December 16, 2015

Dominic Parrella President & CEO PUC Distribution Inc. 550 Second Line East, P.O. Box 9000 Sault Ste. Marie, ON P6A 6P2

Re: <u>Amendment to Letter of Intent</u>

Dear Dominic:

PUC Distribution Inc. ("**PUC**") and Energizing, LLC ("**ECo**") are parties to a Letter of Intent dated July 26, 2013, as amended (the "Letter of Intent") pertaining to the proposed utility distribution microgrid ("**UDM**") project in Sault Ste. Marie, Ontario, Canada (the "**UDM Project**"). Any capitalized term used in this letter (this "Amendment") without definition has the meaning ascribed to it in the Letter of Intent.

We note that the proposed UDM Project currently being considered has evolved to the point where the Term Sheet attached to the original Letter of Intent dated July 26, 2013 is no longer applicable. Accordingly, the attached Term Sheet in Respect of an Arrangement for the Provision of UDM Technology and Services to PUC Distribution Inc. attached hereto as <u>Exhibit A</u> (the "<u>Project Term Sheet</u>") is hereby deemed to replace and supersede the Term Sheet attached to the Letter of Intent.

You have informed us that PUC has assembled a Study/Review Team to investigate and assess the potential benefits of the UDM Project, which team (the "<u>S/R Team</u>") is comprised of PUC senior staff, the Chair and Vice Chair of the Board of Directors of PUC, the CAO of the City of Sault Ste. Marie, the Executive Director of the Sault Ste. Marie Innovation Centre and the CEO of the Sault Ste. Marie Economic Development Corporation (the "<u>SSMEDC</u>"). You also have informed us that the S/R Team requires more time to adequately conduct its due diligence and is committed to carry out this work as quickly as possible. Toward that end, PUC will carry out the following activities within the following timelines:

- 1. Completion of a socio-economic benefit assessment commissioned by the PUC and undertaken by the SSMEDC in consultation with community stakeholders on or before March 4, 2016;
- 2. Completion of a PUC-commissioned third party review and assessment report of the project business case and accounting treatment on or before March 4, 2016;
- 3. On or before March 30, 2016, negotiate and, subject to the Parties reaching agreement on certain open material terms (e.g., pricing), enter into a mutually agreed-upon final term sheet generally incorporating the terms set forth in the Project Term Sheet and calling for execution of definitive documents and financial close on or before July 25, 2016 (the "Final Term Sheet"), it being expressly agreed that the effectiveness of the Final Term Sheet shall be subject to the approval by each of the Board of Directors of PUC and the City Council of the City of Sault Ste. Marie as described below; and

Mr. Dominic Parrella December 16, 2015 Page 2 of 2

4. Subject to the Parties' successfully negotiating the Final Term Sheet, seek the approval by each of the Board of Directors of PUC and the City Council of the City of Sault Ste. Marie of the Final Term Sheet and the transactions contemplated thereby (subject to the negotiation and execution of the final definitive agreements) on or before April 11, 2016.

In support of the foregoing, Paragraph 2.b. of the Letter of Intent is hereby amended by extending the term of the Exclusivity Period to August 1, 2016. Save and except as amended herein, the Letter of Intent is hereby ratified and affirmed and all other terms of the Letter of Intent shall remain in full force and effect.

If you are in agreement with the foregoing, please so indicate by countersigning below.

We look forward to continuing to work with you.

Sincerely,

Glen Martin, Chief Executive Officer Energizing, LLC

AGREED AND ACKNOWLEDGED:

PUC Distribution Inc.

By:

Dominic Parrella Its: President & CEO

EXHIBIT A

TERM SHEET IN RESPECT OF AN ARRANGEMENT FOR THE PROVISION OF UDM TECHNOLOGY AND SERVICES TO PUC DISTRIBUTION INC.

This term sheet ("**Term Sheet**") is meant for discussion purposes only and is not an exhaustive summary of the terms and conditions upon which the parties referred to herein would enter into a binding transaction. This Term Sheet reflects the current understandings of the contemplated transaction and, except as set forth below under the heading "Binding Provisions", does not constitute a legally binding or enforceable agreement.

Objective:

The objective of the project is to integrate into PUC's electricity distribution system market leading technology to permit PUC to operate a more reliable, cost effective and efficient system that delivers high quality power and that will allow for integration of more distributed energy resources, to meet the objectives of PUC as it relates to its "smart grid" mandates and to optimize the operation of PUC's system for the long term benefit of its customers. PUC and Project Co will enter into a long term arrangement pursuant to which Project Co will design, procure, build, finance and oversee the maintenance of equipment and systems to create a utility distribution microgrid ("**UDM**") (including the completion of certain sub-station upgrades and new and rebuilt sub-stations) and assist in the management of the UDM (the "**Project**").

At all times the Project will be integrated with PUC's electricity distribution system and subject to regulation by the Ontario Energy Board.

Participants:

"PUC"	PUC Distribution Inc., an indirect subsidiary of the Corporation of the City of Sault Ste. Marie and the local distribution company licensed by the Ontario Energy Board to distribute electricity within the boundaries of the City of Sault Ste. Marie and certain nearby townships.
"Energizing" or "ECo"	Energizing, LLC, a Delaware limited liability company and the proponent of this transaction.
"Project Co"	[ECo SSM LP] , an Ontario limited partnership. Project Co will be a special purpose limited partnership created to undertake the Project and all activities incidental thereto. The limited partners of Project Co will be ECo and its primary financing partner(s). The general partner of Project Co will be ECo GP Inc., an Ontario corporation. [ECo GP Inc. will be a wholly-owned subsidiary of ECo.] Project Co will be funded, directly or indirectly, by ECo and its primary financing partner(s).
"EPC Contractor"	[a major engineering company and technology provider].
"EPC Guarantor"	[credit worthy parent of EPC Contractor].
"Services Provider"	[an experienced maintainer of smart grids].
"Services Guarantor"	[creditworthy parent of Services Provider].

Summary of Project:

The Project contracts will provide:

- 1. Project Co is responsible for design, procurement, construction and overseeing the maintenance of the Project under a performance-based contract.
- 2. If construction or maintenance does not meet or exceed certain performance thresholds, Project Co will suffer deductions from payments or make payments to PUC, in either case on an annual basis.
- 3. Payments by PUC to Project Co will commence on a fixed agreed date and will consist of monthly payments which cover, among other things, all development, design, procurement and construction costs, maintenance and lifecycle costs and financing costs as more particularly described herein.
- 4. The regular payment will escalate over time (at the Consumer Price Index) to reflect inflation.
- 5. At the end of the term of the Project, PUC will retain the UDM System without any payment by PUC.
- 6. The principal agreements necessary to implement the Project are as follows:
 - (a) Project Agreement;
 - (b) EPC Contract;
 - (c) Services Agreement; and
 - (d) Interface Agreement.

Structure:



Ontario Energy Board:

[PUC's rates are regulated by the Ontario Energy Board ("OEB") and currently fixed in a rate order approved by the OEB for the period ending May 1, 2018. The PUC's rates are based on its approved cost of service, which does not currently include PUC's expenditure of the Monthly Payments. The PUC's application for rates effective May 1, 2018 will include a request for recovery of the costs of the Monthly Payments for the Term of the Project Agreement. Project Co will support PUC's request to the OEB for recovery of such costs.]

Definitions:

Capitalized terms used but not defined in this Term Sheet have the meanings set out in **Schedule A**.

Binding Provisions:

In consideration of the covenants and agreements set forth below, each of PUC and Energizing agree as follows:

- (a) Promptly following the execution and delivery of this Term Sheet, each of PUC and Energizing will in good faith proceed to negotiate the principal agreements necessary to implement the Project at the earliest possible date, and in any event by •, 2015. The parties agree that the entering into of the agreements necessary to implement the Project is subject to approval of the Board of Directors of each of the Participants.
- (b) Commencing on the date hereof and ending on (the "Exclusivity Period"), neither PUC nor any of its officers, directors, managers, employees, members, shareholders, affiliates, agents, financial advisors and other representatives (collectively, "Representatives") shall, directly or indirectly, solicit, initiate, entertain or encourage any proposals or offers from any third party relating to any transaction (a "Third Party Transaction") that would interfere with or be inconsistent with the series of transactions contemplated hereby to design, procure, build, finance, maintain and operate a UDM in Sault Ste. Marie, Ontario, Canada. Furthermore, during the Exclusivity Period, neither PUC nor any of its Representatives shall participate in any discussions or negotiations regarding, or furnish to any person or entity any information with respect to, or otherwise cooperate with, facilitate or encourage any effort or attempt by any person or entity to do or seek, a Third-Party Transaction.
- (c) This Term Sheet and the negotiations related hereto are subject to the nondisclosure agreement executed by PUC on July 22, 2013 and by Energizing on July 29, 2013.
- (d) Each of PUC and Energizing will be responsible for its own expenses in connection with the Project and all necessary agreements relating thereto.
- (e) These Binding Provisions are governed by and will be construed in accordance with the laws of the Province of Ontario and the laws of Canada applicable therein.

(f) This Term Sheet does not create any legally binding obligations on any party referred to herein (other than those contained in these paragraphs (a) to (f) under the heading "Binding Provisions").

Project Agreement:

- **1. Parties:** Project Co and PUC
- 2. General: Project Co and PUC will enter into a comprehensive Project Agreement prepared on the basis of this Term Sheet. The Project Agreement will provide that Project Co will design, procure, build, finance and oversee the maintenance of the UDM System (including the completion of certain upgrades to specified sub-stations and new and rebuilt sub-stations), assist in the management of and perform certain lifecycle obligations with respect to the UDM System on the terms described in this Term Sheet.
- **3. Term:** The term of the Project Agreement will be from the date of execution thereof to **[20 to 30]** years from the Payment Commencement Date.
- 4. Payment Commencement Date: A date certain agreed to by the parties upon which date PUC will commence making the Monthly Payments. While the Payment Commencement Date will be calculated having regard to the date that specified components of the UDM System are expected to have been installed, inspected and achieved commercial operation, PUC's obligation to commence making the Monthly Payments will not be conditioned on the achievement thereof.
- 5. UDM System: The UDM System will include the Major Systems described in the attached Schedule B as well as other systems to be identified and agreed by the parties prior to the entering into of the Project Agreement. The UDM System will satisfy the technology requirements described in Schedule B. Other systems may be added by agreement of the parties, each as a Change (see Changes in Section 25 below). The UDM System will have a design service life of a minimum of 20 years, except where a different design service life is specified for individual equipment components, systems or sub-systems.
- 6. UDM Design: Project Co will be responsible for the UDM Design of the UDM System. Within • months of the entering into of the Project Agreement, Project Co shall complete the UDM Design and provide same to PUC for review. The UDM Design will be subject to a system of review by PUC and coordination with PUC to ensure that the UDM Design is compatible with the PUC's systems. The system of review will consist of review by PUC at appropriate stages of the development of the UDM Design architecture and the UDM Design drawings, and will stipulate time frames for feedback and set out mechanisms to describe how relevant technical experts and other stakeholders (including the Services Provider) will comment on development of the UDM Design. Any disagreement as to any element of the UDM Design will be resolved by the Dispute

Resolution Procedure. The UDM Design will include the following, as described in more detail in Schedule B: (a) Volt Var Management ("VVM"); (b) Distribution Automation ("DA"); Advanced Metering Infrastructure ("AMI"); and (C) (d) Substations Work ("SSW"). 7. Construction: Project Co will be responsible for the Construction of the UDM System. Following review and verification of the UDM Design by PUC, Project Co will or will arrange for the Construction of the UDM System. The Construction will be subject to a system of review by PUC and coordination with PUC to ensure that the Construction will not interfere with the provision by PUC of its current services to its customers, except as agreed by PUC, acting reasonably. 8. Design and Within • months of the entering into of the Project Agreement, Construction Project Co will complete the UDM Design and complete such Period: elements of the UDM System so as to achieve the Service Commencement Date. Within • months of the Service Commencement Date, Project Co will complete Construction of the remaining elements of the UDM System. The UDM System will be constructed in accordance with Good Utility Practice. Project Co will be the exclusive provider to PUC of the UDM System 9. Exclusivity: (including related upgrades to sub-stations and new and rebuilt substations) and the components and equipment related thereto for the term of the Project Agreement. 10. Phasing of UDM The UDM Design and Construction will be completed in accordance Design and with the following phasing procedures (each of the below being Construction sometimes referred to herein as, a "Phase"): Phase I will include (i) the complete Design, Construction (a) and operation of the initial four (4) Substations (i.e., substation numbers 2, 11, 13 and 15); (ii) completion of a 30% engineering Design for the next four (4) substations (i.e., substation numbers 1, 18, 19 and 20); (iii) community outreach activities in support of the Ontario Energy Board Application for the Project; and (iv) PUC's preparation as soon as reasonably practicable of a sufficient portion of PUC's Distribution Service Plan (the "DSP") to allow for harmonization of the Project priorities with PUC's Ten Year Capital Expenditure Plan priorities (the "Phase I Work"). Phase II will include (i) the complete Design, Construction (b) and commissioning of the next four (4) Substations (i.e., substation numbers 1, 18, 19 and 20); and (ii) the complete Design, Construction and commissioning of all remaining aspects of the

		UDM Syste contingent under (1) th Custom Inc Rate-setting support for mutually ag	em (the "Phase II Work"). The Phase II Work will be upon the earliest of (A) OEB approval of the Project the 4 th Generation Incentive Rate-setting method; (2) the centive Rate-setting method; or (3) the Annual Incentive g Index method; or (B) OEB's informal indication of the Project in such form as PUC and Project Co. gree to be satisfactory.
11. Monthly Payments:PUC will make monthly payments Payment Commencement Date. T in advance and set out in the Project be sufficient to (i) amortize project (i.e., the cost of the EPC Contract) be undertaken by Project Co, (iii) p operating costs incurred by Project Project, (iv) pay replacement and I return on equity/debt, over the terr first monthly payment will be in the The monthly payment amount will increases in the Consumer Price I		ake monthly payments to Project Co commencing on the ommencement Date. The monthly payments will be fixed and set out in the Project Agreement. The payments will t to (i) amortize project design and construction costs st of the EPC Contract), (ii) pay costs for maintenance to ken by Project Co, (iii) pay development costs and osts incurred by Project Co in connection with the pay replacement and lifecycle costs, and (v) pay a quity/debt, over the term of the Project Agreement. The y payment will be in the amount set forth Schedule C . y payment amount will be escalated annually for in the Consumer Price Index.	
		Project Co to PUC, in (the standar	will suffer deductions from payments or make payments either case on an annual basis, for performance below rds set forth on Schedule D .
12.	PUC's General	PUC's oblig	gations under the Project Agreement will include:
	Obligations:	(a)	PUC will obtain certain agreed Permits necessary for the transaction, including \bullet .
		(b)	complying with all Permits relevant to, or under the control of PUC (whether such Permits are obtained by PUC or Project Co), in accordance with their terms;
	\cap	(C)	coordination and cooperation with Project Co to facilitate the UDM Design and Construction;
	C	(d)	operating responsibility and operating authority for the UDM System;
		(e)	furnishing and scheduling personnel to perform maintenance on the UDM System in accordance with maintenance plans and schedules prepared by Project Co;
		(f)	coordination and cooperation with Project Co to facilitate the provision of the Services; and
		(g)	to make the payments to Project Co contemplated in the Project Agreement when due and payable.

13. Project Co's General Obligations: Project Co's obligations under the Project Agreement will include:

- (a) subject to and in accordance with the provisions of the Project Agreement and all applicable Laws and Permits, Project Co will carry out the UDM Design and Construction, perform Provisioning and System Expansion as required to perform the Services;
- (b) support PUC's request to the OEB for recovery of the Monthly Payments for the Term of the Project Agreement;
- (c) develop the deliverables identified in Schedule E;
- (d) not engaging in any business or activity other than the business or activities conducted for the purpose of the Project;
- (e) being responsible for the conduct of the Project Co Persons;
- (f) contracting with Project Contractors (who in turn may contract with Sub-Contractors) to carry out the UDM Design, Construction, Provisioning, System Expansion and/or Services, provided that notwithstanding the use of Project Contractors or Sub-Contractors, Project Co (i) will not be relieved of or excused from any of its obligations or liabilities under the Project Agreement, and (ii) will remain principally liable to PUC for the due observance of all the covenants, obligations, agreements and conditions of the Project Agreement that are to be observed and performed by Project Co;
- (g) obtaining certain agreed Permits necessary for the transaction, including ●, and and complying with all such Permits in accordance with their terms;
- (h) responding in writing to all written inquiries received from PUC as soon as reasonably practicable at its own cost and expense, retaining and maintaining records and reports in a form capable of audit by PUC and making them available to PUC upon reasonable notice;
- attain Service Commencement by the Target Service Commencement Date; provided Project Co's liability for failing to do so shall be limited to the liquidated damages referred to in Section 16;
- (j) undertake the commissioning of the UDM System in accordance with the Commissioning Plan; and
- (k) assist PUC with customer outreach during the threeyear period following the Effective Date in accordance

with a mutually agreed project plan.

14. Performance Testing:	Upon completion and commissioning of identified components of the UDM System, an agreed performance test will be conducted on those components under the supervision of the Independent Certifier to confirm that they meet the agreed performance standards relating thereto.
	The VVM performance parameter will be measured whereas the End-of-Line meter voltage stays within an average-of-average daily voltage reading range of 110V to 115V over a period of [five (5) days]. The DA performance parameter will be based on finding the fault location, isolating the fault and restoring service to all unfaulted zones within five (5) minutes of fault inception.
15. System Performance:	If a component of the UDM System does not meet the performance standards relating thereto upon its commissioning, Project Co will, following a reasonable cure period, either make such alterations to such component as may be necessary to meet the performance standards or pay to PUC certain agreed compensation.
16. Liquidated Damages:	Project Co will pay liquidated damages in an agreed amount per day to the extent that Project Co fails to achieve Service Commencement by the Longstop Date.
17. Operations and Maintenance:	Project Co and PUC will mutually determine the appropriate allocation of responsibilities for the operation and maintenance, taking into account applicable PUC and Ontario Energy Board requirements and existing relevant labour agreements.
6	Operating responsibility and operating authority for the UDM System shall remain solely with PUC. PUC shall carry out all maintenance, rehabilitation and lifecycle work in accordance with the service plans developed by Project Co in accordance with the Project Agreement and continue to operate the UDM System in accordance with such service plans and the Project Agreement. Project Co shall oversee all services under the Services Agreement carried out by the Services Provider after the Service Commencement Date and prior to expiry of the Term so as to permit the safe and reliable operation of the UDM System by PUC.
	All services performed by Project Co (through the Services Provider) will be conducted in cooperation with PUC to minimize the interference with PUC's operation of the UDM System.
18. Ownership of UDM System:	Upon installation of any component of the UDM System, legal title will vest in PUC subject to a licence by PUC to Project Co to access and use such component for the purpose of carrying out the Project.
19 . Security:	As security for its obligations to Project Co, PUC will grant to Project Co a security interest in the UDM System and amounts collected

	from ratepayers relating thereto. In this regard, PUC will provide Project Co:
	 a general security agreement whereby PUC will grant a security interest on all its present and future personal property;
	 (ii) a debenture whereby PUC will grant a security interest in its real property;
	(iii) a blocked account agreement with PUC's banker; and
	 (iv) a guarantee by the Corporation of the City of Sault Ste. Marie of the obligations of PUC under the Project Agreement.
20. Performance Security:	As security for its obligations under the Project Agreement, Project Co will provide PUC with the security it receives from EPC Contractor and Services Provider referred to in Section 7 under the heading "EPC Contractor" and Section 6 under the heading "Services Agreement".
21. Replacement and Handback:	Project Co will be responsible for periodic replacement of components of the UDM System which have a design or actual life less than the term of the Project Agreement and for handing the UDM System over to PUC at the end of the term of the Project Agreement in a fully functional and operating state. PUC will be responsible for damage to the UDM System that was not caused by Project Co, the Project Contractors, the Sub-Contractors, or their respective employees, including damage arising from a Force Majeure Event and insurable events.
22. Technology Licence:	Project Co will provide PUC a royalty free licence for the UDM System to use all Project data and intellectual property to operate the UDM System (but not for commercial exploitation or use in any system other than the UDM System).
23. Technology and Upgrades:	Project Co will be responsible to change or upgrade technology (including software) which no longer functions as intended. Changes to the UDM System required by changes in Law will be the responsibility of PUC.
24. Insurance:	The Project Agreement will require that Project Co will at its expense obtain and keep in force insurance arrangements during construction of the UDM System (most likely through EPC Contractor's and Services Provider's insurance policies, if such policies meet the requirements of PUC, Project Co and Project Co's financing providers). Following the construction of particular components of the UDM System, PUC will insure the completed components under its insurance program and will add Project Co, the [EPC Contractor] and Services Provider as named insureds with respect to the insurance for the UDM System. Replacement by

Project Co of insured damage will be to the extent of insurance proceeds only.

25. Changes: PUC will have the right to direct that certain Changes be made to the UDM System by way of a request to Project Co for a variation. Project Co will respond to a request for variation by providing a pricing estimate. If the pricing estimate is acceptable, the parties will enter into a final variation confirmation. These arrangements will be subject to a short form dispute resolution procedure. The changes which PUC may direct include expansion of the UDM System to include new geographic areas. In addition, the PUC may request that Project Co provide other additional capabilities beyond the UDM System and sub-station/transformer upgrades, such as combined heat and power ("CHP") generating facilities and energy storage systems. The parties' agreement to include such additional capabilities would be documented in a new agreement. The entering into of such new agreement shall be at the sole discretion of each of the parties.

26. Supervening Events:

If:

- (a) a Compensation Event, Relief Event or Excusing Event occurs, Project Co may; or
- (b) a Force Majeure Event or Eligible Change in Law Event occurs, either party may,

apply for relief from its obligations, extensions of time or claim compensation under the Project Agreement to the extent provided in the Project Agreement.

If certain extended Force Majeure Events or Relief Events occur either party may claim a termination right.

Upon the occurrence of a Supervening Event, the party affected will provide the other party with notice of the Supervening Event in accordance with a process to be set forth in the Project Agreement.

Project Co shall indemnify PUC for any Direct Losses suffered by PUC as a result of:

- (a) any loss of or physical damage to property or assets of PUC, or any claim made by one or more third parties (including for loss of or physical damage to property or assets), or any claim for, or in respect of, the death, personal injury, disease or illness of any person, arising by reason of any:
 - (i) grossly negligent act or omission of Project Co or any Project Co Person;
 - (ii) wilful misconduct of Project Co or any Project Co

27. Indemnities:

Person; or

- (iii) non-compliance by Project Co or any Project Co Person with any of the provisions of the Project Agreement or any document, instrument or agreement delivered to PUC as required under the Project Agreement;
- (b) breach of any representation or warranty by Project Co under the Project Agreement;
- (c) any Project Co Hazardous Substances;
- (d) breach by Project Co of, or non-compliance by Project Co with, Permits or Laws;
- (e) a failure by Project Co to obtain and maintain Project Co Permits; and
- (f) any infringement or misappropriation of intellectual property rights of any person by Project Co;

except to the extent caused, or contributed to, by non-compliance by PUC with any provision of the Project Agreement or any grossly negligent act or omission, or any wilful misconduct, of PUC or any PUC Person or Project Co acting in accordance with a Change directive.

Project Co shall not be liable under the Project Agreement, in tort or any other basis for any Indirect Losses of PUC.

PUC shall indemnify Project Co for any Direct Losses suffered by Project Co as a result of:



- any loss of or physical damage to property or assets of Project Co, or any claim made by one or more third parties (including for loss of or physical damage to property or assets), or any claim for, or in respect of, the death, personal injury, disease or illness of any person, arising by reason of any:
 - (i) grossly negligent act or omission of PUC or any PUC Person;
 - (ii) wilful misconduct of PUC or any PUC Person; or
 - (iii) non-compliance by PUC or any PUC Person with any of the provisions of the Project Agreement or any document, instrument or agreement delivered to Project Co as required under the Project Agreement;

		(h)	breach of any representation or warranty by PUC under the Project Agreement;
		(i)	any PUC Hazardous Substances;
		(j)	breach by PUC of, or non-compliance by PUC with, Permits or Laws;
		(k)	a failure by PUC to obtain and maintain Permits to the extent required to do so under the Project Agreement; and
		(I)	any infringement or misappropriation of intellectual property rights of any person by PUC;
		except to t by Project grossly neg Project Co	he extent caused, or contributed to, by non-compliance Co with any provision of the Project Agreement or any gligent act or omission, or any wilful misconduct, of or any Project Co Person.
		PUC shall other basis	not be liable under the Project Agreement, in tort or any for any Indirect Losses of Project Co.
		The maxim indemnity of (Index Link proceeds r maintained shall not a wrongdoin	num aggregate liability of each party in respect of all claims under the Project Agreement shall not exceed \$• ked). This limit shall be exclusive of any insurance eccived or which will be received pursuant to policies I in accordance with the Project Agreement. This limit oply in cases of willful misconduct or deliberate acts of g.
28.	Representations and Warranties of	Convention Project Co	nal representations and warranties will be given by including, but not limited to, the following
	Project Co:	(a)	existence and status of Project Co and ECo GP. Inc.;
		(b)	authority to enter into the Project Agreement;
	\int	(c)	enforceability of the Project Agreement as against Project Co;
		(d)	absence of litigation;
		(e)	list of required Permits to be obtained by Project Co; and
		(f)	as to ownership of Project Co.
29.	Representations and Warranties of	Conventior including, t	nal representations and warranties will be given by PUC but not limited to:

(a) existence and status of PUC;

PUC:

- (b) authority of PUC to enter into the Project Agreement;
- (c) enforceability of the Project Agreement as against PUC;
- (d) absence of litigation;
- (e) list of required Permits to be obtained by PUC; and
- (f) as to the ownership of PUC;
- (g) as to capacity of PUC to make the payments to Project Co required by the Project Agreement.

[NTD: To be updated.]

(c)

(d)

30. Project Co Events of Default/PUC Remedies and Termination Rights:

The Project Co events of default under the Project Agreement shall be limited to the following (each, a "**Project Co Event of Default**"):

- (a) the occurrence of a Project Co Material Breach that is not remedied in accordance with the Project Agreement, including in accordance with the program for remediation, or the occurrence of a Project Co Material Breach for which a program for remediation has not been produced by Project Co in accordance with the Project Agreement;
- (b) there is an Insolvency Event in respect of Project Co;
 - Project Co abandons the Project, other than pursuant to its right to suspend performance under the Project Agreement or due to a Supervening Event;
 - Service Commencement does not occur on or before a period of 18 months after the Longstop Date;
- (e) Project Co makes a representation or warranty in the Project Agreement that is false or misleading when made, and that has or will have at any time a material adverse effect on the performance of the Project or the Services and in the case of a false or misleading representation or warranty that is capable of being remedied, Project Co has not remedied such breach within 30 business days following notice from PUC.

Each Project Co Event of Default will be subject to appropriate cure periods and specified remedies (including liquidated damages, termination rights, etc.).

31. PUC Events of Default/Project Co Remedies and Termination The PUC events of default under the Project Agreement shall be customary for a project of this type and shall include, without limitation, the following (each a "**PUC Event of Default**"):

(a) a failure by PUC to pay any amount due and owing to

Rights:		Project Co under the Project Agreement on the due date (which amount is not being disputed in good faith) and PUC has not remedied such failure to pay within two days of notice from Project Co;
	(b)	except as provided for in Section 31(a), a breach, or series of breaches, by PUC of any term, covenant or undertaking to Project Co, or any representation or warranty made by PUC to Project Co in the Project Agreement is incorrect when made, the consequence of which:
		 (i) has a material adverse effect on the performance of the UDM Design, Construction, Provisioning, System Expansion or Services; or
		 (ii) results in any provision of the Project Agreement being unenforceable against PUC,
		and as a result thereof Project Co is reasonably likely to be materially deprived of the benefit of the Project Agreement;
	(c)	if any material part of the UDM System, or any interest in PUC is expropriated by any Governmental Authority and as result thereof Project Co is reasonably likely to be materially deprived of the benefit of this Agreement;
	(d)	if PUC ceases to be the licensed distributor of electricity in the City of Sault Ste. Marie, Ontario; or
	(e)	there is an Insolvency Event in respect of PUC.
	Each PUC periods and rights, etc.)	Event of Default will be subject to appropriate cure d remedies (including liquidated damages, termination).
32. Termination Payment:	The Project reason, PL a schedule be calculat unamortize redeployme the loss of	t Agreement will provide that upon a termination, for any IC shall pay Project Co a termination amount set forth in to the Project Agreement. The termination amount will ed at closing to cover at any particular time, the ed cost of the UDM System, breakage costs for financing, ent costs charged by contractors and compensation for the equity return to Project Co for the Project.
33. Mitigation:	In all cases compensat party will us to be paid l	where one party is entitled to receive from the other any tion, costs or damages, but not in any other case, that se all reasonable efforts to mitigate such amount required by that party to the other under the Project Agreement.
34. Dispute Resolution	The Projec procedure determinat	t Agreement will contain a staged dispute resolution involving amicable resolution by senior officers, expert ions and arbitration, pursuant to the Dispute Resolution

	Procedure:	Procedure.	
35.	Assignment/ Change of Control:	(a)	Project Co will not assign, transfer or otherwise dispose of any interest in the Project Agreement except:
			 (i) as security for any <i>bona fide</i> loan made to Project Co;
			 (ii) in connection with the exercise of rights of lenders to Project Co; or
			(iii) with the written consent of PUC, which will not be unreasonably withheld or delayed.
		(b)	No change in control of Project Co will be permitted (whether by Project Co or otherwise) to occur except:
			 (i) in connection with the exercise of rights of lenders to Project Co;
			 (ii) arising from any <i>bona fide</i> open market transaction in any shares or other securities of an owner of Project Co effected on a recognized public stock exchange;
			(iii) where the change in control would not reasonably be expected to have a material adverse effect on the ability of Project Co to carry out its obligations under the Project Agreement; or
		\mathbf{N}	(iv) with the written consent of PUC, which will not be unreasonably withheld or delayed.
	0	(C)	PUC will not assign, transfer or otherwise dispose of any interest in the Project Agreement without the prior written consent of Project Co, which consent will not be unreasonably withheld or delayed, provided that such assignee is the Ontario Energy Board licensed distributor for the City of Sault Ste. Marie and coincident with such transfer such assignee acquires all of the assets of PUC.
		(d)	No change in control of PUC will be permitted to occur except with the prior written consent of Project Co.
36.	Conditions Precedent:	The entering the following	g into of the transaction described herein is subject to g conditions precedent:

(a) the approval of this Term Sheet by the board of directors of PUC;

	(b)	the approval of this Term Sheet by the board of directors of the General Partner of Project Co, and Energizing;
	(c)	[an amendment to the PUC rate order from the OEB to provide for the approval of the Project Agreement and for a monthly payment per customer, if such rate increase is necessary to provide for the payments to Project Co pursuant to the Project Agreement];
	(d)	guarantee by the Corporation of the City of Sault Ste. Marie of the obligations of PUC under the Project Agreement;
	(e)	negotiation and execution of definitive documents; and
	(f)	such other conditions as the parties may agree.
37. Effective Date:	Means the the Service	date on which the Project Agreement, the EPC Contract, as Agreement and the Interface Agreement are signed.
38. Governing Law:	Ontario	
EPC Contract:		
39. Parties:	Project Co	and the EPC Contractor
40. General:	On the Effe into the EP The EPC C Agreement	ctive Date, Project Co and the EPC Contractor will enter C Contract prepared on the basis of this Term Sheet. ontract will set out in full all provisions of the Project relevant to the EPC Contractor obligations.
41. Project Schedule:	The followir key milesto	ng is an outline of the construction program (subject to nes, all dates to be agreed):
\mathcal{C}	(a)	the EPC Contractor will prepare and submit the Project schedule and updates thereto with respect to the UDM Design and Construction in accordance with the Project Agreement;
	(b)	the EPC Contractor will undertake the UDM Design development process in accordance with the Project Agreement;
	(c)	Commencement of Construction: a date specified in the Project Agreement; and
	(d)	Target Service Commencement Date: a date specified in the Project Agreement.
42 . Term:	The term of Project Agr	the EPC Contract will commence on execution of the ement and will continue until all of the EPC Contractor's

obligations under the EPC Contract have been fully discharged.

- 43. EPC Contractor Obligations and Scope of Work:
 The EPC Contractor shall carry out the UDM Design and Construction with the key principle that the EPC Contractor's obligations and risks under the EPC Contract is a full pass-through to the EPC Contractor of all of Project Co's obligations and risks under the Project Agreement in respect of the UDM Design and Construction of the Project.
- **44. Guarantee:** EPC Guarantor will provide Project Co with its guarantee of the timely performance by EPC Contractor of all of its obligations under the EPC Contract. EPC Guarantor will be a creditworthy entity, either a parent or other significant member of the EPC Contractor's corporate group.
- **45. Security:** In addition to the guarantee of the EPC Contractor, the EPC Contractor will provide Project Co with liquid security in the amount of ●% of the contract price/performance bond in the amount of ●% of the contract price.

Services Agreement:

- **46. Parties:** Project Co and the Services Provider.
- **47. General:** On the Effective Date, Project Co and the Services Provider will enter into the Services Agreement prepared on the basis of this Term Sheet. The Services Agreement will set out in full all provisions of the Project Agreement relevant to the Services Provider obligations.
- **48. Term:** The term of the Services Agreement will commence on the Service Commencement Date and will continue until the later of: (i) the Expiry Date or (ii) the date upon which all of the Services Provider obligations have been fully discharged.
- 49. Services Provider Obligations and Scope of Work:
 The Services Provider shall carry out its obligations under the Services Agreement with the key principle that the Services Provider's obligations and risks under the Services Agreement is a full pass through to the Services Provider of all of Project Co's obligations and risks under the Project Agreement in respect of Provisioning, System Expansion and the Services.
- **50. Guarantee:** Services Guarantor will provide Project Co with its Guarantee of the timely performance by Services Provider of all of its obligations under the Services Agreement. Services Guarantor will be a creditworthy entity, either a parent or other significant member of the Services Provider's corporate group
- **51. Security:** In addition to the guarantee by the Services Guarantor, the Services Provider will provide Project Co with liquid security in the amount of two years' fees under the Services Agreement.

Interface Agreement:

52. Parties:	EPC Contr	actors, Services Provider and Project Co.
53. General:	On the Effective Date, EPC Contractor and Services Provider will enter into the Interface Agreement prepared on the basis of this Term Sheet. The Interface Agreement will set out in full the relationship between the EPC Contractor and the Services Provider including, without limitation:	
	(a)	obligations of the EPC Contractor in connection with warranty matters relating to the UDM System;
	(b)	obligations of the EPC Contractor with respect to system performance;
	(C)	obligations of the EPC Contractor in connection with supply and installation of life-cycle changeouts;
	(d)	design review procedures between the EPC Contractor and the Services Provider;
	(e)	statements of requirements, including specific cooperation requirements that the EPC Contractor and Services Provider have of each other or Project Co;
	(f)	indemnification obligations;
	(g)	reallocation of deductions or charges; and
	(h)	procedures for management of claims.
54. Term:	The term o Commence Date; or (ii) fully discha	f the Interface Agreement will commence on the Service ement Date and will continue until the later of (i) the Expiry the date all of the EPC Contractor obligations have been arged.
G	-	

By signing where indicated below, the parties have agreed that this Term Sheet accurately reflects our discussions to date.

Acknowledged and agreed to this • day of •, 2015.

PUC DISTRIBUTION INC.

By: Name: Title:		
By: Name: Title:		
ENERG	GIZING, LLC	
By: Name:		
By: Name:		

SCHEDULE A

DEFINITIONS

"**Certificate of Service Commencement**" means a certificate of the Independent Certifier certifying that Project Co has constructed and commissioned the specified components of the UDM System necessary to meet Service Commencement and it meets the performance standards for commissioning set out in the Project Agreement for such components.

"**Change**" means a change or variation in the UDM Design and Construction Specifications, the Operating and Maintenance Specifications or other changes required by PUC and for which PUC will compensate Project Co, subject to an agreed procedure for pricing, all as set out in the Project Agreement.

"**Commissioning Plan**" means a plan which describes how the UDM System will be evaluated and placed in operation on the Service Commencement Date.

"Compensation Event" means certain Relief Events for which Project Co is entitled to compensation or other payment by PUC [generally delay events for which PUC is responsible].

"Construction" means everything (other than UDM Design) required to achieve Service Commencement, including the construction of the UDM System (including the completion of certain sub-station upgrades and new and rebuilt sub-stations), temporary works and the procurement and supply of all labour and materials, construction equipment, management, supervision and support of any kind or nature whatsoever required for the construction of the UDM System and the supply, installation, inspection, testing and commissioning of all equipment forming part of the UDM System.

"**Consumer Price Index**" means the Consumer Price Index for Canada, all items, not seasonally adjusted (base year 2002), prepared by Statistics Canada as currently reported in Table 5 of The Consumer Price Index (Catalogue no. 62-001-X) published by Statistics Canada or any successor or comparable replacement index of Statistics Canada and, if there is no such index, a comparable price index or measure determined by Project Co, acting reasonably.

"**Design**" means everything required for the design of the UDM System (including the completion of certain sub-station upgrades and new and rebuilt sub-stations) except for any design element that is expressly excluded from Project Co's responsibility under the Project Agreement.

"**Design and Construction Specifications**" means those specifications, requirements and standards attached to the Project Agreement relating to Design and Construction, and shall include Good Utility Practice.

"**Direct Losses**" means in respect of a condition, event or omission, without duplication, all damages, losses, liabilities, penalties, fines, assessments, claims (including by third parties), actions, costs (including increased capital expenditures), expenses (including the reasonable cost of legal or professional services), proceedings, demands and charges, whether arising

under statute, contract or at common law, which result directly from such condition, event or omission:

- (a) net of related insurance proceeds and insurance receivables and any amount which the relevant party would have recovered (in respect of such condition, event or omission) if it had complied with the requirements of the Project Agreement or any policy of insurance maintained or required to be maintained under the Project Agreement;
- (b) excluding any Indirect Losses, except to the extent included in a third party claim; and
- (c) in the case of Project Co, without limiting the foregoing:
 - (1) including the full amount of the related loss or reduction of any Service payments; and
 - (2) net of avoidable costs related to such condition, event or omission,

and in calculating any amount of any additional capital expenditure, labour or similar cost claimed by Project Co under this definition of "Direct Losses", Project Co will be entitled to add to such amounts an appropriate mark-up.

"**Dispute Resolution Procedure**" means the procedure described as such in the Project Agreement.

"Eligible Change in Law Event" means certain events which oblige Project Co to expend money to comply with Law and for which Project Co may claim compensation from PUC.

"Environmental Laws" mean all Laws relating to the protection of human health and all plant, animal, land, water and air resources that may be affected by the Project.

"Excusing Event" means certain events that arise which excuse Project Co from performing certain work and for which the failure of performance will not result in penalties or deductions.

"Force Majeure Event" means certain events which relieve Project Co from liability for performance under the Project Agreement.

"Good Utility Practice" means using standards, practices, methods and procedures to a good commercial standard, conforming to Law and exercising that degree of skill and care, diligence, prudence and foresight which would reasonably and ordinarily be expected from a qualified, skilled and experienced person engaged in a similar type of undertaking under the same or similar circumstances. Good Utility Practices are not intended to be limited to the optimum practices, methods or acts to the exclusion of all others, but rather are intended to delineate practices, methods or acts generally accepted in the industry in Canada.

"Governmental Authority" means any federal, provincial, territorial, regional, municipal or local governmental authority, quasi-governmental authority, Court, government or self-regulatory organization, commission, board, tribunal, organization, or any regulatory, administrative or other agency, or any political or other subdivision, department or branch of any of the foregoing,

having jurisdiction in any way over or in respect of any aspect of the performance of the Project Agreement or the Project.

"Hazardous Substance" means any hazardous waste, hazardous product, contaminant, toxic substance, deleterious substance, dangerous good, pollutant, waste, reportable substance, and any other substance, in respect of which the storage, manufacture, handling, disposal, treatment, generation, use, transport, remediation or release into or presence in the environment is prohibited, controlled or regulated under Environmental Laws.

"**Independent Certifier**" means the person or firm to be identified as such in the Project Agreement.

"**Index Linked**", with respect to an amount at any time, means that the amount is adjusted as at each January 1st commencing as of the January 1st following the Effective Date by:

- (d) multiplying it by the Consumer Price Index as at the immediately preceding January 1st; and
- (e) dividing it by the Consumer Price Index as at the base date.

"Indirect Losses" means any loss of revenue, loss of profits, loss of use, loss of contract, loss of goodwill, loss of production, loss of business, loss of business opportunity or any exemplary, punitive or special damages or any consequential or indirect loss or damages of any nature claimed, suffered or allegedly suffered by:

- Project Co or any Project Co Person (other than a Person who is a Project Co Person solely by virtue of being an invitee of Project Co or any Project Co Person); or
- (g) PUC or any PUC Person (other than a Person who is a PUC Person solely by virtue of being an invitee of PUC or any of PUC Persons).

"Insolvency Event" means:

- (h) the subject party admits in writing its inability to pay its debts generally as they become due;
- (i) the subject party makes a general assignment for the benefit of its creditors;
- (j) the subject party issues a proposal under the *Bankruptcy and Insolvency Act* (Canada) or a notice of intention to make such a proposal;
- (k) the subject Party proposes a compromise, arrangement or reorganization under the *Companies Creditors Arrangement Act* (Canada) or any other legislation of any jurisdiction providing for the reorganization or winding up of corporations or business entities or providing for an arrangement, composition, extension or adjustment with its creditors or shall voluntarily suspend transaction of its business, or shall take corporate action in furtherance of any of the foregoing purposes.
- (I) the subject party is declared or adjudged bankrupt; or

(m) a receiving order is made against the subject party or a liquidator, trustee in bankruptcy, receiver, receiver and manager or any other officer with similar powers is appointed in respect of such person.

"Laws" means all laws (including the common law), statutes, regulations, treaties, judgments and decrees and all official directives, by-laws, rules, consents, approvals, authorizations, guidelines, orders and policies of any Governmental Authority having the force of law from time to time, including, for greater certainty, those related to the issuance of Permits, and any building codes and all Environmental Laws.

"Longstop Date" means a date [one year] after the Target Service Commencement Date.

"**Operating and Maintenance Specifications**" means those specifications, requirements and standards attached to the Project Agreement relating to the Provisioning, System Expansion or Services, and shall include Good Utility Practices.

"**Permits**" means all permissions, consents, approvals, certificates, permits, licences, statutory agreements, zoning and by-law amendments and variances, and authorizations required from any Governmental Authority, and all necessary consents and agreements from any third parties, needed to carry out the Project in accordance with the Project Agreement.

"**Project Co Material Breach**" means certain breaches of the Project Agreement which entitle PUC to terminate after notice and an opportunity for Project Co to cure such breach. These breaches will be listed in the Project Agreement.

"**Project Contractor**" means the EPC Contractor or the Services Provider and "**Project Contractors**" means any two or more of them.

"**Project Contracts**" means the EPC Contract, the Services Agreement and the Interface Agreement.

"Project Co Person" means:

- (n) any director, officer, employee or agent of Project Co in each case acting as such;
- (o) any Project Contractor, any Sub-Contractor and any representative, advisor (including any legal and financial advisor) or contractor of Project Co, in any such Person's capacity as a provider of services, work or materials, directly or indirectly to Project Co in connection with the Project; or
- (p) any invitee of Project Co or any of the Project Co Persons referred to in (a) or (b) above who enters upon the PUC lands.

"**Provisioning**" means increasing the capacity of the UDM System, but for clarity does not include System Expansion.

"PUC Person" means:

(q) any director, officer, employee or agent of PUC in each case acting as such;

- (r) any representative, advisor (including any legal and financial advisor) or contractor of PUC; or
- (s) any invitee of PUC or any of the PUC Persons referred to in (a) or (b) above who enters upon the PUC lands.

"**Relief Event**" means certain events which relieve Project Co from liability for performance and increase the time available for performance **[generally delays caused by third parties]**.

"Service Commencement" means that all of the following have been achieved in relation to the UDM System:

- (t) the Independent Certifier has issued a Certificate of Service Commencement with respect to the UDM System; and
- (u) all necessary Permits have been issued for the use and operation of the UDM System.

"Service Commencement Date" means the date upon which the specified components of the UDM System listed below have been installed, inspected and have achieved commercial operation, as more particularly described in the Project Agreement. The specified components are \bullet , \bullet , \bullet , and \bullet .

"Services" means everything other than UDM Design, Construction, Provisioning and System Expansion that Project Co is required to do to satisfy its obligations under the Project Agreement.

"Services Provider Party" means:

- (v) any director, officer, employee or agent of the Services Provider or of any subcontractor of the Services Provider of any tier, in each case acting as such;
- (w) any subcontractor of the Services Provider of any tier and any representative, advisor (including any legal and financial advisor) or contractor of the Services Provider or of any subcontractor of the Services Provider of any tier; or
- (x) any invitee of the Services Provider or any of the Services Provider Parties referred to in (a) or (b) above who enters upon the Lands.

"**Sub-Contract**" means any contract entered into by a Project Contractor (except Project Contracts), or a sub-contractor of a Project Contractor of any tier, with one or more Persons in connection with the carrying out of Project Co's obligations under the Project Agreement, as amended or replaced from time to time.

"Sub-Contractor" means any Person that enters into a Sub-Contract.

"Supervening Event" means any of a Compensation Event, Relief Event, Excusing Event, Force Majeure Event or Eligible Change in Law Event.

"System Expansion" means an expansion of the UDM System infrastructure, but for clarity does not include Provisioning.

"Target Service Commencement Date" means the date specified as such in the Project Agreement, as such date may be extended by the operation of any Relief Event, Force Majeure Event, Eligible Change in Law Event or Change.

"**UDM Design**" means the design for the UDM System prepared by the Project Co in accordance with the terms of the Project Agreement.

SCHEDULE B

UDM System Design and Construction Specifications

(y) Volt/VAR Management (VVM) scope includes designing, procuring, installing and commissioning a Volt/VAR control scheme on PUC's 12.5 kV distribution system. The proposed system will be installed at 8 substations. The scope in these substations include four substation rebuilds at Subs 11, 16, 20 and 1 with 10/13 MVA LTC transformers; six 10/13 MVA LTC transformer replacements at Sub 2, 18 and 19; and two busbar regulator installations at Sub 13.

Feeder improvement scope includes installing 200kVAR/phase fixed cap banks on feeders 16-03 and 16-04, and installing 167kVA/phase regulators on feeders 18-01 and 18-04. In addition, 17 re-phasing of feeder segments are recommended for PUC to implement.

A centralized model-based VVM software will be installed at the PUC Control Room. The interfaces with AMI and GIS will be built so that VVM system can exchange data with these systems.

Each field device will be installed with a controller to enable data exchange. A SpeedNet 900 MHz communication system will be deployed to provide communication between field devices and the central software system. Field integration of all equipment will be accomplished. LTC controller and regulator settings will be determined and applied to the associated equipment. SCADA points list will be developed and data acquisition system of these points will be established.

(z) **Distribution Automation (DA)** extended scenario scope (as described below) includes designing, procuring, installing and commissioning a distribution automation system that will improve reliability on PUC's 12.5 and 34.5 kV distribution and sub-transmission systems.

In the extended scope, centralized control software, Fault Location Isolation Restoration (FLIR) will be installed at the PUC Control Room. The interfaces with AMI and GIS will be built so that DA system can acquire data from these systems. The DA system includes automating 40 feeders as listed in the table.

In this scenario, 38 reclosers, 40 load-break switches, 4 4-way pad-mount switches, 4 2- way pad-mount switches 32 3-phase overhead fault current indicator sets and 37 3-phase underground fault current indicator sets will be deployed to the system.

Each field device will be installed with a controller to enable data exchange. A SpeedNet 900 MHz communication system will be deployed to provide communication between field devices and the central software system. Field integration of all equipment will be accomplished. Controllers and protective relays settings will be determined and applied to the associated equipment. SCADA points list will be developed and data acquisition system of these points will be established.

(aa) Advanced Metering Infrastructure (AMI) integrations will leverage AMI data from existing systems into operational, engineering, and customer service domains in order to track outages, monitor and manage voltage, improve customer and internal

key-performance indicators, and allow for more accurate problem identification, isolation and response.

The AMI aspect of the UDM project is made up of the following:

- Outage Management System
- Enhanced CSR/Customer Toolset
- Improved Voltage Measurement Granularity

(bb) Data Analytics and Performance Reporting

(i) Outage Management System ("OMS")

The OMS will include:

- A robust off-the-shelf platform including advanced Interactive Voice Response ("IVR") technology for enhanced communications of outages to customers;
- The integration of the platform to SCADA, AMI, and CIS in order to measure, track and relay outage information to customers in real-time as well as track outage metrics historically; and
- The implementation of a platform at the PUC, with SCADA, AMI, and CIS, in order to measure and track outage information in real-time and historically.
- (ii) Enhanced CSR/Customer Toolset

Enhancing CSR will optimize the organization and presentation of AMI data in a CSR as well as more customer friendly UI such that better answers can be given on a wider set of questions with defensible data (Specifically reliability and cost/usage trends, but also quality and CRUD).

(iii) Improved Voltage Measurement Granularity

The project will modify the Sensus AMI system to more frequently call-in supervisory messages with Voltage min/avg./max and integrate data to CVR platform.

(iv) Data Analytics and Performance Reporting

SCADA, AMI, CIS, OMS, and GIS data will be loaded into a common platform in order to provide system analytics and key performance indicator reporting.

(cc) Substation Options

There are two options under consideration with respect to the Substation component of the UDM System:

(i) Substations [Base Case]

Sections 2A through 2D provide a description of the scope of services to be performed at each substation in the **base substations case**, including the technical assumptions.

A. Substation 2

Substation 2 is planned to have two (2) 34.5/12.47 kV, 10/13.3 MVA LTC transformer banks installed to replace the existing transformer units. Each bank will be located between the existing high- and low-side switchgear. All high-side bank connections will be replaced with new 38 kV enclosed bus duct. New low-side connections from the transformer bank will consist of new 4-1C 15 kV, 1000 kcmil XLPE copper conductor. This conductor will connect from the new low-side transformer bushings to the main bus of the existing 12.47 kV switchgear. These connections will require new connectors, conduit, and associated minor materials, including phase bus duct. New transformer installations also require the installation of new foundations with oil containment to meet NESC and PUC standards. Oil containment will be comprised of a concrete containment area consisting of an oil mat, geotextile layers, and fire quenching stone per PUC Ontario standard.

B. Substation 11

Substation 11 will be replaced with a new substation contained within a building consisting of two (2) 34.5/12.47 kV, 10/13.3 MVA transformer banks with load tap changers (LTC); new 34.5 kV switchgear; and new 12.47 kV switchgear and control building with a basement for cable routing. The existing switchgear, transformers, foundations, and duct banks will be removed to the property boundary of the substation. There will be two 34.5 kV underground sub-transmission feeders and four 12.47 kV feeders. New duct banks, with spare conduits, are assumed from the substation boundary to the riser poles for the 34.5 kV and 12.47 kV underground feeder get-a-ways. A new control building, similar size to the one installed at Substation 10, will be constructed in place of the existing substation.

New 34.5/12.47 kV, 10/13.3 MVA transformer banks will be installed on foundations within enclosed walls on the back side of the control building. New 12.47 kV and 34.5 kV switchgear and equipment will be installed inside the new control building. The 34.5 kV switchgear will be split up into two three-way switched units to provide safe working clearances as noted by PUC employees based on the Substation 10 configuration. A new ground grid, duct banks, and cable get-a-way risers will be installed to connect 34.5 kV and 12.47 kV lines and feeders to the new substation.

Underground power cables will be pulled and terminated between the new switchgear and associated 34.5 kV lines and 12.47 kV feeders with 3-1/C 500 kcmil XLPE copper conductor and 3-1/C 350 kcmil XLPE copper conductor respectively. New underground connections between the high-side transformer bushings and the 34.5 kV switchgear will consist of 3-1/C 500 kcmil XLPE copper conductor. New connections between the low-side transformer bushings and the 12.47 kV switchgear will consist of 4-1/C 1000 kcmil XLPE copper conductor. New SCADA, Controls, and Communication equipment will be installed in relay

cabinets inside the new control house. Protective schemes can be found on the single- line diagram and will be identical to those installed for Substation 10.

C. Substation 13

Substation 13 will have two bus-bar station class pad-mount voltage regulators installed on the low side of the transformers between the transformer and the 12.47 kV switchgear. The existing bus connections will need modification to install three (3) 483 A, 667 kVA single-phase padmounted regulators for each 12.47 kV bus. These regulators will be specified to include the optional by-pass switch module to isolate the regulators under maintenance and test conditions. This install will require direct series connection from low side of the transformer bushings to the regulator with new conduits between the transformer and the padmount transformers (2 conduits for each voltage regulator). The bus will then travel from the regulator to the low main breaker for each section of the 12.47 kV switchgear. New conduit runs and 4-1C 15 kV 1000 kcmil XLPE copper conductor will be needed to complete these new connections. The new regulator installations will be installed on new concrete foundations outside the exterior wall of the substation building.

D. Substation 16

Substation 16 will be replaced with a new substation contained in a building consisting of two (2) 34.5/12.47 kV, 10/13.3 MVA transformer banks with load tap changers (LTC), new 34.5 kV switchgear, and new 12.47 kV switchgear and control building with a basement for cable routing. The existing switchgear, transformers, foundations, and duct banks will be removed to the property boundary of the substation. There will be one 34.5 kV underground sub-transmission feeders, with spare conduits for a future 34.5 kV feeder, and four 12.47 kV feeders. New duct banks, with spare conduits, are assumed from the substation boundary to the riser poles for the 34.5 kV and 12.47 kV underground feeder get-a-ways. A new control building, similar size to the one installed at Substation 10, will be constructed in place of the existing substation.

New 34.5/12.47 kV, 10/13.3 MVA transformer banks will be installed on foundations within enclosed walls on the back side of the control building. New 12.47 kV and 34.5 kV switch gear and equipment will be installed inside the new control building. The 34.5 kV switchgear will be split up into two three-way switched units to provide safe working clearances as noted by PUC employees based on the Substation 10 configuration. A new ground grid, duct banks, and cable get-a-way risers will be installed to connect 34.5 kV and 12.47 kV lines and feeders to the new substation.

Underground power cables will be pulled and terminated between the new switchgear and associated 34.5 kV line and 12.47 kV feeders with 3-1/C 500 kcmil XLPE copper conductor and 3-1/C 350 kcmil XLPE copper conductor respectively. New underground connections between the high-side transformer bushings and the 34.5 kV switchgear will consist of 3-1/C 500 kcmil XLPE copper conductor. New connections between the low-side transformer bushings and the 12.47 kV switch gear will consist of 4-1/C 1000 kcmil XLPE copper conductor. New SCADA, Controls, and Communication equipment will be installed in relay

cabinets inside the new control house. Protective schemes can be found on the single- line diagram and will be identical to those installed for Substation 10.

(ii) Substations [Extended Case]

In the extended case, all of the work in the Base Case will be completed and in addition the following work will be done:

Substation 18 – LTC upgrades only Substation 19 – LTC upgrades only Substation 1 - Rebuild similar to Substation 10 design Substation 15 - Rebuild similar to Substation 10 design

SCHEDULE C

Monthly Payment

SCHEDULE D

Performance Standards and Liquidated Damages

Volt Var Management ("VVM")

The VVM system is intended to ensure that End-of-Line ("**EOL**") meter voltage stays within an average of-average daily voltage reading range of 110V -115V as calculated below.

- 1- For each feeder, a set of bellwether EOL meters will be identified and hourly interval data collected from those meters. The interval data, including root mean square ("rms") voltage measurements, will be sent to the Meter Data Management System (the "MDMS"). Collected interval data shall include:
 - V_{min} = Minimum rms voltage value in the one hour interval
 - V_{max} = Maximum rms voltage value in the one hour interval
 - V_{avg} = Average rms voltage value in the one hour interval
- 2- The VVM central control software will receive periodic network topology updates from PUC's Geographic Information System (the "GIS") system and collect the meter interval data from the MDMS. Using this data, the VVM software will run a solution optimization algorithm using the meter interval data as it's received to determine appropriate settings for each VVM system controller, including LTC controllers, capacitor bank controllers and voltage regulator controllers. The UDM System will be designed so that if there is a voltage violation identified in the meter interval data (i.e. a low voltage indication from one or more of the bellwether meter measurements), the VVM software will take corrective action by changing the local controller settings.
- 3- The system controllers will receive updated settings from the central control software and adjust local controller settings based on the new information.
- 4- The UDM Design will establish the following:
 - a. Number of Voltage Control Zones ("VCZ") Nvcz
 - b. Number of EOL meters per Voltage Control Zone Neol

- 5- The Performance Monitoring Application, as part of the UDM System, will conduct the following:
 - a. Per day:
 - i. Per VCZ:
 - Get the average daily voltage per meter from the Supervisory Control and Data Acquisition ("SCADA") data historian or MDMS, Veol_i
 - 2. Calculate the average of average daily voltage readings for VCZ k,





Distribution Automation ("DA"):

The DA system is designed to identify the fault location, isolate the fault, and restore service to all the un-faulted zones following the fault inception and thereby improve reliability and efficiency through automation of the distribution system as described below.

- 1- The DA system will receive periodic network topology updates from PUC's Geographical Information System and collect status (open, close, etc.) and analog (Volts, Amps, kW, etc.) data from reclosers, switches and Fault Current Indicators ("FCIs") in real-time.
- 2- The UDM System will be designed so that when there is a fault, the DA software will use this data to locate and isolate the fault, and then restore service to unfaulted zones.
- 3- With the fault location identified and isolated the distribution grid reconfigured to re-energize unfaulted zones, PUC field crews will repair the fault. After repairs are complete, the initial faulted zone will be energized and the grid returned to its original configuration through switching operations.
- 4- The DA system will record the time that the recloser is locked out and the time when power is restored to customers in the un-faulted zones. All switching operations will be logged by the DA software. Post-event analysis of this data can identify the time taken to re-energize customers in both faulted and un-faulted zones, and determine whether the DA system restored customers in un-faulted zones within the expected timeframe.
- 5- The UDM Design will establish the following:
 - a. Number of zones on a DA feeder, Zt.
- 6- The Performance Monitoring Application for DA (Automatic Mode of operation) as part of the UDM Design will conduct the following:

a. Per an outage event (event-i):

i. Get the time stamps for recloser lockout, and restoration of faulted and unfaulted zones from the Survalent system log reports.

 $(t_lout)_i$; $(t_restf)_i$; $(t_rest_j)_i$

ii. Determine the number of unfaulted zones not restored within 5 minutes of fault inception.

(Z_nr)_i

b. Per year

Calculate the total number of unfaulted zones that are not restored within 5 minutes of fault inception by DA system across all outage events (n) within the year:



7- The Performance Monitoring Application for DA (Semi-Automatic mode of operation) as part of the UDM Design will conduct the following:

a. Per an outage event (event-i):

i. Get the time stamps for recloser lockout, and fault location from the Survalent system log reports.

(t_lout);; (t_f);

ii. Calculate the time taken (in whole minutes) by the DA system to locate the fault,

 $(t_fl)_i = (t_f)_i - (t_lout)_i$

iii. Determine whether the fault is located within 5 minutes of the fault inception or not.

If $(t_fl)_i > 5$:

FL_i = 1

Otherwise,

 $FL_i = 0$

- b. Per year
 - i. Calculate the total number of instances where DA system is failed to locate the fault within 5 minutes of the fault inception across all outage events (n) within the year:
 - FL_annual =





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SCHEDULE E

Project Co Plans and Deliverables

Deliverables:

Project Co shall prepare and submit the following documents and deliverables:

Deliverable Name	Due Date
Asset Management Plan	Final: not less than sixty (60) days prior to the scheduled
	date for Service Commencement Date and updated
	annually on the anniversary date of Service
	Commencement Date.
Maintenance Plan and	Included in the Asset Management Plan.
Schedule	
Forced Outage Response Plan	Final: not less than thirty (30) days prior to Services
	Commencement Date and updated annually on the
	anniversary date of Service Commencement Date.
UDM System Condition	Final: not less than two (2) months prior to the scheduled
Assessment Plan	submittal of the Commissioning Test Report.
[4]*-year Condition	Final: due four (4) years after Service Commencement
Assessment Report	Date.
[8]*-year Condition	Final: due eight (8) years after Service Commencement
Assessment Report	Date.
[12]*-year Condition	Final: due twelve (12) years after Service Commencement
Assessment Report	Date.
[Weekly UDM System Activity	[TBD]
Report	
Monthly UDM System	On the seventh workday of the month.
Performance Scorecard	
Annual Asset Management	Final: by October 1 of each year starting one year after
Report	submittal of the final Commissioning Test Report.
Handback Plan	Final: within 60 days of the completion of the 12-year

Deliverable Name	Due Date
	Condition Assessment Report
Handback Report	Final: eight (8) months prior to the Expiry Date
Handback Certificate	On Expiry Date
Work Completion Certificate	Upon completion of work
Return to Service Certificate	Upon completion of work

* subject to actual project term