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MARITIME ELECTRIC
A FORTIS COMPANY

December 18, 2023

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

Dear Ms. Mosher:

Supplemental Capital Budget Request
Advanced Metering for Sustainable Electrification Project – Docket 20737
Response to Additional Interrogatories from Commission Staff

Please find attached the Company's responses to additional interrogatories from Commission Staff with respect to the Advanced Metering for Sustainable Electrification Project received on November 2, 2023.

Yours truly,

MARITIME ELECTRIC

Gloria Crockett

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

GCC35
Enclosure

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A D D I T I O N A L
I N T E R R O G A T O R I E S

Responses to Questions
of
Commission Staff

SCBR - Advanced Metering for Sustainable Electrification Project Application
(UE20737)

Submitted December 18, 2023

IR-34 Please provide a copy of any firm estimates provided by preferred contractors. Are they consistent with the budget provided in the Application? Please explain any variances.

Response:

A copy of the quotes provided by the selected vendors are provided in IR-34 – Confidential Attachment 1.

Maritime Electric's revised budget for the Advanced Metering for Sustainable Electrification Project ("Project") is $64.0 million, which represents a net increase of $16.4 million over the $47.6 million budget estimated in the 2022 Supplemental Capital Budget Request Application ("Application") filed with the Commission on November 25, 2022.[1] In addition, the calculation of interest during construction ("IDC") was updated to reflect the revised budget and resulted in an increase from $1.9 million to $2.8 million. To supplement the revised budget, a revised proposed order is provided in IR-34 – Attachment 2.[2]

Since the Application was filed, the Company initiated a strategic sourcing and procurement process for the Project. This started with the issuance of a request for proposal ("RFP") for both components of the Project. Upon receipt of proposals, the Company completed a detailed evaluation to select a vendor for each component, which was then followed by a detailed scoping and costing process with the selected vendors. This strategic sourcing and procurement process enabled increased project and risk definition and allowed an opportunity to update the individual budgets specific to the selected vendor's design instead of typical market assumptions. The end result is improved budget accuracy.

A breakdown of the revised budget specific to the customer information system ("CIS") and advanced metering infrastructure ("AMI") components, along with an explanation of the variances, follows.

Customer Information System

The CIS budget has increased by approximately $4.7 million, due to an increase of $2.4 million to the contingency allowance,[3] a net increase of $2 million in labour costs,[4] and $1.4 million associated with the strategic sourcing and procurement process.[5] These increases were partially offset by a $1.1 million reduction in other costs due to a change from an On-Premise ("OnPrem") to a Software as a Service ("SaaS") solution.[6] The net increase reflects a better understanding of the complexity involved with integrating the new suite of software products and updated procurement pricing as a result of the CIS RFP process.

A comparison breakdown of the original and revised budget estimates for the CIS component is shown in Table 1.[7]

1 These budget amounts are before the $19 million reduction due to Federal Government funding.
2 In the original proposed order, Appendix E, the Company inadvertently missed adding approval of the IDC.
3 Item 7 in Table 1.
4 Items 3, 4 and 5 in Table 1.
5 Item 9 in Table 1.
6 Items 1, 2 and 8 in Table 1.
7 Table 1 updates the budget originally presented as Table 3 in the Application, Exhibit M-1.

TABLE 1 Breakdown of Original and Updated CIS Component Budget			
Description	**Original**	**Revised**	**Variance**
1. Software	$ 2,470,000	$ 525,000	$ (1,945,000)
2. Hardware	215,000	105,000	(110,000)
3. Vendor Labour	7,490,000	8,295,000	805,000
4. Internal Labour	3,665,000	6,070,000	2,405,000
5. Owner's Engineer	2,600,000	1,375,000	(1,225,000)
6. Other Project Costs	635,000	635,000	-
7. Contingency	2,580,000	4,940,000	2,360,000
8. Maintenance During Project	1,880,000	2,885,000	1,005,000
9. CIS Strategic Sourcing & Procurement	-	1,360,000	1,360,000
TOTAL	**$ 21,535,000**	**$ 26,190,000**	**$ 4,655,000**

The revised budget shown in Table 1 is based on the CIS strategic sourcing and procurement work completed since the Application was submitted. The primary factors that led to the variances are discussed as follows.

1. Software

The original budget for software has decreased by approximately $1.9 million due to a decision to select a SaaS solution. The decision to move from an OnPrem to a SaaS solution was the result of changing market conditions. In late 2022, the CIS RFP was issued to vendors requesting an OnPrem solution with an option to provide a SaaS alternative. Four vendors responded with six separate proposals; four were SaaS solutions and two were OnPrem solutions. The successful proposal was a SaaS solution, as it was determined to be the optimal product to meet Maritime Electric's needs as well as being the lowest cost. As cloud computing has become increasingly affordable, stable, reliable and scalable for many aspects of the digital work environment, it does appear that the CIS market has switched and SaaS is now considered the "norm".

As a result of the change from an OnPrem to a SaaS solution, the requirement for initial capital investment associated with software has been reduced. The business model for OnPrem is based on an upfront one-time software licence cost plus an annual support contract cost, whereas the SaaS business model is based on monthly, or annual, subscription costs with no upfront licencing costs.[8]

2. Hardware

The original budget for hardware has decreased by approximately $0.1 million based on the selection of a SaaS solution that reduced the requirement for capital investment in hardware. A cloud-based service means the servers required to host the software are owned and operated remotely by the vendor (or a third party), which results in less Company owned hardware than is needed for on-site hosting of OnPrem software.

[8] Both models do require initial setup and integration, which is appropriately budgeted as a capital cost.

3. Vendor Labour

The original budget for vendor labour has increased by approximately $0.8 million due to additional work identified to address complexities with organizational change management and to integrate Maritime Electric's existing survey and construction services application into the CIS solution suite.[9]

Working with Kaihen, a change management consultant, additional organizational change management complexity was identified involving the research and documentation of the Company's current processes and the need to enhance business process design documents.[10] In addition, it was discovered that the original plan to integrate the Company's existing survey and construction services system into the new CIS is not a viable solution. Therefore, the existing survey and construction services application will be replaced with a new survey software developed specifically for Maritime Electric's needs as part of the CIS solution suite.[11]

4. Internal Labour

Table 2 outlines a required internal labour cost increase of $2.4 million. During the CIS strategic sourcing and procurement process, it was identified that the original budget underestimated the internal labour costs for project leads, project management and executive oversight. The original budget was refined and allocated to three additional lead positions that are required to support training, testing and change management during the implementation period. The addition of these labour components is supported by two Fortis subsidiaries who recently completed CIS upgrades as they stressed the importance of allowing sufficient labour for such roles to avoid costly change orders during the final stages of the project or after implementation.

A breakdown of these additional internal labour costs is shown in Table 2.

9 The survey and construction services application provides a detailed work package, including design scenarios, materials and cost estimates, prior to the customer's agreement and commencement of a service order. This application is also used to design and cost capital projects.

10 These elements are critical to the avoidance of issue identification later during the implementation which would result in additional costs.

11 The development of this new survey system will require additional professional services from the CIS vendor, which the vendor has agreed to cost share 50/50 with Maritime Electric in exchange for the ability to market the final product.

TABLE 2 Breakdown of Additional Internal Labour Costs			
Description	**Original**	**Revised[12]**	**Variance**
Maritime Electric Business Resources	$ 783,360	$ 834,900[13]	$ 51,540
Maritime Electric Information Technology Resources	1,987,200	590,200[14]	(1,397,000)
Maritime Electric Other Resources	894,440	-	(894,440)
Project Leads	-	2,418,400[15]	2,418,400
Project Management	-	590,200[16]	590,200
Executive Oversight	-	29,500[17]	29,500
Training Lead & Project Accountant	-	426,400[18]	426,400
Testing Lead	-	590,200[19]	590,200
Change Management Lead	-	590,200[20]	590,200
TOTAL	**$ 3,665,000**	**$ 6,070,000**	**$ 2,405,000**

5. Owner's Engineer[21]

The original budget for owner's engineer was decreased by approximately $1.2 million due to the selection of the SaaS solution, which will require less effort related to data solution, reports, query and analytic functions compared to an OnPrem solution. Additionally, Maritime Electric elected to use internal resources for a portion of the integration workload instead of contracted labour. This decision was based on the desire to retain the skillset and knowledge gained through the integration process within the Company. This will aid in system operation, maintenance and future integrations that may be required as business needs are identified in the future.

6. Other Project Costs

The original budget for other project costs was not changed.

12 Based on a blended hourly rate of $90/hour.
13 Three employees at 50 per cent for four years.
14 One employee at 100 per cent for four years.
15 Three employees at 100 per cent for four years, two employees at 50 per cent for four years and one employee contributing 1.86 full-time equivalent ("FTE") years over four years.
16 Two employees at 50 per cent each for four years.
17 0.05 FTE employee each year for four years.
18 0.38 FTE in year one, 0.59 FTE in year two, 1.05 FTE in year 3 and 1.13 FTE employee in year four.
19 One employee at 100 per cent for four years.
20 One employee at 100 per cent for four years.
21 Owner's engineer refers to external labour resources to enhance and augment internal labour resources in areas of quality assurance, project management and subject matter experts.

7. Contingency

The original contingency budget was increased from 15 per cent to 30 per cent to account for higher-than-anticipated complexity associated with integrating certain key business applications with the new CIS, specifically the geographic information system ("GIS") integration and the meter data management ("MDM") integration. The integration of these business applications will be unique to Maritime Electric. In addition, the need to develop a new survey and construction services application adds to that complexity. Therefore, a higher contingency allocation is necessary to account for this complexity.

8. Maintenance During Project

The original budget has increased by approximately $1 million to account for all the software licencing and maintenance costs prior to Project completion. With the switch from an OnPrem to a SaaS solution, the resulting annual licencing fees will increase, which is more than offset by the reduced software costs.

9. CIS Strategic Sourcing and Procurement

CIS strategic sourcing and procurement was initiated in January 2023 as a deferred capital expenditure to ensure the planning aspects of the Project are advanced during the regulatory review stage. This is a necessary step that enables the Company to determine the actual scope and cost of the Project. This was also a necessary step to enable the Company to meet the Project expenditure timelines of the Federal Government funding.

The majority of costs incurred to date under the CIS strategic sourcing and procurement will offset costs that had previously been budgeted under vendor labour, internal labour and owner's engineer costs. Had this process been delayed until Commission approval was received, all of the activities and related costs would still be required and current budget increases would have remained unknown.

Advanced Metering Infrastructure

The AMI budget has increased by approximately $11.7 million, due to an increase in the United States ("US") to Canada currency exchange rate amounting to $3.3 million,[22] a $3.6 million increase in the quantity of meters and network infrastructure,[23] a $2.2 million increase due to inflationary pressures,[24] $1.9 million related to the head-end system,[25] a $0.9 million contingency,[26] partially offset by a net decrease of $0.2 million in labour costs.[27]

Consistent with the CIS component, the revised AMI budget is the result of a strategic sourcing and procurement process that began with an RFP followed by a full review and evaluation of the received proposals. For the AMI component of the Project, two proposals were received and the proposal with the lowest net present value over the lifetime of the project was selected. More importantly, the selected vendor offered a more technically advanced solution. The selected smart meter has a higher processing capacity, a higher processing speed, significantly more memory

22 Meter equipment, item 1 in Table 3, accounts for $2 million and network infrastructure, item 4 in Table 3, accounts for $1.3 million.
23 Meter equipment accounts for $1.0 million and network infrastructure accounts for $2.6 million.
24 Meter equipment accounts for $1.7 million and network infrastructure accounts for $0.5 million.
25 Item 5 in Table 3.
26 Item 11 in Table 3.
27 Items 2, 3, 6, 7, 8 and 10 in Table 3.

capacity, and better cybersecurity features. The combination of these features will ensure the estimated service life of the selected smart meter will be achieved.

In addition, the selected vendor currently offers more application features that can benefit the Company's customers in the future with more innovative rate options. For example, the selected vendor already has an electric vehicle application, which will allow the smart meter to collect information from and communicate with an electric vehicle thereby facilitating the vehicle charging during non-peak periods.[28]

While the scoping process and contract negotiations with the selected vendor resulted in an increase to the original budget, the selected vendor is still the lowest cost option over the life of the project. A comparison breakdown of the original and revised budget for the AMI component is shown in Table 3.

TABLE 3
Breakdown of Original and Updated AMI Component Budget

Description	Original	Revised	Variance
1. Meter Equipment	$ 10,940,000	$ 15,590,000	$ 4,650,000
2. Meter Vendor Services	5,730,000	2,745,000	(2,985,000)
3. Meter Installation	2,600,000	2,215,000	(385,000)
4. Network Infrastructure	1,300,000	5,755,000	4,455,000
5. Head-End System	1,570,000	3,485,000	1,915,000
6. Internal Labour	1,050,000	3,070,000	2,020,000
7. System Upgrade	2,080,000	2,330,000	250,000
8. Professional Services	520,000	890,000	370,000
9. Customer Support	260,000	260,000	-
10. AMI Strategic Sourcing and Procurement	-	520,000	520,000
11. Contingency	-	925,000	925,000
TOTAL	**$ 26,050,000**	**$ 37,785,000**	**$ 11,735,000**

The revised budget shown in Table 3 is based on the AMI strategic sourcing and procurement work completed since the Application was submitted. The primary factors that led to the resulting variances are discussed as follows.

1. Meter Equipment

The original budget for meter equipment (i.e., smart meters) increased by approximately $4.7 million due to changes in the US/Canada currency exchange rate and the average cost per meter since the original budget was prepared.

Currently, the US/Canada currency exchange rate is approximately 1.37 up from 1.22 when the original budget was prepared, increasing the budget by approximately $2 million.[29] Inflationary pressures have caused the average cost per meter to increase by

[28] This feature is outside the scope of the current project but is available when needed, as compared to the other vendor who does not currently offer this feature.

[29] The selected AMI vendor is based in the US and provided its quote in US currency.

approximately 22 per cent resulting in a $1.7 million budget increase. The remaining $1 million increase is due to a revision in the number of meters required.

2. Meter Vendor Services

The original budget for meter vendor services (i.e., vendor labour) decreased by approximately $3 million.[30] Maritime Electric has elected to transfer a portion of the integration workload from the vendor to the Company's internal labour team, which is reflected in the revised budget amount for Item 6 – Internal Labour. This decision was based on the desire to retain the skillset and knowledge gained through the integration process within the Company. This will aid in system operation, maintenance and future integrations that may be required as business needs are identified in the future. This shift also reduces the overall labour cost as internal labour rates are lower than external rates.

3. Meter Installation

The original budget for meter installation decreased by approximately $0.4 million as a result of changing the plan to use on-Island labour resources to complete the installation of the residential meters. The original budget was based on using contracted off-Island resources which have higher labour rates and additional costs for accommodations, meals and other related expenses.

4. Network Infrastructure[31]

The original budget for network infrastructure increased by approximately $4.5 million, due primarily to a detailed scoping of the network design and changes in the US/Canada currency exchange rate.

As a result of the AMI strategic sourcing and procurement process with the selected vendor, the cost of the network infrastructure has increased by approximately $3.2 million, of which $2.7 million is related to an increase in the number of communication devices required and $0.5 million is related to an increase in the per unit cost due to inflation.[32] A propagation study was completed by the selected vendor which has itemized the number of communication devices needed, and their locations, to ensure adequate communication of data from the meters to the head-end system and ultimately to the MDM system.

As noted above, currently the US/Canada currency exchange rate is approximately 1.37 up from 1.22 when the original budget was prepared, increasing the budget by an additional $1.3 million.

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30 Both vendor and internal labour is required to configure the various elements of the AMI Project (i.e., the meter's internal software, the head-end system, the communication devices, etc.) to the Company's specifications.

31 Network infrastructure refers to the communication devices required to transmit meter data from the AMI meter mesh network to the head-end system and ultimately to the MDM.

32 Alternatively, the other vendor's proposal included network infrastructure requirements that were largely in line with the original budget; however, their costing was higher than the selected vendor over the life of the project and yet their solution was not as technologically advanced.

5. Head-End System[33]

The original budget for the head-end system increased by approximately $1.9 million. The AMI strategic sourcing and procurement process identified that the original budget had underestimated this component of the Project as compared to the detailed scoping with the selected vendor.

6. Internal Labour

As discussed above, the Company has elected to transfer a portion of the integration workload from the vendor to the Company's internal labour team. As a result, the original budget for internal labour increased by approximately $2.0 million; however, the overall labour cost including both vendor and internal labour has decreased by approximately $0.2 million.[34]

7. System Upgrade

System upgrade is a labour cost required to enable AMI to function with Maritime Electric's existing software systems until the new CIS is fully operational.[35] The budget increase of approximately $0.3 million reflects inflationary increases to labour rates and a better understanding of the programming work that will be required by Company resources to ensure that all software-dependent operational functions can continue to be used during the transition period.

8. Professional Services

Professional services is another labour component related to site surveys of the communication devices and their subsequent installation. The original budget has increased by approximately $0.4 million, primarily due to inflationary increases to labour rates and the increased number of communication devices required.

9. Customer Support

The original budget for customer support has not changed.

10. AMI Strategic Sourcing and Procurement

Consistent with the CIS component of the Project, AMI strategic sourcing and procurement was initiated in January 2023 as a deferred capital expenditure to ensure that planning aspects of the Project advanced during the Application regulatory review stage. This is a necessary step that enables the Company to determine the actual scope and cost of the Project. This has also been a necessary step to enable the Company to meet the Project expenditure timelines of the Federal Government funding.

The majority of costs incurred to date under the AMI strategic sourcing and procurement will offset costs that had previously been budgeted under meter vendor services, internal labour and professional services. Had this process been delayed until Commission approval was received, all of the activities and costs would still be required and current budget increases would remain unknown.

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[33] The head-end system consists of hardware and software that provides short-term storage of data before it is moved to the MDM system where long-term storage is provided. The head-end system also provides operational control of the communication devices and meters.

[34] Items 2, 3, 6, 7, 8 and 10

[35] Existing software that will need to be modified include systems for service orders, billing, survey, work management, GIS, outage management and net metering.

11. Contingency

The original AMI budget did not include a specific contingency allowance, instead costs were based on industry averages. The AMI strategic sourcing and procurement process has fixed the cost of certain items.[36] A 10 per cent contingency allowance has been added to the revised budget to reflect the remaining estimation in the non-fixed costs.

Interest During Construction

As a result of the revised budget, the calculation of IDC was also revised, as provided in IR-34 – Attachment 3, reflecting a $0.9 million increase from $1.9 million in the Application to $2.8 million.

Time-Sensitive Budget

Maritime Electric appreciates and respects the regulatory process, which takes time to complete, and to the best of its ability the Company has endeavored to facilitate a timely decision on this Application. However, the Company would be remise to not highlight for the Commission the time-sensitive nature of the revised total budget as it relates to both the Federal Government funding and the revised vendor quotes presented herein.

The Company initially sought Federal Government funding to address the AMI business case, which had a negative net present value of $3.9 million. Together, the CIS and AMI components qualified for $19 million of funding under the Smart Renewables and Electrification Pathways Program, Grid Modernization Stream. The Company would like to respectfully remind the Commission that the Federal Government funding is time sensitive and could expire if not fully used by March 31, 2025.[37]

In the Company's response to IR-33, the $19 million was allocated to both components of the Project given it was the combined project that qualified for the funding. In assessing the prudency of this Application, an alternate view could be used whereby the funding is fully allocated to the AMI component. This alternate view considers the fact that the CIS component of the Project did not include a business case as its justification is appropriately based on the fact that it is a critical component of many of the Company's core business functions and it has reached end of life, due to technological obsolescence. A revised AMI business case reflecting this alternate view, as shown in Table 4, still results in a positive business case.

[36] The revised budgets for items 1, 2, 4 and 5 in Table 3 have fixed unit costs.

[37] Depending on the timing of the Commission's decision, the Company has an executable timeline that will satisfy the Federal Government funding deadline.

TABLE 4 Revised AMI Business Case	
Original Net Present Value	(3.9)
Federal Government Funding	19.0
Subtotal	**15.1**
Budget Increase	(11.7)
Revised Benefits[38]	1.9
Revised Net Present Value	**5.3**

With respect to the revised budgets provided herein, they are also time sensitive. As the Company continues to negotiate with the selected vendors in good faith, they have so far agreed to maintain their quotes to allow the regulatory process to reach a natural conclusion.[39] A significant delay into 2024 on the issuance of a decision will likely require the selected vendors to update their quotes, which will inevitably result in a budget increase.

[38] Just as inflationary pressures have increased various budget costs, it has also increased the calculation of the expected benefits. Util-Assist provided an updated net present value calculation of the quantifiable benefits included in the original business case, which is provided as IR-34 – Attachment 4.

[39] For example, the CIS quote, provided in IR-34 - Attachment 3, was issued September 14, 2023 and was valid for 90 days.

IR-35 Is there a contingency built into the budgeted figures to absorb any unexpected costs or cost increases? Please provide details.

Response:

Yes, both the CIS and AMI components of the Project include a contingency.

The CIS budget presented in IR-34 - Table 1 was increased to reflect a $4.9 million contingency allowance. As indicated, the CIS strategic sourcing and procurement process identified a higher-than-anticipated level of complexity associated with integrating certain key business applications with the new CIS, along with the requirement to develop a new survey and construction services application. This resulted in the Company increasing the CIS contingency allocation from 15 per cent to 30 per cent.

The AMI budget includes a contingency allowance of $0.9 million, which represents a 10 per cent contingency allowance for all non-fixed cost items. The AMI contingency allowance is less than the CIS contingency allowance primarily due to the fact that a considerable portion of the AMI budget is based on fixed-cost quotes.

IR-36 At this time, is MECL expecting this project to be completed on budget?

Response:

The Company expects that the revised budget, provided in the response to IR-34, will allow the Project to be completed on budget. However, as with any multi-year project of this complexity, there remains some level of risk that unknown and unbudgeted items may be identified during the project execution.

APPENDIX E

Proposed Order

6.0 PROPOSED ORDER

C A N A D A

PROVINCE OF PRINCE EDWARD ISLAND

BEFORE THE ISLAND REGULATORY
AND APPEALS COMMISSION

IN THE MATTER of Section 17(1) of the *Electric Power Act* (R.S.P.E.I. 1988, Cap. E-4) and **IN THE MATTER** of the Application of Maritime Electric Company, Limited for the approval of a 2022 Supplemental Capital Budget Request for the Advanced Metering for Sustainable Electrification Project.

UPON receiving an Application by Maritime Electric Company, Limited ("Maritime Electric") for approval of the Advanced Metering for Sustainable Electrification Project;

AND UPON considering the Application and Evidence in support thereof;

NOW AND THEREFORE pursuant to the *Electric Power Act* and the *Island Regulatory and Appeals Commission Act;*

IT IS ORDERED THAT

1. The Advanced Metering for Sustainable Electrification Project, filed herein on November 22, 2022 with a revised budget as provided in response to IR-34 and summarized below is approved.

Advanced Metering for Sustainable Electrification Project	
Description	**Total**
Customer Information System	$ 26,190,000
Advanced Metering Infrastructure	37,785,000
Funding Contribution	(19,000,000)
Subtotal	**44,975,000**
Interest During Construction	2,800,000
Total	**$ 47,775,000**

DATED at Charlottetown this _____ day of _____, 2024

BY THE COMMISSION

_____

Chair

_____

Commissioner

_____

Commissioner

Estimated Interest During Construction					
Description	**2023**	**2024**	**2025**	**2026**	**TOTAL**
Annual Gross Capital Budget	$ 3,187,900	$ 26,416,700	$ 24,231,800	$ 10,132,600	$ 63,969,000
Amounts not subject to IDC - AMI Meters & Installation	-	(5,459,000)	(12,346,000)	-	(17,805,000)
Annual Contributions	(1,593,960)	(13,208,350)	(4,197,690)		(19,000,000)
Annual Contributions not subject to IDC - AMI Meters & Installation		2,730,000	2,139,000		4,869,000
Total Capital Applicable to IDC	**1,593,940**	**10,479,350**	**9,827,110**	**10,132,600**	**$ 32,033,000**
Average Balance of Work-in-Progress Subject to IDC	**796,970**	**6,833,615**	**16,986,845**	**16,016,500**	**$ 32,033,000**
Forecast Average Return on Rate Base*	6.6%	6.7%	6.9%	6.9%	
Average Number of Days to Finance	365	365	365	365	
Proposed Annual Budget for IDC	**$ 53,000**	**$ 456,000**	**$ 1,170,000**	**$ 1,103,000**	**$ 2,782,000**
Proposed Change to IDC Budget	**$ -**	**$ 105,000**	**$ 383,000**	**$ 380,000**	**$ 868,000**

Quantifiable Benefit	Description	Revised Benefit	Original Benefit
Meter Reading and Field Services	Reduce meter reading costs through a reduced meter reading workload such as turn off and meter rereads.	$10,842,114	$10,363,300
Conservation Voltage Reduction	Reduce energy consumption and demand by dynamically optimizing voltage levels through conservation voltage reduction.	$3,775,136	$4,913,364
Distribution Network Losses	The cost savings from a reduction in system losses - including technical and non-technical losses – from programs such as theft detection and improved asset management. This reduction in losses leads to reduced wholesale energy purchases.	$4,625,650	$3,754,526
Avoided Meter Replacement Costs	The avoided costs of existing meter replacement, repair costs from failures associated with those meter replacements, and avoided meter seal costs.	$2,445,076	$2,203,741
Outage Restoration (Crew Management)	Savings from reduced costs associated with avoiding service crews responding to false outage reporting as AMI provides visibility to meters where power has been restored.	$2,422,285	$2,092,672
Avoided Cost of Meter Reading Vehicles	The cost savings for vehicle expenses related to meter reading routes.	$1,906,183	$1,429,421
Handheld System	Benefit produced from reduced handheld meter reading system costs, as replacements can be reduced as a result of AMI deployment.	$1,658,206	$1,252,614
Customer Care Billing Complaints Related to Estimated or Wrong Reads and Meter Data Validation	Reduced customer calls from estimated or wrong readings and incorrect billing by automated meter data validation processes.	$1,124,223	$1,021,295
Unbilled/Uncollectable Accounts	Benefit generated from reduced write-offs from electricity delivered but remaining unpaid due to customers defaulting on bill payment.	$661,827	$614,292
Avoided Cost of Net Metering Program	Benefit assumes that AMI meters will provide net metering functionality and reflects avoided costs of net meters and associated installation, labour, and software licensing.	$465,129	$431,679
Reduced Overtime for Meter Service Orders	This benefit is associated with the reduced overtime hours needed for reconnects, which will now be done remotely.	$95,895	$72,947
Total		**$30,021,724**	**$28,149,851**