final disposition.
Smart Grid OM&A Deferral Account	1535	**Discontinue**	Account will no longer be required after final disposition.
Pension & OPEB Differential – Carrying Charges	1522	**Continue**	Will continue to be required to calculate carrying charges on the differential balance.
Smart Meter Capital and Recovery Offset - Stranded Meter Costs	1555	**Discontinue**	Account will no longer be required after final disposition.
PILS and Tax Variance for 2006 and Subsequent Years - CCA Changes	1592	**Continue**	Remain available for use for changes, including the phasing out of accelerated CCA, expected to begin in 2024 (also noted in Exhibit 6).

9.03 Request for New Deferral Accounts

Bluewater is not requesting any new deferral or variance accounts with this application.

9.04 Confirmation – Adjustments to DVA Balances

Bluewater confirms it has not made any adjustments to DVA balances previously approved by the OEB on a final basis.

9.1 Disposition of Deferral and Variance Accounts – Group 1

Bluewater's Group 1 accounts were last disposed as part of its 2022 IRM application (EB-2021-0008). As part of the 2022 IRM application, Group 1 DVA and Lost Revenue Adjustment Mechanism Variance Account (LRAMVA) balances as of December 31, 2020 with forecasted interest charges until April 30, 2021, were approved for disposition. The associated rate riders are set to expire April 30, 2023. Bluewater is requesting disposition of all Group 1 balances over a one year period, using the rate riders calculated in the completed OEB DVA Continuity schedule, filed with this application.

The only accounts Bluewater is not seeking recovery of are the sub accounts of 1595 Disposition and Recovery/Refund of Regulatory Balances (2019 through 2022) which are not eligible for recovery until future years.

Wholesale Market Participants

Bluewater has two wholesale market participants ("WMP"): one in the General Service > 50 kW rate class and one in the Large Use rate class. WMP customers do not contribute to the variances in Accounts 1580, 1588, or 1589; therefore, the WMP customers should not be party to the disposition of these accounts.

Class A and B Customers and Global Adjustment

The OEB has noted in the Filing Requirements that Class A customers pay Global Adjustment on an 'actual' basis; therefore, no variance accumulates in Account 1589 related to Class A customers once they become Class A customers. Thus, these Class A customers, in addition to WMPs, should not be party to the disposition in Account 1589.

Table 9 below, indicates for 2021 calendar year the number of Class A customers and their status of Class A or Class B during the year.

Table 9: Class A Customers in the 2021 Calendar Year

Customer	Rate Class	Class A or B January to June 2021	Class A or B July to December 2021
1	Large	Class A	Class A
2	Large	Class A	Class A
3	Large	Class A	Class A
4	Intermediate	Class A	Class A
5	Intermediate	Class A	Class A
6	Intermediate	Class A	Class A
7	Intermediate	Class A	Class A
8	Intermediate	Class A	Class A
9	Intermediate	Class A	Class A
10	Intermediate	Class A	Class A
11	Intermediate	**Class B**	**Class A**
12	Intermediate	**Class A**	**Class B**
13	Intermediate	Class A	Class A
14	GEN>50	Class A	Class A
Total Number of Class A Customers		**13**	**13**

At the beginning of 2021, Bluewater had 13 Class A customers. Effective July 1, 2021, one Intermediate Class B customer transitioned to Class A (Customer 11 in **Table 9**); and one Intermediate Class A customer transitioned to Class B (Customer 12 in Table 9).

Customer 11 is one Class A Load Facility consisting of 8 accounts. For 2021, Customer 11 consisted of 3 General Service Less than 50 kW ("GS<50 kW") accounts, 4 General Service Greater than 50 kW ("GEN>50 kW") accounts, and 1 General Service 1000-4999 kW ("Intermediate") account. In 2023, Customer 11 is forecast to consist of 3 GS<50 kW accounts and 5 GEN>50 accounts, given that the usage of the account

in the Intermediate rate category dropped such that they no longer qualify under the usage parameters of an Intermediate customer, and instead qualify as a customer in the GEN>50 rate class.

For the calculation of the Account 1589 – RSVA – Global Adjustment Rate Rider, Bluewater aggregated all Customer 11's accounts usage in the Intermediate rate class for the entire 2021 year; as such, all consumption was aggregated in Table 3a, Tab '6. Class A Consumption Data' of the DVA Continuity Schedule model. As part of this assumption, Customer 11's three GS<50 kW accounts do not participate in the disposition of account 1589 because their total usage while Class B was immaterial to the total usage of the remaining Class B accounts.

For the calculation of the Account 1580 – Sub Account CBR Class B Rate Rider, Bluewater allocated consumption from Customer 11's accounts by their individual rate classes in Table 3b, Tab '6. Class A Consumption Data' of the DVA Continuity Schedule model. As such, in there is consumption for the Test Year Forecast for the GS>50 kW and GEN>50 kW rate classes that pertain to Customer 11. This was done for the purposes of completing Tab '6.2 CBR B' only. The lump sum allocated in Tab '6.2a CBR B_Allocation' (see **Table 10**) will be applied to the aggregated customer's main load facility account.

9.1.1 Disposition of Accounts 1588 and 1589

The OEB released guidance on February 21, 2019, entitled "Accounting Guidance related to Accounts 1588 Power, and 1589 Global Adjustment." The Accounting Guidance was effective January 1, 2019 and was to be implemented by August 31, 2019.

Bluewater confirms that it is in full compliance with the Accounting Guidance and the processes were implemented effective January 1, 2019.

As noted above, Bluewater's Group 1 accounts, including Accounts 1588 and 1589, were last approved for disposition on a final basis in the 2022 IRM application (EB-2021-0008) as of December 31, 2020.

Account 1588

Bluewater is requesting final disposition for the balance in Account 1588 RSVA – Power in the amount of $106,517. This amount is included in the Group 1 accounts, and the amounts and resulting rate riders are presented in 9.3 Proposed Rate Riders. Bluewater has completed Tab "Account 1588" within the GA Workform, and notes that the variance in Account 1588 as a percentage of Account 4705 is 0.2%.

Account 1589

Bluewater is requesting final disposition for the balance in Account 1589 – Global Adjustment in the amount of ($86,165). Account 1589 – RSVA – Global Adjustment records the net difference between the GA amounts billed to Non-RPP customers and the GA amount charged to the LDC. The variance account therefore captures differences on both the revenue and cost side. Bluewater last disposed of the balances in this Account as of December 31, 2020.

Bluewater's practice has been to dispose of the balance in Account 1589 to only those customers charged the 1st Estimate GA rate. In the 2022 IRM Application, Bluewater was approved to allocate the balance to all Non-RPP Class B customers given that there were variances in Account 1589 that related to factors other than the difference between 1st Estimate and Actual GA Rate. In this Application, the variances in Account 1589 mainly relate to the difference in 1st Estimate and Actual GA Rate. As such, Bluewater is proposing to dispose of the balance of ($86,165) as of December 31, 2020 in Account 1589 to only those customers charged the 1st Estimate GA Rate.

Bluewater has been transitioning Non-RPP, Class B customers to pay Actual GA rate when possible. The Actual GA rate is produced by the IESO and is a monthly rate as opposed to a daily or hourly rate. Thus, only customers that are billed on a calendar month basis can be charged the Actual GA rate without prorating the GA rate in the billing system.

Customers in the Street Lighting and General Service > 50 kW rate classes are billed on a calendar month, thus are charged the Actual GA rate. They should not be party to the disposition in Account 1589.

All customers in the Large Use rate class are Class A customers, and all customers in the Intermediate are Class A with the exception of one customer that transitioned to Class B on July 1, 2021. As noted above, Class A customers pay the Actual GA rate and, as a result, should not be party to the disposition in Account 1589.

The remaining non-RPP Class B customers in the Residential, General Service <50 kW, Unmetered Scattered Load, and Sentinel rate classes are charged the 1st Estimate GA rate, and, therefore, should be party to the disposition in Account 1589.

Both 2021 transition customers noted in **Table 9** were in the Intermediate Rate Class; therefore, they paid Actual GA the entire year during the period, during the time they were both Class A and Class B. As such, neither transition customer contributed to the variance, nor should they be party to the disposition in Account 1589. For this reason, although Bluewater did have transition customers during the period of the Account 1589 GA balance accumulation (as per Tab "6. Class A Consumption Data" of the DVA Continuity Schedule), Bluewater selected "No," thereby eliminating Tab "6.1a GA Allocation" as no such allocation is necessary.

The balance of ($86,165) is proposed to be recovered over a 12-month period, and the rate riders are outlined in 9.3 Proposed Rate Riders, and the calculation is shown in **Table 10.**

Table 10: Account 1589 – RSVA – Global Adjustment; Non-RPP Class B GA Rate Rider

Rate Class	Unit	Non-RPP Metered Consumption for Current Class B Customers (Non-RPP Consumption excluding WMP, Class A and Transition Customers' Consumption ($)	% of Total kWh	Total GA $ Allocated to Current Class B Customers ($)	GA Rate Rider
RESIDENTIAL	kWh	5,256,965	22.65%	(19,512)	(0.0037)
GENERAL SERVICE LESS THAN 50 KW	kWh	17,597,204	75.80%	(65,316)	(0.0037)
GENERAL SERVICE 50 TO 999 KW	kWh	0	0.00%	-	
GENERAL SERVICE 1,000 TO 4,999 KW ("Intermediate")	kWh	0	0.00%	-	
LARGE USE	kWh	0	0.00%	-	
STREET LIGHTING	kWh	0	0.00%	-	
SENTINEL LIGHTING	kWh	26,389	0.11%	(98)	(0.0037)
UNMETERED SCATTERED LOAD	kWh	333,679	1.44%	(1,239)	(0.0037)
Total		**23,214,237**		(86,165)	

9.1.1.1 GA Analysis Workform

Bluewater has completed the GA Analysis Workform to support the claim for disposition for Account 1589 and notes the variance is less than 1%. As noted in Section 9.1.1, Bluewater charges Gen>50, Intermediate and Streetlight customers based on Actual GA rates. Thus, the GA Workform has been modified to separate the statistics related to the customers that are charged 1st Estimate GA rates vs those that are charged Actual GA rates. This is consistent with Bluewater's previous filings of the GA Workform through the IRM periods.

The GA Analysis Workform includes the Tab "Principal Adjustments". Bluewater did not have any principal adjustments and, therefore, has not included any data in this tab.

9.1.2 Disposition of CBR Class B Variance

Bluewater is requesting final disposition for the balance in Account 1580 – Variance WMS – Sub-account CBR Class B in the amount of ($90,725). Bluewater is requesting a one year disposition period for the balance in this account.

Bluewater has recorded Capacity Based Recovery ("CBR") costs and revenues separately for Class A and Class B customers in the respective Account 1580 subaccounts. CBR Class A is disposed of based on the customer's Peak Demand Factor ("PDF") and, therefore, there is no variance in Account 1580 – Sub Account CBR Class A customers.

As noted in **Table 9**, there were two customers that transitioned between Class A and Class B in 2021. Sheet 6.2a of the DVA Continuity Schedule model calculates the portion of the CBR amount that pertains to the customers for the period of time in 2021 that they were Class B. The total amount to be allocated to the two transitioning customers is ($996) and ($638). Bluewater proposes to provide one lump sum credit to each customer upon implementation of the new rates effective May 1, 2023.

The proposed rate riders for the remaining balance of ($89,091) are outlined in 9.3 Proposed Rate Riders, and the calculation is shown in **Table 11** .

Table 11: Account 1580, Sub-Account CBR Class B; CBR Class B Rate Rider

Rate Class	Unit	Metered Consumption for Current Class B Customers (Total Consumption LESS WMP, Class A and Transition Customers' Consumption) ($)	% of Total kWh	Total CBR $ Allocated to Current Class B Customers ($)	CBR Class B Rate Rider ($)
RESIDENTIAL	kWh	264,890,809	71.35%	(43,830)	(0.0002)
GENERAL SERVICE LESS THAN 50 KW	kWh	103,664,528	27.92%	(17,153)	(0.0002)
GENERAL SERVICE 50 TO 999 KW	kW	473,539	0.13%	(27,119)	(0.0573)
GENERAL SERVICE 1,000 TO 4,999 KW ("Intermediate")	kW	-	0.00%	-	
LARGE USE	kW	-	0.00%	-	
STREET LIGHTING	kW	9,147	0.00%	(556)	(0.0608)
SENTINEL LIGHTING	kW	1,149	0.00%	(69)	(0.0597)
UNMETERED SCATTERED LOAD	kWh	2,201,349	0.59%	(364)	(0.0002)
Total		**371,240,521**		**(89,091)**	

9.1.3 Disposition of Account 1595 (2018)

Bluewater is requesting final disposition of Account 1595 – Sub-account (2018). The remaining Sub-accounts are not eligible for final disposition until future years. Bluewater confirms the balance in the 2018 sub-account is from the tax sharing adjustment amount of $30,493 approved by the OEB as part of the 2018 IRM rate application (EB-2017-0027). There was no disposition of Group 1 accounts approved by the OEB in the 2018 IRM rate application, nor an applicable residual balance for variance analysis.

9.2 Disposition of Deferral And Variance Accounts - Group 2

Bluewater's Group 2 accounts were last disposed as part of its 2013 COS application (EB-2012-0107). A summary of transactions and balances for each account has been provided below. Bluewater is seeking recovery for all Group 2 account balances over a one year period, using the rate riders calculated in the completed DVA Continuity Schedule, filed with this application.

Bluewater has forecasted transactions and principle balances until December 31, 2022 and is requesting disposition of these balances, with interest forecasted until April 30, 2023, for the following Group 2 accounts:

- 1508 – Other Regulatory Assets – Pole Attachment Revenue
- 1508 – Other Regulatory Assets, Retail Service Charge Incremental Revenue
- 1508 – Other Regulatory Assets, OEB Cost Assessment
- 1534 – Smart Grid Capital Deferral Account
- 1535 – Smart Grid OM&A Deferral Account

While these balances have not been audited, Bluewater submits the 2022 forecasts can be determined with reasonable accuracy and disposed of in this application, and allow for the closing of these accounts with approval of final disposition.

For all other Group 2 accounts, Bluewater is requesting disposition of December 31, 2021 balances, with forecasted interest until April 30, 2023.

9.2.1 – 1508 Other Regulatory Assets – Deferred IFRS Transition Costs

In this account, Bluewater has recorded the one-time, incremental costs necessary for the transition to IFRS. These costs include one-time incremental costs related to professional and accounting fees to aid in the transition of accounting policies, procedures, processes and employee development and training, as laid out in **Table 12** below.

Table 12: Account 1508 – Deferred IFRS Transition Costs

Expense Category	2009 ($)	2010 ($)	2011 ($)	2015 ($)	2016 ($)
Professional Accounting Fees	78,625	-	-	5,000	29,000
OEB Sec 30 Cost Awards	1,537	-	-	-	-
Staff Training Expenses	693	2,104	916	-	-
SAP Consulting fees	-	-	5,185	-	-
Annual Total	80,855	2,104	6,101	5,000	29,000
Cumulative Total	80,855	82,959	89,060	94,060	123,060

Bluewater's transition to IFRS was completed in 2015, with incremental audit costs associated with the transition, occurring in 2016. All expenses have been audited as part of Bluewater's audited financial results.

Bluewater first sought recovery of the IFRS transition costs as part of its 2013 COS application (EB-2012-0107). However it was agreed to in settlement that Bluewater would withdraw its request for recovery until its next COS application, following the completion of its IFRS transition. As a result, Bluewater has not recovered any costs related to the transition to IFRS until this application and is now seeking recovery of the $123,060 principal, plus carrying charges of $19,961, for a total of $143,021.

9.2.2 - 1508 Other Regulatory Assets – Pole Attachment Revenue

In its letter, Accounting Guidance on Wireline Pole Attachment Charges, dated July 20, 2018, the OEB created a new variance account, Account 1508 – Sub Account – Pole Attachment Revenue Variance to be used for recording the incremental revenue arising from the changes to the pole attachment charge.

Bluewater's pole attachment rate underpinning its rates, was set as part of its 2013 COS application (EB-2012-0107) at $22.35 per year per pole. In contrast the rates utilized since the OEB letter are as follows:

- Effective September 1, 2018: $28.09 per pole per year;
- Effective January 1, 2019: $43.63 per pole per year;
- Effective January 1, 2020: $44.50 per pole per year; and
- Effective January 1, 2022: $34.76 per pole per year.

Outlined in Table 13 below are the calculations used and the resultant incremental revenue by year since September 1, 2018. The 2022 forecasted amount is based on the 2022 OEB approved rate with the known number of poles to which it will apply to. While these amounts will not be audited, they can be determined with reasonable accuracy and Bluewater submits the final balance may be disposed of with this application.

Table 13: Account 1508 Pole Attachment Revenue Variance

Year	Bluewater 2013 COS ($)	Updated Rate ($)	Incremental Change ($)	No. of Poles	Incremental Revenue ($)
2018	22.35	28.09	5.74	6,681	(12,783)
2019	22.35	43.63	21.28	6,897	(146,768)
2020	22.35	44.50	22.15	6,907	(152,990)
2021	22.35	44.50	22.15	6,974	(154,474)
Total as of Dec 2021					(467,016)
2022F	22.35	34.76	12.41	6,974	(86,547)
Total					$ (553,563)

In addition to the $(553,563) principal, interest over the period totals $(18,643), including amounts forecasted until April 30, 2023, for a total amount of $(572,206) for disposition.

9.2.3 - 1508 Other Regulatory Assets, Retail Service Charge Incremental Revenue

In its Decision and Order in the matter of energy retailer service charges, effective May 1, 2019 the OEB established a variance account (Account 1508, Sub-account Retail Service Charges Incremental Revenue) for distributors that no longer used Account 1518 RCVA Retail and Account 1548 RCVA STR. This account captures the incremental revenue resulting from increased service charges authorized while under an approved IRM rate-setting plan.

Since 2019, Bluewater has recorded $59,181 in incremental revenue, including $15,891 in 2022 forecast revenue. While the forecast amounts are not audited, Bluewater submits they can be determined with reasonable accuracy and Bluewater submits the final balance may be disposed of with this application and the account closed. These amounts are summarized by category in **Table 14** below.

Table 14: Retail Service Charge Incremental Revenue by Category

Category	2019 ($)	2020 ($)	2021 ($)	2022F ($)	Total ($)
Retailer Enrollment			108		108
Service Agreement Revenue (Fixed Charge)	2,660	3,554	4,058	4,431	14,703
Service Agreement Revenue (Variable Charge)	5,516	7,681	7,014	7,093	27,303
Consolidated Billing Revenue (Variable Charge)	3,309	4,584	4,156	4,231	16,280
Transaction Request Fee (Variable Charge)	68	80	66	42	256
Transaction Processing Fee (Variable Charge)	138	182	117	93	531
Total	11,691	16,080	15,519	15,891	59,181

With carrying charges applied to these amounts, the total amount to be dispositioned is $60,909.

9.2.4 - 1508 Other Regulatory Assets, OEB Cost Assessment

This account was authorized by the OEB in its letter Revisions to the Ontario Energy OEB Cost Assessment Model, dated February 9, 2016. In that letter the OEB established Account 1508 – Other Regulatory Assets Sub-Account OEB Cost Assessment Variance. The purpose of this account is to record any material difference between the annual OEB cost assessment currently approved in rates and the actual OEB cost assessment amounts charged by the new cost assessment model, effective April 1, 2016. The annual variance between the OEB Assessment and the amount underpinning Bluewater's rates from its 2013 COS application are provided in **Table 15** below.

Table 15: Account 1508 - OEB Cost Assessment Variance

Year	OEB Assessment Invoice ($)	BW 2013 COS Approved ($)	Variance ($)
2016*	123,351	97,650	25,701
2017	165,894	130,200	35,694
2018	153,996	130,200	23,796
2019	155,664	130,200	25,464
2020	154,680	130,200	24,480
2021	116,301	130,200	(13,899)
2022F	166,103	130,200	35,903
Total	1,035,989	878,850	157,139

*2016 includes only 9 months, beginning April 1, 2016

Included in the total principal amount recorded, is a forecasted variance of $35,903 for 2022. Bluewater proposes to update this amount based on the actual OEB cost assessments for the remaining two quarters of 2022, when available. While these amounts will not be audited, they can be determined with reasonable accuracy and Bluewater submits the final balance may be disposed of with this application.

9.2.5 - 1509 Impacts Arising from the COVID-19 Emergency

Bluewater is not requesting disposition of Account 1509. Bluewater has not recorded any amounts in this account, as Bluewater was not eligible to recover additional expenses attributable to the pandemic. The impact of COVID on Bluewater is described in Exhibit 1.

9.2.6 - 1522 Pension & OPEB Cash / Accrual Differential Deferral Account – Carrying Charges

This account records the carrying charges applicable to the balance reported in Account 1522 – Pension & OPEB Forecast Accrual versus Actual Cash Payment Differential, which tracks the differences between the forecast accrual amounts recovered in rates and the actual cash payments made for OPEB, beginning January 1st 2018. (Bluewater is a member of OMERS and as such does not have pension entries to post to this account). The following table outlines the accrued amount of OPEB costs embedded in Bluewater's rates compared to the actual cash costs each year with the differential amount recorded in Account 1522 and corresponding carrying charges. **Table 16** summarizes the annual principle differential and carrying charges. The full calculations are included in Attachment 9-1.

Table 16: Account 1522 Pension & OPEB Cash/Accrual Differential Deferral Account - Carrying Charges

	2018	2019	2020	2021
Annual Principal Differential	(576,428)	(578,128)	(573,540)	(567,268)
1522 - Annual Carrying Charges	(8,807)	(26,681)	(34,518)	(44,373)
1522 - Cumulative Carrying Charges	(8,807)	(35,488)	(70,006)	(114,380)

9.2.7 - 1534 Smart Grid Capital Deferral Account

As described in the reconciliation section above, this account has been used to record the deferred revenue resulting from capital investments under Smart Grid. The investments were consistent with the direction from the Board on Smart Grid investments, including the Report of the Board, Supplemental Report on Smart Grid (EB-2011-0004). Specifically, two capital projects were completed as described in the DSP under section **5.2.1.8 Grid Modernization, DER, Climate Change and LTEP**. At the time the investments were made, Bluewater had not filed a cost of service application with a DSP and therefore included these investments in account 1534, with corresponding OM&A costs in account 1535. With this application, Bluewater has now filed its first DSP with smart grid investments reflected in its regular capital and operating budgets and therefore will no longer utilize Account 1534 or Account 1535.

The calculation of deferred revenue requirement has been provided as Attachment 9-3 to this exhibit. This includes the forecast deferred revenue up until December 31, 2022. Bluewater submits the 2022 forecasts can be determined with reasonable accuracy allowing for approval of final disposition and the closing of these accounts.

In addition, as of December 31, 2022 the SCADA Monitoring Devices are forecast to have a gross fixed asset balance of $56,969 and accumulated amortization balance of $15,533 (Net book value of $41,436). These amounts have been added to the opening balance of Account 1980 System Supervisor Equipment and included in the calculation of rate base for 2023. These amounts are shown separately in the 2023 Fixed Asset Continuity Schedule, Appendix 2-BA of the OEB Chapter 2 Appendices.

9.2.8 - 1535 Smart Grid OM&A Deferral Account

Bluewater has included in this account the OM&A expenses related to Smart Grid including expenses for collaborative research, internal staff training, and operating expenses related to the smart grid capital projects. These expenses are explained in Bluewater's DSP under section 5.2.1.8 Grid Modernization, DER, Climate Change and LTEP.

The annual expenses are summarized in Attachment 9-3 of this exhibit. These expenses include forecast expenses until December 31, 2022. Bluewater submits the 2022 forecasts can be determined with reasonable accuracy allowing for approval of final disposition and the closing of these accounts.

In addition, ongoing operating expenses for the capital projects completed (software support costs for FDIR and data plan costs for the SCADA monitoring devices) totalled $70,636. Details and timing of the expenses are provided in **Table 17** below:

Table 17: Smart Grid OM&A Summary

Projects	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	Total
Research Projects	5,000	15,000	18,540	15,000	15,000	25,000					93,540
Employee Education and Training		16,722	1,000	1,250	1,250						20,222
FDIR - Software Support Costs						6,320	12,640	12,640	12,640	12,640	56,880
Scada Monitoring Devices - Data PlanGrid			1,228	1,939	1,584	1,787	1,719	1,879	1,810	1,810	13,756
Total	5,000	31,722	20,768	18,189	17,834	33,107	14,359	14,519	14,450	14,450	184,398

9.2.9 - 1555 Smart Meter Capital and Recovery Offset – Stranded Meter Costs

As part of Bluewater's 2013 COS application (EB-2012-0107), $1,926,645 of stranded meter costs were approved for recovery from residential and GS<50kW customers. **Table 18** provides a summary of the amounts approved for recovery, the actual amount recovered, the variance with interest and proposed rate riders for final disposition of this account.

Table 18: Stranded Meter Outstanding Balances and Proposed Rate Riders

	Residential ($)	GS<50kW ($)	Total ($)
Stranded Meter amount approved for recovery	1,134,655	791,990	1,926,645
Actual amount recovered	1,134,936	779,924	1,914,860
Variance	(281)	12,066	11,785
Interest	17,434	24,433	41,866
Total Amount to be Recovered	17,153	36,499	53,651
2023 Customer Forecast	33,390	3,487	
Rate Rider - per customer, per month, 1 year	$0.0428	$0.8723	

In 2013, the recovery related to the GS<50kW rate class was approved through a rate rider of $4.66 per customer per month, over a 4 year period, based on a forecast of 3,544 customers. The shortfall in

recovery of $12,066 is attributable to a lower number of customers than forecast during the four year period. For 2023 Bluewater has forecast the number of GS<50kW customers at 3,487 and proposes to recover the shortfall, plus interest charges projected until April 30, 2023, for a total of $36,499, over a one year period with a rate rider of $0.8723 per customer, per month.

For residential customers, the approved amount of smart meters were recovered with a surplus amount of $281. Carrying charges over the two year disposition period amount to $17,434, for a net amount to be recovered of $17,153. Bluewater proposes to recover this amount over a one year period through a rate rider of $0.0428, per customer, per month, based on the 2023 forecast number of residential customers.

In order to utilize the OEB DVA Continuity Schedule to include the rate riders, Bluewater has hardcoded the dollar values found in Total Amount to be Recovered line from **Table 18** above, in the applicable residential and GS<50kW columns of Line 66, on Tab 5. Allocation of Balances. The dollar value for other customer classes on that line were hardcoded $0. This ensures the correct amount is recovered from the applicable customers only.

9.2.10 - 1592 PILS and Tax Variance for 2006 and Subsequent Years – CCA Changes

In its letter titled Accounting Direction Regarding Bill C-97 and Other Changes in Regulatory or Legislated Tax Rule for Capital Cost Allowance (issued July 25, 2019), the OEB gave direction regarding the accounting treatment of the impact of changes to tax rates or rules for CCA.

Bluewater has complied with the direction provided in that letter, through recording the impacts of CCA rule changes introduced in Bill C-97, since November 21, 2018, in Account 1592 – PILs and Tax Variances – CCA Changes. Bluewater has recorded a total tax impact of $1,405,133 in account 1592, plus carrying charges of $49,926, for a total requested disposition of $1,455,059.

Attachment 9-2 – Account 1592 Supporting Calculations, provides the detailed calculations of the principal amounts. These calculations have been reviewed by Bluewater's auditor KPMG. For 2022, Bluewater has forecasted the CCA impact based on the proposed capital budget included in this application. Bluewater

proposes to dispose of the forecasted balance as of December 31, 2022 with carrying charges forecast to May 1, 2023.

As part of this application, Bluewater has reflected the impacts of Bill C-97 in its calculation of PILS for the 2023 Test Year and as a result will not need to record amounts related to Bill C-97 in the future, as the impacts have been appropriately reflected in the 2023 revenue requirement. Bluewater does request that this account remain open to record subsequent changes that impact the tax rates underpinning Bluewater's 2023 PILs component of distribution revenue, including the expected phase out of accelerated CCA beginning in 2024.

9.3 Proposed Rate Riders

Bluewater is proposing to use the rate riders as provided in Tab 7. Rate Rider Calculations of the OEB DVA Continuity Schedule, to dispose of the balances over a one year period, beginning May 1, 2023. There are no rate riders proposed where the volumetric rider is $0.0000 for one or more customer classes, where balances have been allocated to those customer classes. In cases where the volumetric rider is $0.0000 these riders have not been included in the tariff for those rate classes.

9.4 Lost Revenue Adjustment Mechanism Variance Account

9.4.1 Disposition of LRAMVA

Bluewater is proposing recovery for lost revenue associated with the implementation of Conservation and Demand Management ("CDM") programs. The OEB has established Account 1568 LRAMVA to capture the difference between OEB-approved CDM forecast and the actual results at the customer rate class level.

On March 20, 2019, the Minister of Energy, Northern Development and Mines issued directives to the OEB and the IESO with the effect of concluding the Conservation First Framework ("CFF") but allowing

applications in progress to be completed. Bluewater has facilitated the completion of projects in 2019 to 2022.

Bluewater last made an LRAMVA claim in its 2022 IRM application (EB-2021-0008) for programs up to, and including 2020 and was approved for recovery of $331,601. Recovery of these amounts commenced May 1, 2022 for a twelve month period.

In this application, Bluewater is proposing to recover lost revenue for the year 2021 and persistence of programs to 2022 in the amount of $794,592, including carrying charges to the end of April 2023. The live LRAMVA Workform is included as an Excel file**.**

Bluewater's CDM activities consist of programs initiated by the Independent Electricity System Operator (IESO). In this application Bluewater is claiming an LRAMVA amount pertaining to full lost revenues in 2021 and lost revenues associated with persistence of earlier programs in 2021 and 2022. Therefore, Bluewater is entitled to 2021 persistence of IESO CDM program activities from 2011 to 2020 for its lost revenue in 2021, and persistence of activities from 2011 to 2021 for its lost revenue in 2022.

Bluewater has included three projects under the Retrofit program that are estimates pending the final review of the post project documentation. These projects will be verified by the end of 2022 and Bluewater proposes to update the LRAMVA claim accordingly.

In 2021, Bluewater achieved 11,089,982 kWh in excess of the target for Residential customers, 3,441,664 kWh above target for GS < 50 kW customers, and 35,877 kWh below target for the USL class. Demand savings were 61,902 kW above the target for the GS 50 – 999 kW class, 7,175 kW above the forecast for the GS > 1,000 kW class, 3 kW below target for the Sentinel Light class, 44kW below target for the Street Light class, and 4,567 kW above target for the Large Use class.

In 2022, Bluewater achieved 11,028,051 kWh in excess of the target for Residential customers, 3,353,688 kWh above target for GS < 50 kW customers, and 35,877 kWh below target for the USL class. Demand savings were 61,295 kW above the target for the GS 50 – 999 kW class, 13,506 kW above the forecast for

the GS > 1,000 kW class, 3 kW below target for the Sentinel Light class, 44kW below target for the Street Light class, and 4,563 kW above target for the Large Use class.

Persistence of programs from 2011 to 2020 into 2021 is nearly identical to persistence of those programs in 2022. The relative savings are slightly lower as a result of the loss in persistence from 2021 to 2022.

Consumption and demand figures above are relative to the targets established in EB-2012-0107. The LRAMVA thresholds are provided on page 25 of the Settlement Agreement of that proceeding, which has been copied below for reference.

Settlement Table #7 – LRAMVA Allocation

	Weather Normalized 2013F (Elenchus) A		LRAMVA Allocation (kWh) B
Residential (kWh)	259,773,254	26%	4,162,607
GS<50 (kWh)	99,956,659	10%	1,601,705
GS>50 (kW)	225,433,209	22%	3,612,342
Intermediate	159,155,521	16%	2,550,308
Large Users	251,579,433	25%	4,031,309
USL (kWh)	2,238,935	0%	35,877
Sentinel Lights (kW)	627,674	0%	10,058
Street Lights (kW)	9,137,954	1%	146,427
Total Customer (kWh)	1,007,902,639	100%	16,150,632
original CDM			

	Weather Normalized 2013F (Elenchus) A		LRAMVA Allocation (kW) B
Residential (kWh)		0%	-
GS<50 (kWh)		0%	-
GS>50 (kW)	622,378	45%	1,126
Intermediate	335,318	24%	607
Large Users	398,793	29%	722
USL (kWh)		0%	-
Sentinel Lights (kW)	1,452	0%	3
Street Lights (kW)	24,551	2%	44
Total Customer (kWh)	1,382,492	100%	2,502

Bluewater's persisting results are based on the 2011-2014 Final Results Report, Final 2015 Annual Verified Results Report, Final 2016 Annual Verified Results Report, the Final 2017 Annual Verified Results Report,

and the 2018 Participation and Cost Report (April 2019 version), all provided by the IESO. These reports were all filed as Excel models as part of Bluewater's 2021 IRM Rate Application EB-2020-0005.

Additionally, savings from Retrofit and Process and Systems Upgrades Program projects that were completed in 2019 to 2021 have been derived. Bluewater confirms that it has relied on the most recent input assumptions at the time of program evaluation.

Section 3.2.6.1 of the Chapter 3 Filing Requirements allow for detailed project level savings files as supporting documentation when assessing applications for lost revenue where final verified results from the IESO are not available. In 2021, Bluewater processed 11 projects under the Retrofit program and processed 4 projects under the Process and Systems Upgrades program. In 2022, Bluewater processed a further 12 projects under the Retrofit program and processed 1 project under the PSUI program. The details supporting the Gross kWh and kW and Net kWh and kW are presented on a separate Excel file titled '**Bluewater_ERII_PSUI_support_20221021.xlsx'**. Since each project is known, the rate class can be specifically assigned in order to allocate the total savings for each year to the applicable rate class.

There are five supporting Measurement and Verification Reports ("MVR") for the PSUI projects that went into service in 2021. All five reports are included as Attachments 9-4 through 9-8 of this exhibit. The attachments have been redacted to exclude any business information that may be commercially sensitive.

Savings from the 2021 Retrofit and Process and Systems Upgrades programs are based on the cumulative savings of completed projects that were approved before April 2019, adjusted by applicable realization rates and net-to-gross ratios. The 2017 Realization Rates and Net-to-Gross ratios from the IESO's 2017 Industrial Programs Evaluation report have been applied to forecast savings. Persistence values from the References Tables in the April 2019 Participation & Cost Report are applied to savings in future years from 2019 projects.

Carrying charges totaling $23,619 have been calculated to the end of April 2023 with the OEB's Approved Deferral and Variance Accounts prescribed interest rates. The rates in 2022 Q1 and 2022 Q2 have not been provided so the 2022 Q4 rate of 3.87% is used in those periods.

Bluewater has not made any adjustments to previously claimed LRAMVA amounts. **Table 19** below details the claim by rate class for the principal amounts.

Table 19: Principal Amounts of LRAMVA Claim

LRAMVA Claim Summary – Principal				
Rate Class		**2021**	**2022**	**Total**
Residential	Actual	$0	$0	$0
	Forecast	$0	$0	
GS < 50 kW	Actual	$104,398	$104,559	$142,005
	Forecast	($33,155)	($33,796)	
GS 50 – 999 kW	Actual	$291,752	$293,953	$575,191
	Forecast	($5,212)	($5,303)	
GS > 1,000 kW	Actual	$14,691	$27,112	$39,491
	Forecast	($1,146)	($1,166)	
Sen. Lighting	Actual	$0	$0	($172)
	Forecast	($85)	($87)	
Street Lighting	Actual	$0	$0	($1,848)
	Forecast	($916)	($932)	
USL	Actual	$0	$0	($2,637)
	Forecast	($1,306)	($1,331)	
Large Use	Actual	$10,876	$11,063	$18,943
	Forecast	($1,485)	($1,511)	
Total	Actual	$421,717	$436,688	$770,973
	Forecast	($43,305)	($44,126)	

Bluewater is proposing to dispose of these amounts over a one year period through rate riders commencing May 1st, 2023 to April 30th, 2024. **Table 20** below outlines the proposed disposition by rate class and the resulting rate riders.

Table 20: LRAMVA Claim Summary – Total and Proposed Rate Rider

Rate Class	Billing Unit	Principal	Carrying Charges	Total LRAMVA	Billing Determinants	Rate Rider
Residential	kWh	$0	$0	$0	264,890,809	$0.0000
GS < 50 kW	kWh	$142,005	$4,362	$146,368	103,734,059	$0.0014
GS 50 - 999 kW	kW	$575,191	$17,654	$592,845	522,093	$1.1355
GS > 1,000 kW	kW	$39,491	$1,164	$40,655	219,591	$0.1851
Sentinel Lighting	kW	($172)	($5)	($178)	1,149	($0.1545)
Street Lighting	kW	($1,848)	($57)	($1,905)	9,147	($0.2082)
USL	kWh	($2,637)	($81)	($2,718)	2,201,349	($0.0012)
Large Use	kW	$18,943	$581	$19,524	474,203	$0.0412
Total		**$770,973**	**$23,619**	**$794,592**		

9.4.2 Continuing Use of the LRAMVA for New CDM Activities

The filing guidelines allow for distributors to continue to use LRAMVA for distribution rate-funded CDM activities or LIP activities on a case-by-case basis. Bluewater does not foresee participating in either of the above noted activities, however we do not propose to discontinue the use of Account 1568 in the event Bluewater chooses to participate in programs that would be eligible to use this mechanism in the future.

ATTACHMENT 9 – 1

ACCOUNT 1522 SUPPORTING CALCULATIONS

EB-2022-0016

OEB Account 1522 **Pension & OPEB Forecast Accrual versus Actual Cash Payment Differential**		2018	2019	2020	2021
OPEB accrual embedded in rates (per 2012 CGAAP actuarial report) (after 4.4% settlement reduction to OM&A)					
current service cost =		309,474			
interest cost =		450,685			
actuarial (gain)/loss =		126,571			
benefit payments =		(309,331)			
		577,399			
less: settlement reduction of 4.4% =		(25,382)			
	A	552,017	552,017	552,017	552,017
retiree benefits - GL 564600000 (GWL - life, dental, ext benefits)		220,503	220,503	220,503	220,503
retiree benefits - GL 564609000 (Mearie - life)		99,629	99,629	99,629	99,629
total retiree benefits embedded in rates (after 4.4% settlement reduction to OM&A)	B	320,132	320,132	320,132	320,132
total amount embedded in rates re retiree costs	C = A+B	872,149	872,149	872,149	872,149
<u>actual cash payments made:</u>					
retiree benefits - GL 564600000 (GWL - life, dental, ext benefits)		229,526	230,015	233,231	238,347
retiree benefits - GL 564609000 (Mearie - life)		66,195	64,006	65,378	66,534
	D	295,721	294,021	298,609	304,881
Variance between collected in rates versus paid out for retiree benefits	E = C-D	576,428	578,128	573,540	567,268
GL 1522 cumulative =		576,428	1,154,556	1,728,096	2,295,364

152203 - Deferral - OPEB Forecast Accrual vs Cash Differential - Carrying Charges

		Cumulative Total @ End of Each Month	CWIP Carrying Charges Rate	Carrying Charges Booked
2017	December	-	2.99%	-
2018	January	(48,035.67)	2.99%	(120)
2018	February	(96,071.34)	2.99%	(239)
2018	March	(144,107.01)	3.35%	(402)
2018	April	(192,142.68)	3.35%	(536)
2018	May	(240,178.35)	3.35%	(671)
2018	June	(288,214.02)	3.35%	(805)
2018	July	(336,249.69)	3.35%	(939)
2018	August	(384,285.36)	3.35%	(1,073)
2018	September	(432,321.03)	3.35%	(1,207)
2018	October	(480,356.70)	3.35%	(1,341)
2018	November	(528,392.37)	3.35%	(1,475)
Total				**(8,807)**
Cumulative				**(8,807)**

2018	December	(576,428.04)	3.82%	(1,835)
2019	January	(624,605.37)	3.82%	(1,988)
2019	February	(672,782.70)	3.82%	(2,142)
2019	March	(720,960.03)	3.39%	(2,037)
2019	April	(769,137.36)	3.39%	(2,173)
2019	May	(817,314.69)	3.39%	(2,309)
2019	June	(865,492.02)	2.88%	(2,077)
2019	July	(913,669.35)	2.88%	(2,193)
2019	August	(961,846.68)	2.88%	(2,308)
2019	September	(1,010,024.01)	2.88%	(2,424)
2019	October	(1,058,201.34)	2.88%	(2,540)
2019	November	(1,106,378.67)	2.88%	(2,655)
Total				**(26,681)**
Cumulative				**(35,488)**

2019	December	(1,154,556.00)	2.88%	(2,770.93)
2020	January	(1,202,351.00)	2.88%	(2,885.64)
2020	February	(1,250,146.00)	2.88%	(3,000.35)
2020	March	(1,297,941.00)	2.48%	(2,682.41)
2020	April	(1,345,736.00)	2.48%	(2,781.19)
2020	May	(1,393,531.00)	2.48%	(2,879.96)
2020	June	(1,441,326.00)	2.48%	(2,978.74)
2020	July	(1,489,121.00)	2.48%	(3,077.52)
2020	August	(1,536,916.00)	2.48%	(3,176.29)
2020	September	(1,584,711.00)	2.03%	(2,680.80)
2020	October	(1,632,506.00)	2.03%	(2,761.66)
2020	November	(1,680,301.00)	2.03%	(2,842.51)
Total				**(34,518.00)**
Cumulative				**(70,006.25)**

2020	December	(1,728,096.00)	2.03%	(2,923)
2021	January	(1,775,368.33)	2.03%	(3,003)
2021	February	(1,822,640.66)	2.03%	(3,083)
2021	March	(1,869,912.99)	2.29%	(3,568)
2021	April	(1,917,185.32)	2.29%	(3,659)
2021	May	(1,964,457.65)	2.29%	(3,749)
2021	June	(2,011,729.98)	2.29%	(3,839)
2021	July	(2,059,002.31)	2.29%	(3,929)
2021	August	(2,106,274.64)	2.29%	(4,019)
2021	September	(2,153,546.97)	2.29%	(4,110)
2021	October	(2,200,819.30)	2.29%	(4,200)
2021	November	(2,248,091.63)	2.29%	(4,290)
Total				**(44,373)**
Cumulative				**(114,380)**

ATTACHMENT 9 – 2

ACCOUNT 1592 SUPPORTING CALCULATIONS

EB-2022-0016

ACCELERATED CCA CALCULATION
RE: Bill C-97 for Accelerated Investment Incentive Property (AIIP)

Accelerated CCA - This is multiplied by a factor of 2 as it is meant to capture the additional benefits associated with accelerated CCA (i.e. 3X accelerated depreciation - 1X regular depreciation)

Consequential CCA - As accelerated CCA reduces the tax basis, it results in lower CCA in the following years.

Note: Please note that as accelerated CCA was enacted November 2018, however there were no applicable assets completed in 2018.

Summary

	2019	2020	2021	2022	Total
Change in CCA (From Tables Below)	1,565,943	932,476	534,741	864,096	
Tax Effected (@ 26.5%)	414,975	247,106	141,706	228,985	
Grossed Up	564,592	336,199	192,798	311,545	1,405,133

2019

Class	Opening	AIIP Additions	Rate %	Accel CCA	Consequential CCA	Ending UCC
	A	B	C	D = B * C/2 * 2	E= A * C	F = A-D-E
1b	-	276,177	6.0%	16,571	-	(16,571)
8	-	199,738	20.0%	39,948	-	(39,948)
10	-	239,984	30.0%	71,995	-	(71,995)
10.1	-	33,900	30.0%	10,170	-	(10,170)
12	-	659,821	100.0%	329,911	-	(329,911)
47	-	6,054,904	8.0%	484,392	-	(484,392)
50	-	1,114,466	55.0%	612,956	-	(612,956)
	-	8,578,990		1,565,943	-	(1,565,943)

Total CCA	1,565,943

2020

Class	Opening	AIIP Additions	Rate %	Accel CCA	Consequential CCA	Ending UCC
	A	B	C	D = B * C/2 * 2	E= A * C	F = A-D-E
1b	(16,571)	192,393	6.0%	11,544	(994)	(27,121)
8	(39,948)	161,589	20.0%	32,318	(7,990)	(64,276)
10	(71,995)	782,218	30.0%	234,665	(21,599)	(285,061)
10.1	(10,170)	33,900	30.0%	10,170	(3,051)	(17,289)
12	(329,911)	336,234	100.0%	168,117	(329,911)	(168,117)
47	(484,392)	5,689,319	8.0%	455,146	(38,751)	(900,787)
50	(612,956)	1,381,706	55.0%	759,938	(337,126)	(1,035,768)
	(1,565,943)	8,577,359		1,671,898	(739,422)	(2,498,419)

Total CCA	932,476

2021

Class	Opening	AIIP Additions	Rate %	Accel CCA	Consequential CCA	Ending UCC
	A	B	C	D = B * C/2 * 2	E= A * C	F = A-D-E
1b	(27,121)	231,963	6.0%	13,918	(1,627)	(39,412)
8	(64,276)	196,300	20.0%	39,260	(12,855)	(90,681)
10	(285,061)	314,087	30.0%	94,226	(85,518)	(293,769)
10.1	(17,289)	67,800	30.0%	20,340	(5,187)	(32,442)
12	(168,117)	472,224	100.0%	236,112	(168,117)	(236,112)
47	(900,787)	5,528,121	8.0%	442,250	(72,063)	(1,270,974)
50	(1,035,768)	1,097,589	55.0%	603,674	(569,672)	(1,069,770)
	(2,498,419)	7,908,084		1,449,780	(915,039)	(3,033,160)

Total CCA	534,741

2022

Class	Opening	AIIP Additions	Rate %	Accel CCA	Consequential CCA	Ending UCC
	A	B	C	D = B * C/2 * 2	E= A * C	F = A-D-E
1b	(39,412)	148,500	6.0%	8,910	(2,365)	(45,957)
8	(90,681)	234,100	20.0%	46,820	(18,136)	(119,365)
10	(293,769)	618,000	30.0%	185,400	(88,131)	(391,038)
10.1	(32,442)	67,800	30.0%	20,340	(9,733)	(43,049)
12	(236,112)	1,270,000	100.0%	635,000	(236,112)	(635,000)
47	(1,270,974)	8,204,500	8.0%	656,360	(101,678)	(1,825,656)
50	(1,069,770)	646,900	55.0%	355,795	(588,374)	(837,191)
	(3,033,160)	11,189,800		1,908,625	(1,044,529)	(3,897,256)
		900,000	land			
		62,200	Class 10.1 excess disallowed			
		12,152,000				

Total CCA	864,096

ATTACHMENT 9 – 3

SMART GRID DEFERRED REVENUE SUPPORTING CALCULATIONS

EB-2022-0016

SMART GRID DEFERRED REVENUE REQUIREMENT SUPPORTING CALCULATIONS

Smart Grid Accounts

	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022
Smart Grid - FDIR Software	-	-	216,577	221,875	221,875	221,875	221,875	221,875	221,875	221,875
Smart Grid - FDIR Software - acc amort	-	-	(43,315)	(87,690)	(132,065)	(176,440)	(220,815)	(221,875)	(221,875)	(221,875)
Smart Grid - Scada Monitoring Devices	-	-	27,484	46,769	46,769	49,338	49,338	54,698	56,969	56,969
Smart Grid - Scada Monitoring Devices - acc amort	-	-	(1,099)	(2,970)	(4,841)	(6,814)	(8,788)	(10,976)	(13,255)	(15,533)
Total Net Fixed Assets	**-**	**-**	**199,646**	**177,984**	**131,738**	**87,958**	**41,610**	**43,722**	**43,715**	**41,436**
Net Book Value										
Opening Balance	-	-	-	199,646	177,984	131,738	87,958	41,610	43,722	43,715
Closing Balance	-	-	199,646	177,984	131,738	87,958	41,610	43,722	43,715	41,436
Average Net Book Value	**-**	**-**	**99,823**	**188,815**	**154,861**	**109,848**	**64,784**	**42,666**	**43,718**	**42,575**
Working Capital										
Smart Grid - OM&A - Demonstration Projects	-	-	-	-	-	-	-	-	-	-
Smart Grid - OM&A - Grid 20/20 data plan	-	-	1,228	1,939	1,584	1,787	1,719	1,879	1,810	1,810
Smart Grid - OM&A - Survalent support costs	-	-	-	-	-	6,320	12,640	12,640	12,640	12,640
Smart Grid - OM&A - Studies and Planning Exercises	5,000	15,000	18,540	15,000	15,000	25,000	-	-	-	-
Smart Grid - OM&A - Education and Training	-	16,722	1,000	1,250	1,250	-	-	-	-	-
Total Operating Expenses	5,000	31,722	20,768	18,189	17,834	33,107	14,359	14,519	14,450	14,450
Working Capital Factor (OEB approved in 2013 COS)	13.0%	13.0%	13.0%	13.0%	13.0%	13.0%	13.0%	13.0%	13.0%	13.0%
Working Capital Allowance	**650**	**4,124**	**2,700**	**2,365**	**2,318**	**4,304**	**1,867**	**1,887**	**1,879**	**1,879**
Smart Grid Rate Base	**650**	**4,124**	**102,523**	**191,180**	**157,179**	**114,152**	**66,650**	**44,553**	**45,597**	**44,454**

	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022		
Capital Structure (inputs detailed below)												
Deemed Short Term Debt	26	165	4,101	7,647	6,287	4,566	2,666	1,782	1,824	1,778		
Deemed Long Term Debt	364	2,309	57,413	107,061	88,020	63,925	37,324	24,950	25,534	24,894		
Equity	260	1,650	41,009	76,472	62,872	45,661	26,660	17,821	18,239	17,782		
Total Capitalization	650	4,124	102,523	191,180	157,179	114,152	66,650	44,553	45,597	44,454		
Return on Rate Base												
Deemed Short Term Debt	1	3	85	158	130	95	55	37	38	37		
Deemed Long Term Debt	14	91	2,262	4,218	3,468	2,519	1,471	983	1,006	981		
Equity	23	148	3,683	6,867	5,646	4,100	2,394	1,600	1,638	1,597		
Return on Capital	**38**	**243**	**6,030**	**11,244**	**9,244**	**6,713**	**3,920**	**2,620**	**2,682**	**2,614**	**45,348**	**a**
Amortization Expense												
Smart Grid - FDIR Software (S.L. 5 yrs)	-	-	43,315	44,375	44,375	44,375	44,375	1,060	-	-		
Smart Grid - Scada Monitoring Devices (S.L. 25 yrs)	-	-	1,099	1,871	1,871	1,974	1,974	2,188	2,279	2,279		
Amortization	**-**	**-**	**44,415**	**46,246**	**46,246**	**46,349**	**46,349**	**3,247**	**2,279**	**2,279**	**237,408**	**b**
Revenue Requirement before Taxes/PILS	5,038	31,965	71,212	75,679	73,324	86,169	64,627	20,387	19,410	19,343		
Calculation of Taxable Income												
Operating Expenses	5,000	31,722	20,768	18,189	17,834	33,107	14,359	14,519	14,450	14,450		
Amortization Expense	-	-	44,415	46,246	46,246	46,349	46,349	3,247	2,279	2,279		
Interest Expense	15	94	2,347	4,376	3,598	2,613	1,526	1,020	1,044	1,018		
Net Income for Taxes/PILs	23	148	3,683	6,867	5,646	4,100	2,394	1,600	1,638	1,597		
Grossed-up PILs (calculation below)	**8**	**53**	**-**	**-**	**-**	**8,279**	**12,238**	**-**	**-**	**73**	**20,652**	**c**
Account 1534 - Smart Grid Capital Deferral	**47**	**296**	**50,444**	**57,489**	**55,490**	**61,341**	**62,506**	**5,868**	**4,960**	**4,966**	**303,408**	**a+b+c**
Account 1535 - Smart Grid OM&A Deferral	**5,000**	**31,722**	**20,768**	**18,189**	**17,834**	**33,107**	**14,359**	**14,519**	**14,450**	**14,450**	**184,398**	**d**
Revenue Requirement, including Grossed-up Taxes/PILs	**5,047**	**32,018**	**71,212**	**75,679**	**73,324**	**94,448**	**76,865**	**20,387**	**19,410**	**19,416**	**487,806**	**a+b+c+d**

PILs Calculation:	**2013**	**2014**	**2015**	**2016**	**2017**	**2018**	**2019**	**2020**	**2021**	**2022**
Net Income	23	148	3,683	6,867	5,646	4,100	2,394	1,600	1,638	1,597
Add back: Amortization	-	-	44,415	46,246	46,246	46,349	46,349	3,247	2,279	2,279
Less: CCA - FDIR Software (see worksheets)	-	-	(59,559)	(87,817)	(40,975)	(18,439)	(8,297)	(3,734)	(1,680)	(756)
Less: CCA - Scada Monitoring Devices (see worksheets)	-	-	(1,099)	(2,882)	(3,423)	(3,252)	(3,095)	(3,490)	(3,269)	(2,917)
Taxable Income	23	148	(12,561)	(37,586)	7,494	28,758	37,351	(2,376)	(1,032)	203
Less: tax loss carryforward/carryback	-	-	-	-	(7,494)	(5,795)	(3,409)			
	23	148	(12,561)	(37,586)	-	22,964	33,942	(2,376)	(1,032)	203
Tax Rate	26.5%	26.5%	26.5%	26.5%	26.5%	26.5%	26.5%	26.5%	26.5%	26.5%
PILS Payable	6	39	(3,329)	(9,960)	-	6,085	8,995	(630)	(274)	54
Tax Rate	26.5%	26.5%	26.5%	26.5%	26.5%	26.5%	26.5%	26.5%	26.5%	26.5%
Gross Up PILS	8	53	-	-	-	8,279	12,238	-	-	73

Cost of Capital

Capital Structure	**2013**	**2014**	**2015**	**2016**	**2017**	**2018**	**2019**	**2020**	**2021**	**2022**
Deemed Short-term Debt Capitalization	4%	4%	4%	4%	4%	4%	4%	4%	4%	4%
Deemed Long-term Debt Capitalization	56%	56%	56%	56%	56%	56%	56%	56%	56%	56%
Deemed Equity Capitalization	40%	40%	40%	40%	40%	40%	40%	40%	40%	40%
Total	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%

Cost of Capital Parameters	**2013**	**2014**	**2015**	**2016**	**2017**	**2018**	**2019**	**2020**	**2021**	**2022**
Short-term Debt Rate	2.07%	2.07%	2.07%	2.07%	2.07%	2.07%	2.07%	2.07%	2.07%	2.07%
Long-term Debt Rate	3.94%	3.94%	3.94%	3.94%	3.94%	3.94%	3.94%	3.94%	3.94%	3.94%
Return on Equity	8.98%	8.98%	8.98%	8.98%	8.98%	8.98%	8.98%	8.98%	8.98%	8.98%
WACC	5.88%	5.88%	5.88%	5.88%	5.88%	5.88%	5.88%	5.88%	5.88%	5.88%

*Bluewater specific LTD rate approved in 2013 COS rate application was 3.94%

ATTACHMENT 9 – 4

MVR CUSTOMER 1

NON-CONFIDENTIAL

EB-2022-0016

SAVE ON ENERGY | DELIVERY PARTNER™

CONSERVATION FIRST FRAMEWORK - PROCESS & SYSTEMS UPGRADES PROGRAM

Measurement & Verification Report

1st Annual Reporting Period

[redacted]

[redacted]

Project ID: Bluewater[redacted]

Thursday, June 09, 2022
Revision 0

Prepared for:

Bluewater Power Distribution Corporation

855 Confederation Street, Sarnia ON N7T 7L6

Prepared by:

CLEAResult (the Technical Reviewer)

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Prepared in accordance with:

Save on Energy Process & Systems Upgrades Program, Program Requirements, Final v1.1, June 8, 2016

Approvals

	Written by Technical Reviewer	Reviewed by
Name:	Behnam Haghjou, P.Eng., CEM, CMVP	Zaheer Khalfan, P.Eng., CEM, CMVP
Date:	June 9, 2022	June 9, 2022
Signature:		

Revision History

Date	Description	Revision	Technical Reviewer
June 9, 2022	First M&V Report Issuance.	0	Behnam Haghjou, P.Eng., CEM, CMVP

Summary

The Electricity Savings for the 1st Annual Reporting Period of [redacted], 2021, to [redacted], 2022, are 650 MWh, which represent 67% of the Anticipated Electricity Savings.

The original 1st Annual Reporting Period of [redacted], 2021, to [redacted], 2022, was extended by approximately 11 days (244 hours) to [redacted] 2022. The [redacted] was not operational from [redacted], 2022 (in three continuous periods, totalling 244 hours) due to an unexpected defect in the [redacted].

Since the Project has not achieved the minimum 80% performance threshold, the Project Incentive has been adjusted based on the actual Annualized Electricity Savings, in accordance with the terms of the Small Capital Project Agreement. The Balance Incentive payable to the Participant for this Reporting Period is equal to $9,903.20. Refer to the Appendix for the Incentive calculation.

The Electricity Savings for each Reporting Period to date are presented in Table 1.

Table 1. Electricity Savings

Reporting Period	Start and End Dates	Electricity Savings (MWh)	% of Anticipated Electricity Savings[1]	Electricity Cost Savings
1st Quarterly	[redacted], 2021	206	83%	$26,000[2]
1st Annual	[redacted], 2022	650	67%	$82,000

Content Overview

This M&V Report presents the Electricity Savings based on the metered data provided by the Participant for the Project and the methodology described in the M&V Plan Rev. 2, dated July 18, 2018, which should be reviewed prior to reading this report. The report assesses the following items:

- The metered data of this Reporting Period.
- The Reporting Period Energy.
- The electrical performance of the Measure.
- The Incentive based on the performance of the Measure.

In-Service Date Confirmation

The In-Service Date of [redacted], 2021 was established on [redacted], 2021.

[1] Percentage of the Anticipated Electricity Savings shown in the M&V Plan.

[2] Based on the Application Review Electricity Billing Rate of $126/MWh.

Metered Data Analysis

David Mackay, the LDC representative, provided the raw data to the Technical Reviewer for analysis. Data included concurrent gross generated electricity and natural gas consumption at 15-minute intervals, for the duration of the Reporting Period. The data is compliant with the M&V Plan requirements.

Reporting Period Metrics and System Hours of Operation

Table 2 presents an overview of the values related to the Reporting Period, available data, and hours of operation.

Table 2. Reporting Period Metrics and System Hours of Operation

Description	Value	Unit	Comments
Reporting Period Start	[redacted], 2021, 00:00		
Reporting Period End	[redacted], 2022, 03:59		See note below.
Reporting Period Duration	8,760	hours	End date minus start date, excluding the missing data period. See note below.
Available Data	8,760	hours	
Missing Data	0	hours	
Hours of Operation	5,548	hours	63% of the Reporting Period duration.

The original M&V data included 244 hours of missing data for the period from [redacted], 2022 (in three continuous periods). The [redacted] was shut down during these periods due to an unexpected defect in the [redacted].

The missing gross generated electrical power data represents 2.8% of the original Reporting Period. The Technical Reviewer extended the Reporting Period by the same amount, i.e., 244 hours from [redacted], 00:00 to [redacted], 03:00, 2022 to compensate for the missing data. This replacement of missing data was communicated to and agreed upon by the LDC.

Performance of the Measure

This is an [redacted], and therefore the Baseline Energy is 0 MWh/year.

The electrical performance of this [redacted] project is assessed based on the following equation:

Electricity Savings = Reporting Period Energy ± Non-Routine Adjustments

The Reporting Period Energy for this Reporting Period is presented in Table 3.

Table 3. Reporting Period Energy

Description	Value	Unit	Comment
Gross Electrical Energy	670	MWh	
Auxiliary Loads Energy	20	MWh	3% of Gross Electrical Energy.
Reporting Period Energy	650	MWh	*Gross Electrical Energy – Auxiliary Loads Energy.*
Uncertainty of the Reporting Period Energy	± 2%		The Uncertainty is mostly due to the accuracy of the meters.
Average [redacted]	74	kW	*Reporting Period Energy ÷ Reporting Period Duration.*

Electricity Savings

The Electricity Savings are presented in Table 4. This is an IPMVP Option B methodology of calculating the Electricity Savings. Since there has been no change in the Static Factors as defined in the M&V Plan Section B.5.1, Non-Routine Adjustments are not required for this Reporting Period.

Table 4. Electricity Savings

Description	Value	Unit	Comment
Reporting Period Energy	650	MWh	Obtained from Table 3.
Non-Routine Adjustment	0	MWh	None.
Electricity Savings	650	MWh	
Uncertainty of the Electricity Savings	± 2%		The Uncertainty is mostly due to the accuracy of the meters.
Anticipated Electricity Savings	970	MWh	From M&V Plan Rev. 2, dated July 18, 2018. See note below.
Electricity Savings as Percentage of Anticipated Electricity Savings	67%		See note below.
Average Demand Savings	74	kW	Obtained from Table 3.
Summer Peak Demand Savings	5	kW	Summer peak demand period is defined as Monday to Fridays, 1:00 pm - 7:00 pm, June 1 to August 31. See note below.

The Electricity Savings of the 1st Annual Reporting Period are 650 MWh, which represent 67% of the Anticipated Electricity Savings.

The under-performance resulted from lower than anticipated [redacted] and average [redacted] of the [redacted]. [redacted] was anticipated to operate with an [redacted] of 86% and an average operating [redacted] of 129 kW whereas the Reporting Period [redacted] and average operating [redacted] were 63% and 117 kW, respectively. It should be noted that the Project was originally planned for [redacted], however, in the completed Project one [redacted] was installed.

The reason for the low [redacted] Peak Demand Savings is that the [redacted] was shutdown most of the time during [redacted] months. The M&V data shows that the [redacted] was operational only 128 hours from [redacted] to [redacted], 2021 (i.e., an uptime of 5.8%). In an email dated [redacted] 2022, the Participant confirmed that the operation of the [redacted] in the [redacted] was intentionally limited to increase the [redacted].

Total System Efficiency

An assessment of the Total System Efficiency is not a requirement for this Project.

Next Reporting Period

The 1st Annual Reporting Period is the last M&V Reporting Period, and the Participant is not required to submit any more M&V reports.

Appendix - Incentive Payment

Based on the Electricity Savings achieved in the 1st Annual Reporting Period, the Balance Incentive payable to the Participant is $9,903.20, based on Section 1.2 in Schedule C of the Small Capital Project Agreement. The Payment Recommendation is subject to receipt of the Participant's invoice to the LDC for the Balance Payment.

Table 5 outlines the Incentive payment calculation using the latest available information.

Table 5. Incentive Calculation

Description	Value	Comment
Electricity Savings (MWh)	650	The Electricity Savings do not meet the 80% performance threshold of the Program Rules.
Limiter 1 - Electricity Savings ($)	130,058.20	$200 per MWh of the Electricity Savings.
Eligible Costs ($)	620,440.06	*Reviewed eligible vendor invoices + Study cost.*
Limiter 2 - Eligible Costs ($)	248,176.02	40% of Eligible Costs.
Project Benefits ($)	22,538.67	Includes actual electricity bill savings and net Project benefits from the Application Review.
Limiter 3 - 1-Year Payback ($)	597,901.39	*Eligible Costs - Project Benefits.*
Gross Project Incentive ($)	130,058.20	Minimum of the three limiters.
Project Incentives paid to date ($)	73,845.00	First Half Payment towards Small Capital Project Initiative.
Study Incentive paid ($)	46,310.00	Paid for Detailed Engineering Study (Bluewater-[redacted]).
Incentive payable ($)	**9,903.20**	Gross Project Incentive minus incentives paid.

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Please note:

Capitalized terms used in this document have the meaning given to them either in the Save on Energy Process and Systems Upgrade Program Rules, or the IPMVP Core Concepts + Statistics and Uncertainty, dated June 2014, as applicable.

IPMVP defined terms:

Adjusted Baseline Energy, Avoided Energy Use, Baseline Energy, Baseline Period, Confidence Level, Interactive Effects, M&V, Measurement Boundary, Non-Routine Adjustments, Precision, Reporting Period, Reporting Period Energy, Savings, Static Factors, Uncertainty.

ATTACHMENT 9 – 5

MVR CUSTOMER 2

NON-CONFIDENTIAL

EB-2022-0016

CLEAResult®

Measurement & Verification Report
1st Annual Reporting Period

[redacted]

Thursday, October 14, 2021

PROJECT ID: Bluewater[redacted]

PREPARED FOR:

Bluewater Power Distribution Corporation

855 Confederation Street, Sarnia ON N7T 7L6

PREPARED BY:

CLEAResult (the Technical Reviewer)

Suite 1622, 393 University Ave

Toronto, Ontario M5G 1E6

(416) 504-3400

Prepared per Program Rules version "saveONenergy Process & Systems Upgrades Program, FINAL v1.1 June 8, 2016"

Approvals

	Written by Technical Reviewer	Reviewed by Engineering Manager
Name:	Andre Trudell	Pascal Fortier
Date:	October 14, 2021	October 14, 2021
Signature:		

Revision History

Date	Description	Revision	Technical Reviewer
October 14, 2021	First M&V Report issuance.	0	Andre Trudell, P.Eng., CEM, CMVP

1. Executive Summary

The Electricity Savings for the 1st Annual Reporting Period of [redacted], 2018, to [redacted], 2019, are 345 MWh/year, which represents 109% of the Anticipated Electricity Savings.

The Electricity Savings meet the 80% performance threshold required by the Program Rules.

2. Important Notes

It should be noted that no power meters were installed on the [redacted], as per Table 2 of the M&V Plan Rev.0 dated [redacted], 2017. The Technical Reviewer attempted to assess the Electricity Savings using amperage data of a single phase from data loggers temporarily installed on each of the [redacted]. However, the Technical Reviewer was unable to utilize the data loggers' amperage data due to the following:

1. Each of the data loggers' amperage data appeared to be off by a factor (relative to temporary true power measurements), noting a different factor for each data logger.
2. It's possible the data loggers were being switch between [redacted] over the period in which data was collected.
3. There was only a limited amount of data available.
4. Temporary power meters were installed to develop a correlation between true power measurements and the data loggers' amperage readings. However, amperage readings of all the available data greatly exceeded the amperage readings present when these temporary power meters were installed. As a result, the relationships between true power and amperage for each blower could not be used to reliably quantify the electrical power of the [redacted] (i.e., the extrapolation of the independent variable would be too significant).

As a result, the Technical Reviewer collected the Facility's utility electricity consumption to perform an IPMVP Option C (whole facility) adherent assessment. This assessment is different than the approach described in the M&V Plan, and is described in section 3.1 below.

3. Project Overview

3.1. Adjusted Baseline Energy and Anticipated Electricity Savings

The Adjusted Baseline Energy was assessed based on monthly utility data of the Facility from [redacted], 2015, to [redacted], 2016. This Baseline Period was used due to the following:

1. It was confirmed with the Participant that prior to [redacted], 2017, the original [redacted] would have been in operation.
2. The year 2017 appeared to have anomalies in the monthly data set, relative to the other potential baseline data provided.

The Technical Reviewer confirmed with the Participant that there were two Retrofit Projects installed either during the Baseline Period or between the Baseline and Reporting Period (i.e., Retrofit Application ID #

[redacted]). Their associated electricity savings were omitted from the baseline data used to develop this adjusted baseline model.

Using daily average temperature data from the NASA weather data base[1] and a heating degree days balance point of 15 °C,[2] the following linear regression was developed (refer to Figure 1 and Table 1).

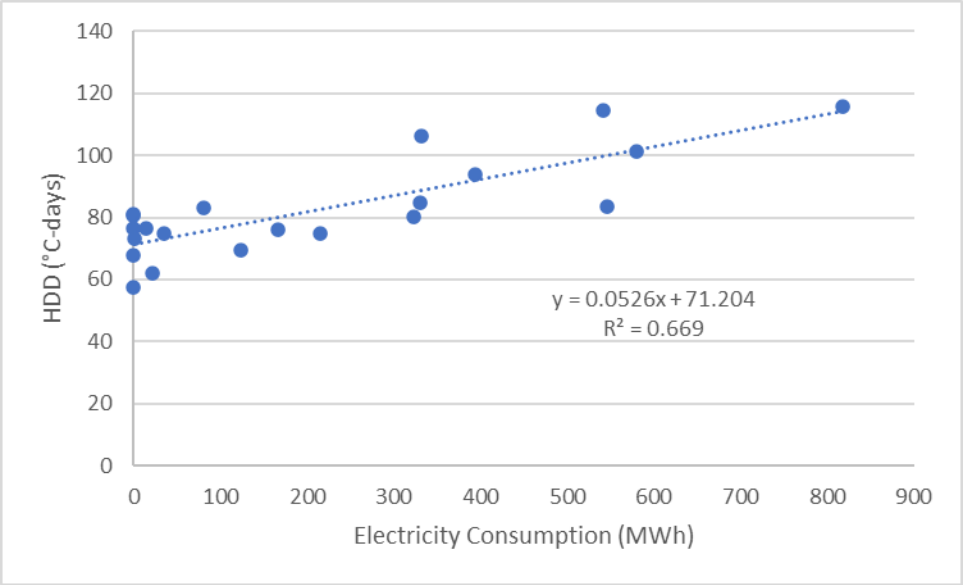

Figure 1. Adjusted Baseline Energy Model

Table 1. Adjusted Baseline Energy Model Statistical Parameters

Statistical Parameter	Value
R^2	0.67
HDD – t-stat	6.2
HDD – p-value	5.9E-06
CV (RMSE) (%)	11.3%
Relative Precision (%)	19.5%

Although R^2 is less than the 0.75 recommended by the IPMVP, the Technical Reviewer accepts the adjusted baseline energy model based on all parameters defined in Table 1.

The Anticipated Electricity Savings are obtained from the M&V Plan, Rev. 0 dated [redacted], 2017, and are presented in Table 2.

[1] Source: https://power.larc.nasa.gov/data-access-viewer/

[2] The Participant was able to provide 15-minute interval electricity data of the Facility from [redacted], 2019, to [redacted] 2021. Comparing the daily electricity consumption of the Facility with the average daily temperature, it was noted that a heating degree day balance point of 15°C is applicable, and that cooling degree days would not be a contributing independent variable to the adjusted baseline model.

Table 2. Anticipated Electricity Savings from the M&V Plan

Description	Value	Unit
Anticipated Annual Electricity Savings	318	MWh/year

This M&V Report assesses the actual Electricity Savings based on raw data provided by the Participant and the methodology described in this 1st Annual M&V Report. This is an IPMVP Option C methodology of calculating the Electricity Savings.

This M&V Report calculates the actual Electricity Savings divided by the Anticipated Electricity Savings, to verify whether the Project has achieved the required 80% of the Anticipated Electricity Savings.

3.2. In-Service Date and Previous Reporting Period

The In-Service Date is [redacted], 2018, which was established on October 14, 2021.[3]

There was no 1st Quarterly Reporting Period M&V Report completed for this Project.

3.3. Current Reporting Period

The 1st Annual Reporting Period is from [redacted], 2018, to [redacted], 2019, which represents 365 days (8,760 hours).

4. Reporting Period Energy

Matthew daCosta, from Bluewater Power Distribution Corporation, provided the raw data to the CMVP for analysis. The raw data includes the Facility's monthly electricity consumption.

Table 3 presents an overview of the data analysis related to the Reporting Period Energy and hours of operation.

Table 3. Reporting Period Hours, Duration, and Hours of Operation

Description	Value	Unit	Comments
Reporting Period Start	[redacted], 2018, 00:00		Start date of the Reporting Period.
Reporting Period End	[redacted], 2019, 23:59		End date of the Reporting Period.
Reporting Period Duration	8,760	hours	End date minus start date.
Available Data	8,760	hours	
Missing Data	0	hours	0% of the Reporting Period.
Hours of Operation	8,760	hours	100% of the Reporting Period Duration.

The Reporting Period energy is presented in Table 4.

[3] Based on the revised M&V approach herein, an updated In-Service Date Confirmation was issued (i.e., Rev.1) with an In-Service Date of [redacted], 2018.

Table 4. Reporting Period Energy

Description	Value	Unit	Comment
Reporting Period Energy	679	MWh	Total facility consumption, prorated to account for one day that was omitted from the monthly data set (i.e., [redacted] 2019).
Reporting Period Uncertainty	± 0.5	%	The Uncertainty is due to the accuracy of the meters.
Reporting Period Average Demand	78	kW	

5. Electricity Savings

5.1. Results

The Electricity Savings are calculated according to the following formula:

Electricity Savings = Adjusted Baseline Energy - Reporting Period Energy ± Non-Routine Adjustment

Since there has been no change in the Static Factors as defined in the M&V Plan Section B.5.2, Non-Routine Adjustments are not required for this Reporting Period. The Reporting Period Energy, Adjusted Baseline Energy, and the Electricity Savings are presented in Table 5.

Table 5. Calculation of Electricity Savings

Description	Value	Unit	Comment
Adjusted Baseline Energy	1,025	MWh	Modelled total facility consumption, prorated to account for one day that was omitted from the monthly data set (i.e., [redacted], 2019).
Reporting Period Energy	679	MWh	Obtained from Table 4
Non-Routine Adjustment	0	MWh	None.
Electricity Savings	345	MWh	
Uncertainty of the Electricity Savings	± 21	%	The Uncertainty is based on the methodology described in the document titled “Uncertainty Assessment for IPMVP” (July 2019, EVO 10100 – 1:2019) for quantifying savings uncertainty of an IPMVP Option C analysis.
Anticipated Electricity Savings	318	MWh/year	Obtained from Table 2.
Electricity Savings as a Percentage of Anticipated Electricity Savings	109	%	
Average Demand Savings	39	kW	
Summer Peak Demand Savings	34	kW	Summer peak demand period is defined as Monday to Fridays, 1:00 pm -7:00 pm, June 1 to August 31.

5.2. Conclusion

The 1st Annual Electricity Savings are 345 MWh and represent 109% of the Anticipated Electricity Savings.

The main reason for the slight overperformance is most likely the [redacted] operating at a lower demand than what was anticipated. It is also possible that the Participant improved the electrical efficiency of other equipment in the Facility. However, considering that 80% of the Anticipated Electricity Savings are required and that the Measure over performs, it is the opinion of the Technical Reviewer that the Electricity Savings of this Measure most likely achieved the 80% threshold.

5.3. Next Reporting Period and Next Steps

This is the final M&V Report, as the M&V Reporting Period is one year. No additional M&V data will be required for the Technical Reviewer.

5.4. Electricity Savings to Date

The Electricity Savings to date are presented in Table 6.

Table 6. Electricity Savings to Date

Reporting Period	Start and End Dates	Electricity Savings		
		MWh	% of Anticipated Savings Value [4]	Cost Savings ($)[5]
1st Quarterly	N/A	N/A	N/A	N/A
1st Annual	[redacted], 2018, to [redacted] 2019	345	109%	$46,600

[4] Percent of Anticipated Electricity Savings defined in the M&V Plan.

[5] Based on $135/MWh obtained from the Project Application Review.

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IPMVP defined terms:

Adjusted Baseline Energy, Avoided Energy Use, Baseline Energy, Baseline Period, Confidence Level, Interactive Effects, M&V, Measurement Boundary, Non-Routine Adjustments, Precision, Reporting Period, Reporting Period Energy, Savings, Static Factors, Uncertainty.

ATTACHMENT 9 – 6

MVR CUSTOMER 3

NON-CONFIDENTIAL

EB-2022-0016

Customer #3

SAVE ON ENERGY | DELIVERY PARTNER™

CONSERVATION FIRST FRAMEWORK: PROCESS & SYSTEMS UPGRADES PROGRAM

Measurement & Verification Report 1st Annual

[redacted]IAL

[redacted]

[redacted]

CONFID

Project ID: Bluewater-PROJECT[redacted]

April 18, 2022

Revision 0

Prepared for:

Bluewater Power Distribution Corporation

855 Confederation Street, Sarnia ON N7T 7L6

Prepared by:

CLEAResult (the Technical Reviewer)

393 University Avenue, Suite 1622, Toronto, ON M5G 1E6

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Prepared per Program Rules version “saveONenergy Process & Systems Upgrades Program, FINAL v2.0 April 6, 2018

Approvals

	Written by:	Reviewed by:
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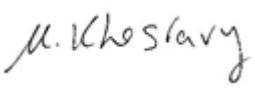
Date:	April 18, 2022	April 18, 2022
Signature:		

Revision History

Date	Description	Revision	Technical Reviewer
April 18, 2022	M&V Report first issuance.	0	Andre Trudell, P.Eng., CEM, CMVP

Summary

The Electricity Savings for the 1st Annual Reporting Period of [redacted] 2021, to [redacted], 2022, are 2,473 MWh, which represents 73% of the Anticipated Electricity Savings.

The Incentive payable to the Participant for this Reporting Period is $170,571. Refer to the Appendix for details.

The Electricity Savings for each Reporting Period to date are presented in Table 1.

Table 1. Electricity Savings to Date

Reporting Period	Start and End Dates	Electricity Savings (MWh)	% of Anticipated Electricity Savings[1]	Electricity Cost Savings[2]
1st Quarterly	[redacted], 2021	799	96%	$91,100
1st Annual	[redacted], 2021, to [redacted], 2022	2,473	73%	$281,900

Content Overview

This M&V Report presents the Electricity Savings based on the metered data provided by the Participant for the Project and the methodology described in the M&V Plan which should be reviewed prior to reading this report. The report assesses the following items:

- The metered data of the Reporting Period.
- The Adjusted Baseline Energy and the Reporting Period Energy.
- The electrical performance of the measure.
- The Incentive based on the performance of the measure.

In-Service Date Confirmation

The In-Service Date was set to [redacted], 2021, on June 7, 2021, by the Technical Reviewer.

[1] Percent of Anticipated Electricity Savings defined in the M&V Plan.

[2] Based on $114/MWh obtained from the Project Application Review and Contract.

Metered Data Analysis

David Mackay, a representative of the LDC, provided the M&V data on March 17, 2022, to the Technical Reviewer for analysis. The provided data is compliant with the M&V Plan requirements.

Reporting Period Metrics and System Hours of Operation

Table 2 presents an overview of the values related to the Reporting Period, available data, and hours of operation.

Table 2. Reporting Period Metrics and System Hours of Operation

Description	Value	Unit	Comments
Reporting Period Start	[redacted] 2021, 00:00		Start date of the Reporting Period
Reporting Period End	[redacted], 2022, 23:59		End date of the Reporting Period
Reporting Period Duration	8,760	hours	End date minus start date
Available Data	8,203	hours	Hours with no missing data points for [redacted] amps and frequency
Missing Data	557	hours	6.4% of the Reporting Period Duration
Hours of Operation	8,683	hours	99% of the Reporting Period Duration

The [redacted] electrical power is not directly measured, therefore the electrical power is required to be calculated based on other available measurements (i.e., amperage and frequency). When either of these parameters are not available, the power cannot be calculated.

The metered data was not provided for a total of 557 hours, or 6.4% of the Reporting Period hours. Table 3 provides details of the missing data. Note that the [redacted] are available for the entire Reporting Period. Therefore, the operation of [redacted] can be identified from the [redacted] data. Given the relatively small percentage that this missing data represents, the Technical Reviewer estimated conservative values for amperage and frequency based on each [redacted] that was present during these periods of missing data.

Table 3. Missing Data

Pump	Parameter	Missing Period[3]	Missing Hours	% of Data
[redacted]	Amperage	1. Aug 15, 13:00 to Aug 20, 10:00	118 hours	1.3%
	Frequency	1. Jan 12, 0:00 to Jan 13, 12:00 2. Jan 20, 10:00 3. May 31, 11:00 to Jun 2, 9:00 4. Aug 15, 13:00 to 20 Aug, 10:00	203 hours	2.3%
[redacted]	Amperage	1. Apr 16, 8:00 2. Aug 15, 13:00 to 20 Aug, 10:00 3. Oct 19, 10:00	120 hours	1.4%
	Frequency	1. Jan 12, 0:00 to Jan 20, 9:00 2. Feb 1, 11:00 to Feb 1, 12:00 3. 16 Apr, 8:00 4. 31 May, 11:00 to Jun 2, 9:00 5. Aug 15, 13:00 to Aug 20, 10:00 6. Sep 15, 0:00 to Sep 22, 16:00 7. Oct 19, 10:00	556 hours	6.3%

Performance of the Measure(s)

The electrical performance of the project is based on the adjusted baseline energy and the reporting period energy, as follows:

Eq. 1 *Electricity Savings = Adjusted Baseline Energy – Reporting Period Energy ± Non-Routine Adjustments*

Adjusted Baseline Energy

As defined in the M&V Plan, the Baseline Energy is adjusted to the operating conditions of the Reporting Period, as shown in Table 4.

The Baseline Energy has been adjusted to account for the change in the operating hours of [redacted].

[3] All missing periods are in 2021.

Table 4. Adjusted Baseline Energy

Description	Value	Unit	Comment
Baseline Energy	7,324	MWh	From the M&V Plan.
[redacted] Hours of Operation	8,652	hrs	Number of hours when [redacted] power is above [redacted] kW, as per the M&V Plan.
[redacted] Hours of Operation	8,358	hrs	Number of hours when [redacted] power is above [redacted] kW, as per the M&V Plan.
Adjusted Baseline Energy	7,115	MWh	= 433 kW × [redacted] Hours of Operation + 403 kW × [redacted] Hours of Operation.
Uncertainty of the Adjusted Baseline Energy	± 2.0%	-	From the M&V Plan.
Average Demand	812	kW	Adjusted Baseline Energy / Reporting Period Duration.
Summer Peak Demand	836	kW	From the M&V Plan.

Reporting Period Energy

The electrical consumptions of [redacted] and [redacted] for this Reporting Period are presented in Table 5.

Table 5. Reporting Period Energy

Description	Value	Unit	Comment
[redacted] Electrical Energy Consumption	2,192	MWh	Sum of hourly [redacted] Power during the Reporting Period.
[redacted] Electrical Energy Consumption	2,449	MWh	Sum of hourly [redacted] Power during the Reporting Period.
Reporting Period Energy	4,641	MWh	Total [redacted] Electrical Energy Consumption.
Uncertainty of the Reporting Period Energy	± 2.5%	-	The Uncertainty is mostly due to the accuracy of the meters.
Average Demand	530	kW	
Summer Peak Demand	555	kW	Summer peak demand period is defined as Monday to Fridays, 1:00 pm -7:00 pm, June 1 to August 31.

Non-Routine Adjustments

The Technical Reviewer reviewed the potential effects of COVID-19 curtailment by assessing a non-routine event (NRE), but was unable to identify one. Also, the Participant confirmed via an email titled “Bluewater-PROJECT-[redacted] - Information Request ** External Email **” on [redacted], 2022, that their operations in the 1st Annual Reporting Period were as anticipating, and there was no curtailment due to COVID-19 in their operations. Therefore, the Technical Reviewer did not apply a non-routine adjustment.

Electricity Savings

The Adjusted Baseline Energy, the Reporting Period Energy, and the Electricity Savings are presented in Table 6. This is an IPMVP Option B methodology of calculating the Electricity Savings.

Table 6. Electricity Savings

Description	Value	Unit	Comment
Adjusted Baseline Energy	7,115	MWh	Obtained from Table 4.
Reporting Period Energy	4,641	MWh	Obtained from Table 5.
Non-Routine Adjustment	0	MWh	None.
Electricity Savings	2,473	MWh	
Uncertainty of the Electricity Savings	± 7.4%	-	The Uncertainty is a combination of the Baseline uncertainty (± 2.0%) and the Reporting Period meters accuracy (± 2.5%).
Anticipated Electricity Savings	3,375	MWh	From the M&V Plan.
Electricity Savings as a Percentage of Anticipated Electricity Savings	73%	-	
Average Demand Savings	282	kW	
Summer Peak Demand Savings	246	kW	Summer peak demand period is defined as Monday to Fridays, 1:00 pm -7:00 pm, June 1 to August 31.

The 1st Annual Electricity Savings are 2,473 MWh and represent 73% of the Anticipated Electricity Savings.

The reason for the underperformance is [redacted] consumed more electricity at any given [redacted] when compared to the Project Application. Note the values displayed in Table 7 (i.e., [redacted] operated at higher loads than anticipated). The base power is presumably indicative of where [redacted] need to operate at a minimum in order to maintain the required [redacted], as per the M&V Plan.

Table 7. Anticipated and Observed Results

Pump	Anticipated/Observed	Description	Value	Unit
[redacted]	Anticipated	Base Power	155	kW
		Average Power	168	kW
		Consumption	1,467	MWh
	Observed	Base Power	220	kW
		Average Power	250	kW
		Consumption	2,192	MWh
[redacted]	Anticipated	Base Power	180	kW
		Average Power	253	kW
		Consumption	2,214	MWh
	Observed	Base Power	230	kW
		Average Power	280	kW
		Consumption	2,449	MWh

Also, The Technical Reviewer noted that when there was zero [redacted], the [redacted] were operating greater than the anticipated [redacted] kW cut-off, as per the Application Review. This is a secondary factor contributing to the underperformance of the Project.

Next Reporting Period

This is the final M&V Report, as the M&V Reporting Period is one year. No additional M&V data will be required, unless requested by the IESO.

Appendix - Incentive Payment

Based on the Electricity Savings achieved in the 1st Annual Reporting Period, and review of the Eligible Costs, the Incentive payable to the Participant is $170,571, pending issuance of the Master Payment Requisition.

Table 8 outlines the Incentive payment calculation using the latest available information.

Table 8. Incentive Calculation

Description	Value	Comment
Electricity Savings (MWh)	2,473	Electricity Savings, defined in this Report.
Limiter 1 - Electricity Savings	494,671	$200 per MWh of Electricity Savings.
Eligible Project costs	2,161,446	From invoices provided by the Participant.
Limiter 2 - Project Costs	1,513,012	70% of Eligible costs.
Net benefits	281,962	Includes electricity savings at $114/MWh, as per the Application Review.
Limiter 3 - Project Payback	1,879,483	Eligible costs minus net benefits.
Gross Project Incentive	494,671	Minimum of the three limiters.
Project Incentives paid	324,100	Paid for 1st Quarterly Reporting Period.
Study Incentive paid	N/A	Study Incentives are not subtracted from the Project Incentive under CFF2.
Incentive payable	**170,571**	Gross incentive minus incentives paid.

Table 9 provides the Incentive payment schedule.

Table 9. Payment Schedule

Deferred Payment Schedule	Projected Date	% of Approved Amount
Payment 1	After issuance of the initial (Q1) M&V Report.	50% of Participant Incentive. The first payment towards the Participant Incentive is calculated based on Electricity Savings in the initial M&V Report.
Final Payment (Holdback)	After issuance of the final (Year 1) M&V Report.	The balance payment is the difference between the actual Participant Incentive, calculated based on the final M&V Report, and the total payments made to date.

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IPMVP defined terms:

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ATTACHMENT 9 – 7

MVR CUSTOMER 4

NON-CONFIDENTIAL

EB-2022-0016

Customer #4

SAVE ON ENERGY | DELIVERY PARTNER™

INTERIM FRAMEWORK : PROCESS & SYSTEMS UPGRADES PROGRAM

Measurement & Verification Report

1st Annual Reporting Period

[redacted]

[redacted]

March 4, 2021

Revision 0

Project ID:

[redacted]

Prepared for:

The Independent Electricity System Operator (the IESO)

[redacted]

Prepared by:

CLEAResult (the Technical Reviewer)

Prepared in accordance with:

Save On Energy Process & Systems Upgrades Program, Program Requirements (ver. 1.0, May 1, 2019)

Technical Reviewer

Written by:	
Name:	John Scourias, P.Eng., CMVP, CEM
Date:	March 4, 2021
Signature:	

Reviewed by:	
Name:	Pascal Fortier, P.Eng., CMVP, CEM
Date:	March 4, 2021
Signature:	

Revision History

Date	Description	Revision	Technical Reviewer
March 4, 2021	First M&V Report issuance.	0	John Scourias, P.Eng., CMVP, CEM

Summary

The Electricity Savings calculated for the 1st Annual Reporting Period of [redacted], 2020, to [redacted], 2021, are 1,342 MWh which represent 95% of the Anticipated Electricity Savings. The Incentive payable to the Participant for this Reporting Period is $116,444. Refer to the Appendix for details.

The Electricity Savings for each Reporting Period to date are presented in Table 1.

Table 1. Electricity Savings and Incentive Payments to Date

Reporting Period	Start and End Dates	Electricity Savings (MWh)	% of Anticipated Electricity Savings[1]	Electricity Cost Savings[2]
1st Quarterly	[redacted] 2020 – [redacted], 2020	344	97%	$46,400
1st Annual	[redacted], 2020 – [redacted] 2021	1,342	95%	$181,600

Content Overview

This M&V Report presents the Electricity Savings based on the metered data provided by the Participant for the Project and the methodology described in the M&V Plan (ver. 1, dated [redacted] 2019), which should be reviewed prior to reading this report. The report assesses the following items:

- The metered data of the Reporting Period.
- The Adjusted Baseline Energy and the Reporting Period Energy.
- The electrical performance of the measure.
- The Incentive based on the performance of the measure.

In-Service Date Confirmation

The In-Service Date of [redacted], 2020, was established on May 11, 2020.

Metered Data Analysis

Bryan Prouse, the Participant representative, provided the raw data for analysis. Data included hourly electricity consumption of [redacted] and [redacted] and hourly [redacted] for the duration of the M&V Reporting Period. The provided data is compliant with the M&V Plan requirements.

[1] Percent of Anticipated Electricity Savings defined in the M&V Plan.

[2] Based on $135/MWh obtained from the Project Application Review.

Reporting Period Metrics and System Hours of Operation

An overview of the values related to the Reporting Period, available data, and hours of operation are presented in Table 2.

Table 2. Reporting Period Metrics and System Hours of Operation

Description	Value	Unit	Comments
Reporting Period Start	[redacted], 2020 0:00		
Reporting Period End	[redacted], 2021 23:59		
Reporting Period Duration	8,784	hours	
Available Data	8,783	hours	100% of the Reporting Period Duration.
Missing Data	1	hours	0% of the Reporting Period Duration.
Hours of Operation	8,783	hours	Operation of complete UV System. 100% of the Available Data.

There were two missing hours of [redacted] data on [redacted], 2020. Since the [redacted] is continuously operational, the Adjusted Baseline Energy (which is calculated using [redacted]) was extrapolated for those two missing hours. In addition, the Adjusted Baseline and Reporting Period data were both extrapolated for the one missing hour which was overwritten due to daylight savings on November 1, 2020.

Performance of the Measures

The electrical performance of the project is based on the adjusted baseline energy and the reporting period energy, as follows:

Electricity Savings = Adjusted Baseline Energy – Reporting Period Energy ± Non-Routine Adjustments

Adjusted Baseline Energy

As defined in the M&V Plan, the Baseline Energy is adjusted to the operating conditions of the Reporting Period, as shown in Table 3. The Adjusted Baseline Energy is calculated using a regression between hourly [redacted] power.

Table 3. Adjusted Baseline Energy

Description	Value	Unit	Comment
Baseline Energy	1,628	MWh	From the M&V Plan.
Adjusted Baseline Energy	1,552	MWh	From the M&V Plan, using hourly regression of power versus [redacted]. Extrapolated for three missing hours of [redacted]
Uncertainty of the Adjusted Baseline Energy	± 12.7%		The uncertainty of the Adjusted Baseline model.
Average Demand	177	kW	Average hourly System power.
Summer Peak Demand	219	kW	Summer peak demand period is defined as June 1 to August 31, Monday to Friday, 1:00 pm to 7:00 pm.

Reporting Period Energy

The electricity consumption of the System during this Reporting Period is presented in Table 4.

Table 4. Reporting Period Energy

Description	Value	Unit	Comment
[redacted] electricity consumption	2.4	MWh	Note that the feed labelled [redacted] is backup for the whole System.
[redacted] electricity consumption	204.6	MWh	Note that the feed labelled '[redacted] is the main feed for the whole System.
Reporting Period Energy	207.0	MWh	Total electricity consumption, extrapolated for one missing hour.
Uncertainty of the Reporting Period Energy	± 2%		Due primarily to metering uncertainty.
Average Demand	24	kW	Average hourly System power.
Summer Peak Demand	26	kW	

Electricity Savings

The Adjusted Baseline Energy, the Reporting Period Energy, and the Electricity Savings are presented in Table 5. This is an IPMVP Option B methodology of calculating the Electricity Savings.

Table 5. Electricity Savings

Description	Value	Unit	Comment
Adjusted Baseline Energy	1,552	MWh	Obtained from Table 3.
Reporting Period Energy	207	MWh	Obtained from Table 4.
Non-Routine Adjustment	0	MWh	None.
Electricity Savings	1,342	MWh	Reporting Period Electricity Savings of 1,345 MWh were prorated to account for the leap year and allow direct comparison with the Anticipated Electricity Savings.
Uncertainty of the Electricity Savings	± 15%		Combination of the Adjusted Baseline uncertainty (± 12.7%) and the Reporting Period uncertainty (± 2.0%).
Anticipated Electricity Savings	1,417	MWh	Obtained from the M&V Plan.
Electricity Savings as a Percentage of Anticipated Electricity Savings	95%		
Average Demand Savings	153	kW	*Adjusted Baseline Average Demand (177 kW) - Reporting Period Average Demand (24 kW)*
Summer Peak Demand Savings	180	kW	*Baseline Peak Demand (206 kW) - Reporting Period Peak Demand (26 kW)*

The Electricity Savings for the 1st Annual Reporting Period are 1,342 MWh, which represent 95% of the Anticipated Electricity Savings for the Reporting Period.

The [redacted] is performing as anticipated. The slight underperformance may be due to an average [redacted] that was slightly less than the Baseline average [redacted], which would result in a lower Adjusted Baseline Energy.

Next Reporting Period

This is the final M&V Report, as the M&V Reporting Period is one year. No additional M&V data will be required unless requested by the IESO.

Appendix – Incentive Payment

Based on the Electricity Savings achieved in the 1st Annual Reporting Period, and review of the Eligible Costs, the Incentive payable to the Participant is $116,444, pending issuance of the Master Payment Requisition. Table 6 outlines the Incentive payment calculation using the latest available information.

Table 6. Incentive Calculation

Description	Value	Comment
Electricity Savings (MWh)	1,342	Electricity Savings, defined in this Report.
Limiter 1 - Electricity Savings	$268,304	$200 per MWh of Electricity Savings.
Eligible Project costs	$1,117,949	From invoices provided by the Participant.
Limiter 2 - Project Costs	$782,564	70% of Eligible costs.
Net benefits	$235,085	Includes electricity savings at $135/MWh and net benefits from the Application Review.
Limiter 3 - Project Payback	$882,864	Eligible costs minus net benefits.
Gross Project Incentive	$268,304	Minimum of the three limiters.
Project Incentives paid	$124,860	Paid for 1st Quarterly Reporting Period.
Study Incentive paid	$27,000	Paid for Engineering Study.
Incentive payable	**$116,444**	Gross incentive minus incentives paid.

The table below shows the payment schedule as defined in the contract and Program Rules, for reference.

Deferred Payment Schedule	Projected Date	Incentive Amount
Payment 1	After issuance of the 1st Quarterly M&V Report.	50% of Participant Incentive. The first payment towards the Participant Incentive is calculated based on Electricity Savings in the 1st Quarterly M&V Report.
Final Payment (Holdback)	After issuance of the 1st Annual M&V Report.	The balance payment is the difference between the actual Participant Incentive, calculated based on the 1st Annual M&V Report, and the total payments made to date.

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IPMVP defined terms:

Adjusted Baseline Energy, Avoided Energy Use, Baseline Energy, Baseline Period, Confidence Level, Interactive Effects, M&V, Measurement Boundary, Non-Routine Adjustments, Precision, Reporting Period, Reporting Period Energy, Savings, Static Factors, Uncertainty.

ATTACHMENT 9 – 8

MVR CUSTOMER 5

NON-CONFIDENTIAL

EB-2022-0016

Customer #5

SAVE ON ENERGY | DELIVERY PARTNER™

CONSERVATION FIRST FRAMEWORK: PROCESS & SYSTEMS UPGRADES PROGRAM

Measurement & Verification Report
1st Quarterly Reporting Period

[redacted]

Project ID: Bluewater-PROJECT-[redacted]

April 20 2022
Revision 0

Prepared for:
Bluewater Power Distribution Corporation.

Prepared by:
CLEAResult (the Technical Reviewer)
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Revision History

Date	Description	Revision	Author
April 20 2022	M&V Report first issuance.	0	Zaheer Khalfan, P.Eng., CEM, CMVP.

Approvals

	Written by Technical Reviewer	Reviewed by Engineering Manager
Name	Zaheer Khalfan, P.Eng., CEM, CMVP	Allison Merz, P.Eng., CEM, CMVP
Date	April 20, 2022	April 20, 2022
Signature		

Summary

The Electricity Savings for the 1st Quarterly Reporting Period of [redacted] to [redacted] 2021, are 1,392 MWh, which represent 91% of the Anticipated Electricity Savings.

The Participant is Eligible for an Incentive payment of $546,049, based on the Conservation First Framework (CFF) V2.0, April 6, 2018 Program Rules. However, note the following that is pending resolution:

- The Participant submitted the Project Application under CFF V2.0, April 6, 2018. However, the Participant and the LDC signed a Project Incentive Contract (Deferred Payment option), which is a contract under the previous version of CFF. The M&V Plan is based on CFF V2.0.
- The LDC was notified of this discrepancy and was advised that rules for the Incentive calculation and payment schedule differ between the two contracts. The LDC confirmed that the Project Incentive Contract was signed in error and the Participant's intent was to contract under CFF V2.0. The LDC also acknowledged that a CFF V2.0 contract is only considered complete once the LDC issues the Letter of Approval.
- The Technical Reviewer notified the IESO of the discrepancy and the Participant and LDC's intent to contract under CCF V 2.0. The IESO has indicated that the Technical Reviewer can perform the review of the M&V Report based on CFF V2.0 rules. However, the Technical Reviewer will not proceed with the Payment Recommendation until a contract amendment is provided.

See the Appendix for the Incentive calculation, based on CFF V2.0 with a Deferred Payment option.

The Electricity Savings for each Reporting Period to date are presented in Table 1.

Table 1. Electricity Savings

Reporting Period	Start and End Dates	Electricity Savings (MWh)	% of Anticipated Electricity Savings[1]	Electricity Cost Savings
1st Quarterly	[redacted] to [redacted] 2021	1,392	91%	$153,120[2]

Content Overview

This M&V Report presents the Electricity Savings based on the metered data provided by the Participant for the Project and the methodology described in the M&V Plan which should be reviewed prior to reading this report. The report assesses the following items:

- The metered data of the 1st Quarterly Reporting Period.
- The Reporting Period Energy.

[1] Percentage of the Anticipated Electricity Savings based on Table 5 (Monthly Breakdown of Anticipated Electricity Savings) in the M&V Plan.

[2] Based on the Electricity Billing Rate of $110/MWh used in the Project Application Review.

- The electrical and thermal performance of the Measure.
- The Incentive based on the performance of the Measure.

In-Service Date Confirmation

The In-Service Date of [redacted] 2021 was established on January 5, 2022. Note that the In-Service Date Confirmation is conditional upon receipt of a copy of the [redacted]

Metered Data Analysis

David Mackay, the LDC representative, provided the raw data to the Technical Reviewer for analysis. The raw data includes the following 1-minute interval data for the [redacted]:

- Gross [redacted]
- [redacted] consumption
- [redacted] consumption
- [redacted] and [redacted].

The data is compliant with the M&V Plan requirements.

Reporting Period Metrics and System Hours of Operation

Table 2 presents an overview of the values related to the Reporting Period, available data, and hours of operation.

Table 2. Reporting Period Metrics and System Hours of Operation

Description	Value	Unit	Comments
Reporting Period Start	[redacted] 2021, 00:00		
Reporting Period End	[redacted] 2021, 23:59		
Reporting Period Duration	2,208	hours	
Available Data	2,208	hours	
Missing Data	53	hours	See note below
Hours of Operation	1,732	hours	78% of the Reporting Period duration.

Note that the dataset has a total of 53 missing hourly [redacted]. The 53 hours of missing data include the following:

- 2 days (48 hours) of missing data/time stamps.
- 5 hours of data for which date/time stamps are shown but the [redacted] readings are missing.

Despite the missing data, the total Reporting Period electricity [redacted] can be calculated accurately using only the first and last readings in the dataset.

Performance of the Measure

The electrical performance of this [redacted] is based on the following equation:

Electricity Savings = Reporting Period Energy ± Non-Routine Adjustments

The Reporting Period Energy for this Reporting Period is presented in Table 3.

Table 3. Reporting Period Energy

Description	Value	Unit	Comment
Gross Electrical Energy	1,445	MWh	
Auxiliary Loads Energy	53	MWh	
Reporting Period Energy	1,392	MWh	Gross Electrical Energy– Auxiliary Loads Energy.
Uncertainty of the Reporting Period Energy	± 2.5%		The Uncertainty is mostly due to the accuracy of the meters.
Average Generation	631	kW	Reporting Period Energy ÷ Reporting Period Duration

Electricity Savings

The Electricity Savings are presented in Table 4. This is an IPMVP Option B methodology of calculating the Electricity Savings. Since there has been no change in the Static Factors as defined in the M&V Plan Section B.5.1, Non-Routine Adjustments are not required for this Reporting Period.

Table 4. Electricity Savings

Description	Value	Unit	Comment
Reporting Period Energy	1,392	MWh	Obtained from Table 3.
Non-Routine Adjustment	0	MWh	None.
Electricity Savings	1,392	MWh	
Uncertainty of the Electricity Savings	± 2.5%		The Uncertainty is mostly due to the accuracy of the meters.
Anticipated Electricity Savings	1,523	MWh	Prorated Anticipated Electricity Savings per the M&V Plan.
Electricity Savings as Percentage of Anticipated Electricity Savings	91%		
Average Demand Savings	631	kW	Obtained from Table 3.
Summer Peak Demand Savings	772	kW	Summer peak demand period is defined as Monday to Fridays, 1:00 pm - 7:00 pm, June 1 to August 31.

The Electricity Savings of the 1st Quarterly Reporting Period are 1,392 MWh, which represent 91% of the Anticipated Electricity Savings.

The under-performance resulted from [redacted] than anticipated [redacted]. The [redacted] was anticipated to operate with [redacted] of 88% whereas the Reporting Period [redacted] was 78%. The [redacted] was partly offset by a higher than anticipated average [redacted]. The [redacted] was anticipated to operate with an average [redacted] of [redacted] kW whereas the Reporting Period [redacted] was [redacted] kW. Note that the original project scope was based on [redacted] with a full load [redacted] kW. However, the actual [redacted] installed appears to have a [redacted], with a [redacted] value as high as [redacted] kW. The Participant has indicated that there are no issues with the accuracy of the [redacted] readings.

Total System Efficiency

The [redacted] is calculated according to the following equation.

[redacted] *(%) =* [redacted]

Table 5. Calculations of Total System Efficiency

Description	Value	Unit	Comment
[redacted]	[redacted]	MWh	Obtained from Table 3.
[redacted]	[redacted]	MWh	See note below table.
[redacted]	[redacted]	MWh	Calculated from [redacted] and a [redacted] specified in the M&V Plan.
[redacted]	[redacted]%		This value is below the minimum 65% required by the Program but above the minimum 57.5% required for an Incentive.

Note that this analysis is for informational purposes only, as the [redacted] for Incentive purposes is performed on an annual basis. [redacted]%. However, the Reporting Period represents a period of [redacted]. The [redacted] value is expected to be [redacted] as it will include [redacted].

Next Reporting Period

The Participant will need to provide the metered data for the next Reporting Period in the same format as previously provided. The review of next M&V Reporting Period (1st Annual) will include analysis of the metered data for the Reporting Period.

Appendix - Incentive Payment

The Participant is eligible for an Incentive Payment of $546,049 for this Reporting Period, calculated in accordance with the Program Rules of CFF V2.0, April 6, 2018. The Incentive calculation is shown in Table A1.

Table A1. Incentive Calculation

Annual Projected Electricity Savings (MWh)	5,460[3]
Electricity Billing Rate ($/MWh)	110
Electricity Billed Savings	$600,600
Other [redacted]	[redacted]
Project [redacted]	[redacted]
Eligible Costs	[redacted]
[redacted]	[redacted]
Incentive 1 - [redacted]	$1,092,098
Incentive [redacted]	[redacted]
Incentive [redacted]	[redacted]
Recommended Incentive	$1,092,098
[redacted]	[redacted]
Recommended First 50% Payment	$546,049

Note that Eligible Costs value used in the Incentive calculation is from the Project Incentive Contract as the actual costs incurred have not yet been reviewed.

[3] Reporting Period Electricity Savings projected to a full year based on the Q1 Performance Ratio.

[4] From the Project Review

[5] The Participant performed a funded study. However, in CFF V2.0, funded study costs are not deducted from the Project Incentive.

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