PUC Distribution Inc.
500 Second Line EAST, P.O. Box 9000
SAULT STE. MARIE, ONTARIO, P6A 4K1

June 19, 2019

Kirsten Walli, Board Secretary
Ontario Energy Board
P.O. Box 2319, 27th Floor
2300 Yonge Street
Toronto, ON, M4P 1E4

Attention: Ms. Walli

Re: PUC Distribution Inc. Interrogatory Response Correction
Board File No. EB-2018-0219

Please see attached corrections of IRR Staff-31 with the inclusion of Appendix 8 - the Smart Grid Overview SSM Council July 9 and CCC-16. PUC Distribution will review the correction at the beginning of the Technical Conference on June 19th, 2019.

Sincerely,

Andrew Belsito

Andrew Belsito, CPA, CMA
Rates and Regulatory Affairs Officer
PUC Distribution Inc.
Sault Ste. Marie Ont.
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PUC Distribution Inc.

EB-2018-0219

Revised Submission

Filed: June 19, 2019

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Reference: EB-2018-0219, ICM Application, Page 14
EB-2018-0219, ICM Application, Appendix I
EB-2018-0219, ICM Application, Appendix D

Preamble:

PUC Distribution states that the SSG Project is being developed through a Special Purpose Vehicle called SSG Inc. and will be initially funded through the North American Grid Modernization Fund (Fund), currently managed by Stonepeak Infrastructure Partners (Stonepeak) and Infrastructure Energy LLC (IE).

Appendix I identifies six entities as part of the organization of the SSG Project.

Question:

(a) Please confirm that Stonepeak and/or IE, a private equity investment firm, contributed the funds that make up the Fund.

(b) Please confirm that Energizing Co (ECo), an energy infrastructure development company based in California, formed IE with Stonepeak and that IE is essentially a project financing platform for ECo's grid modernization projects.

i. What is the role of ECo in the SSG Project? Please explain why it is not included in the organizational structure in Appendix I.
ii. Will PUC Distribution pay ECo monthly payments for the duration of the Project (as referenced in the Navigant Report, Appendix D)? If so, what is the purpose of such payments and what are the amounts of the payments?

(c) Please provide all documents related to the establishment of SSG Inc., including information related to its officers, directors, governance structure as well as all agreements entered into by SSG Inc. with the Fund, Stonepeak, ECo and/or IE.

(d) Please provide all documents related to agreements between PUC Distribution and the Fund, Stonepeak, ECo and/or IE.

(e) Please elaborate on the organizational structure of the Project as noted in Appendix I and how Project funding flows to each company involved.

(f) Please explain why PUC Distribution chose to proceed with the organizational and financing structure as described in part (e). Why is this arrangement preferable to PUC Distribution securing loans and hiring consultants and contractors directly?

(g) Please explain what alternatives, if any, PUC Distribution considered for the development and financing of the SSG Project, in addition to the arrangement with SSG Inc., the Fund, Stonepeak, ECo and/or IE. Please provide details of alternatives considered.

Response:

(a) Stonepeak is no longer involved in the project. The project will be financed through a combination of long-term project finance debt and equity. The equity capital shall consist of (1) institutional investment funds managed by a joint-venture consisting of Diode Ventures LLC (an affiliate of Black & Veatch) and Alma Global Infrastructure LLC and (2) IE as the original developer.

(b) Energizing, LLC (aka 'Energizing Co.' or 'ECo') changed its name to Infrastructure Energy, LLC (IE). It is the same entity.

i. ECo was not included in the organizational structure, as it is the same entity as IE.

ii. No. PUC Distribution will make monthly payments directly to SPV SSG Inc. as will be detailed in the proposed Project Agreement (Appendix 12 & 13) between SSG, Inc. and PUC Distribution.

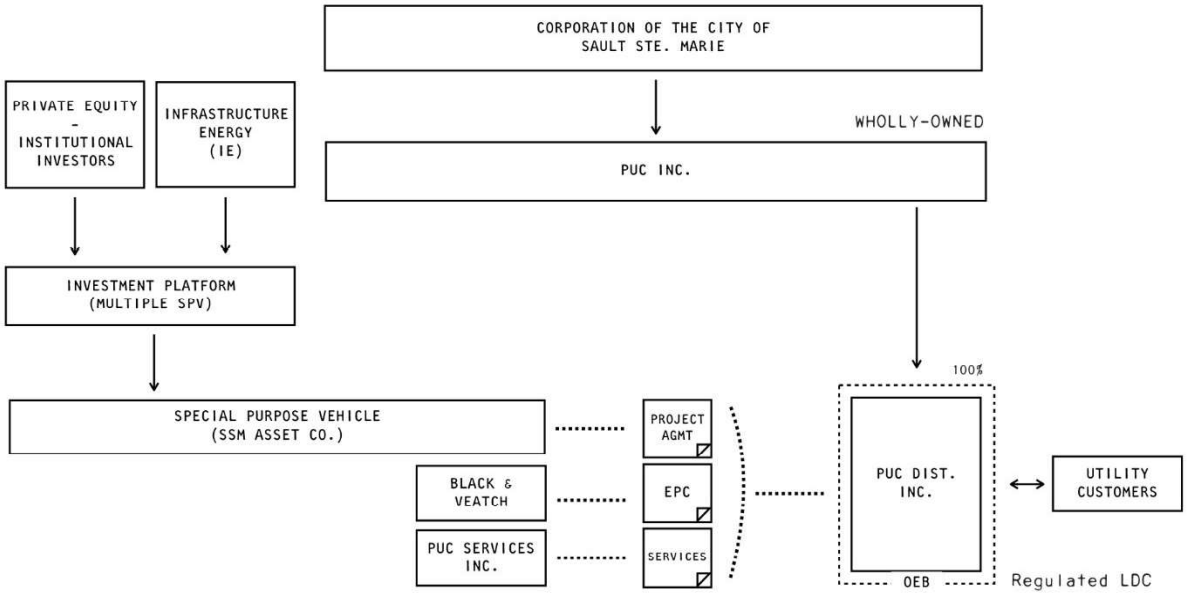
(c) SSG, Inc. has not been formed. It is intended to be a special purpose vehicle (SPV) formed at financial close of the Project, as is customary for projects of this type.

(d) Attached please find documents related to PUC Distribution and Eco/IE including four Letter of Intent related documents and amendments over the project feasibility period. In addition current working draft version of the main Project Agreement & Schedule 1 Definitions which will be between PUC Distribution and Project Co (SSG).

i. LOI PUCD & Eco 2013 (Appendix 9)
ii. ATP Letter 2014 (Appendix 10)
iii. Amendment 2015 (Appendix 11)
iv. Amendment 2016 (Appendix 14)
v. Project Agreement v15 20190419 (Appendix 13)
vi. Schedule 1 20190419 (Appendix 12)

(e) Please see below (i) additional information on the organizational structure of the Project, and (ii) a description of how Project funding flows to each company involved.

CAPITAL FLOWS - SAULT SMART GRID



(i) A description of the organizational role of each company involved in the Project, as follows;

- PUC Distribution, Regulated Local Distribution Company and project proponent,
- Infrastructure Energy, Project development partner,
- Diode Ventures and Alma Global, Project investment partner,
- Black & Veatch, Project engineering, procurement and construction (EPC) partner,
- PUC Services, Project service provider (Services) partner, and
- SSG, Inc., special purpose vehicle (SPV) holding project assets during term of project.

(ii) A description of Project funding flows to each company involved, as follows:

- Infrastructure Energy provided funding for Pre-Feasibility Phase of Project, including finalization of Letter of Intent (2014) and presentation to Corporation of the City of Sault

Ste. Marie City Council for Project Support Resolution (2014) passed unanimously, as well as funding for Pre-Feasibility Study for Sault Smart Grid project (Project). PUC subsequently provided Project Authority to Proceed (2014) based on results of Pre-Feasibility Study.

- Infrastructure Energy provided funding for Governance Approvals and Due Diligence Phase of Project, including PUC Board Sub-Committee Review and Recommendation (2015), Navigant Independent Business Case Review (2015), and Navigant Independent Project Cost Review (2015) [see ICM Appendix D,E].

- Corporation of the City of Sault Ste. Marie provided funding for Navigant Second Business Case Review (Appendix 7) for Corporation of City of Sault Ste. Marie (2016) which was considered in light of their efforts in socio-economic impacts to City and also as shareholder. Final Shareholder Approval Resolution (2018) (Appendix 8) for PUC Distribution to pursue project subject to key conditions.
    - Final Shareholder Approval Resolution (Appendix 8)
    - SSM Navigant Report (Appendix 7)

- All parties funding legal costs of negotiation of Project Agreement (PA), and two drop down contracts, the Design-Build Agreement (DBA) and Services Agreement (SA).

- Following satisfaction of final Conditions Precedent of PUC Board Approval and Shareholder Approval Resolution (Appendix 8), including NRCan approval and execution of Contribution Agreement (CA) (Appendix 1), and OEB regulatory approval, all Project documents are to be executed at Close of Financing (CoF), concurrent with formation of the special purpose vehicle SSG, Inc., and funding of all Project costs into SPV by Diode Ventures and Alma Global, and NRCan contributions through PUC Distribution.

- Project construction commences at CoF, subject to schedule and budget guarantees provided by EPC contractor, Black & Veatch. BV is funded directly by payments from SSG, Inc. during construction.

- Project payments will begin at Initial Operational Capability (IOC) of Project. At Full Operational Capability (FOC) of Project, title for assets of Project will be transferred to PUC Distribution from SPV. Benefits in increased distribution asset efficiency, reliability and resilience will commence in part concurrent with IOC, with full benefits delivered at FOC.

Project payments will continue on a monthly basis throughout the term of the Project, over 25 years. Project payments were negotiated directly by PUC with project development partner Infrastructure Energy to ensure reduction in overall bills for PUC customers.

(f) The organizational and financing structure described in part (e) was selected by PUC over traditional methods of securing loans and hiring consultants and contractors directly. PUC Distribution elected to consider this approach for a number of reasons. One of the significant factors was that the project conceptual approach, significant data analysis, early design engineering and third-party vetting, review and comment was conducted at the cost and risk of the developer Infrastructure Energy (formerly Energizing Co.). PUC Distribution would have been unable to assign available resources (people or budget) to have undertaken the significant level of engineering analysis to scope and justify, including independent consultant review, such a project at the expense level involved. It has allowed PUC Distribution to conceive and propose a community-scale smart grid project integrating a number of smart grid systems that will mutually reinforce each other and offer increasing returns to scale – over a compressed timeline of two years to implementation with mitigated financial and performance risk via risk transfer to project developer, financial and technical partners. PUC Distribution efforts consisted of staff time to support data requests and a lot of review and discussion of engineering analysis and reports to achieve a successful outcome and had no cost risk should the project evaluation result in a "no go" decision by PUC. A key additional factor of the proposed two-year project vs. the traditional approach over a longer time frame is not having all customers paying through rates but delay benefits for some of those customers over that longer period. PUC did not incur external costs until the project achieved a viable status in the sole determination of PUC at which point costs for mostly legal and regulatory support became needed. PUC Distribution analyzed using traditional procurement methodology and found that it would have required a substantially slower smart grid system deployment, increasing risk exposure for budget, schedule and system performance. The selected approach benefits PUC and most importantly customers, by having a complex project developed, constructed and financed on a turnkey and de-risked basis. PUC customers paying for benefits received more closely aligns with costs rather than a longer, slower implementation where all customers are paying but only some receive available benefit.

During the Pre-Feasibility Phase, PUC Distribution and risk-sharing developer partner Infrastructure Energy assessed a number of different SSG technology architectures and financial

arrangements to arrive at the final project architecture and financing strategies. Strategy also includes integrating arrangement of external government financing from Natural Resources Canada (NRCan).

CCC-16

Reference: None

Question:

Please provide a detailed list of PUC Distribution's actual capital expenditures for the period 2009-2019

Response:

Following are the Capital Projects Tables, Appendix 2-A from PUC Distribution's 2013 COS Rate Application EB-2012-0162 and Appendix 2-AA from PUC Distribution's 2018 COS Rate Application EB-2017-0071.

File Number:	EB-2012-0162
Exhibit:	
Tab:	
Schedule:	
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Appendix 2-A
Capital Projects Table

PROJECTS	2007	2008	2009	2010	2011	2012 Bridge Year	2013 Test Year
Reporting Basis	CGAAP	CGAAP	CGAAP	CGAAP	CGAAP	CGAAP	CGAAP
TRANSMISSION							
Reconstruct GLPT Line	209,134						
Transmission station equipment	15,308	325,804					
Sub-Total	224,442	325,804	0	0	0	0	0
RECONSTRUCT MANHOLES							
Reconstruct undersized manholes/vault	73,460					161,164	159,833
Sub-Total	73,460	0	0	0	0	161,164	159,833
ROAD RECONSTRUCTION							
New road reconstruction	12,204						
Sub-Total	12,204	0	0	0	0	0	0
LAND & EASEMENTS							
Easement purchases	1,215	1,071	2,259	10,909	5,539		
Land purchases							
Sub-Total	1,215	1,071	2,259	10,909	5,539	0	0
LINES & SWITCHES							
Misc. Lines and Switches	502,842	772,751	1,270,548				
Sub-Total	502,842	772,751	1,270,548	0	0	0	0
METERS							
Upgrade Wholesale Meters	65,150	81,885		10,495	37,058		
Wholesale Metering Points	81,873	70,635	72,189	137,654	1,282,316		
Meter Installations						322,327	319,666
Sub-Total	147,023	152,520	72,189	148,149	1,319,374	322,327	319,666
INSTALL UNDERGROUND SERVICES							
New Subdivision Underground Distribution	270,694	602,805	268,633	103,321	105,480		
Sub-Total	270,694	602,805	268,633	103,321	105,480	0	0
REPLACE WOOD POLES							
Replace wood poles	366,778	396,043	614,650	904,749	1,165,055	537,212	799,166
Sub-Total	366,778	396,043	614,650	904,749	1,165,055	537,212	799,166
NEW SERVICES							
Install Service - Customer demand	922,868	1,137,668	1,714,670	2,294,967	2,114,198	648,953	643,595
Install Commercial Services							
Extend 35kV to Starwood SSM2 & SSM3					4,028,633		
Sub-Total	922,868	1,137,668	1,714,670	2,294,967	6,142,831	648,953	643,595

VOLTAGE CONVERSION							
Reconstruct Substation 10						2,847,226	
Voltage Conversion Programs							1,763,492
Sub-Total						2,847,226	1,763,492
UPGRADES							
Transporation Corridor	30,003						
Replace porcelain side-post insulators			111,353	110,127	111,111	214,885	213,111
Replace restricted wire			59,808	102,034	132,735	537,212	532,777
Install reclosures and/or FCI's		3,829	58,066	13,876			
Replace failure defective ceramic disconnects						214,885	213,111
Install Substation 15 Transformer				561,776			
Underground Cables Remediation Program						537,212	958,998
Replace distribution switches and padmount gear				220,339	114,915	107,442	106,555
Extend 35 kV to POD Generating Group							
PCB Removal Program						161,164	159,833
Sub-Total	30,003	3,829	229,227	1,008,152	358,761	1,772,800	2,184,385
CONSERVATION							
Demand Side Mangement Program	50,812	2,684					
Sub-Total	50,812	2,684	0	0	0	0	0
RELOCATE POLE LINES							
Relocate pole lines - Hudson Street	7,441						
Sub-Total	7,441	0	0	0	0	0	0
SUBSTATIONS							
Convert to 12 kV - Sub 5	437,969	337,521					
Upgrade Sub Relays	43,007						
Purchase Substation Grounding Devices	9,500		34,382	101,491			
Improvements at Substation 18	62,046	210,046		212,599			
Replace substation switches and breakers				1,543	4,918	139,675	530,000
Replace underground station cables						537,212	319,666
Station Equipment	117,711	82,652	397,223				988,415
Replace SCADA system				46,498	41,856		266,389
Convert to 12 kV in Sub 17			419,712	131,379			
TS1 upgrades and repairs							
Replace 12 kV breakers				71,041	1,838		
Replace cables at Sub 11				160	7,555		
Install transfer-trip at TS1				961	112,430		
Upgrade sub 19 switching				11,103			
Purchase transformer for Sub 13				253,267			
Convert to 12 kV in the Sub 14 area					122,777		
Sub-Total	670,233	630,219	851,317	830,042	291,374	676,887	2,104,470
NEW BUILDINGS							
New Service Centre						23,000,000	
Sub-Total	0	0	0	0	0	23,000,000	0
MISCELLANEOUS CAPITAL WORKS	266,979	216,090	367,238	504,823	178,358		
Adjustment to actual 2012 expenditures as per settlement						-355,398	
Total	3,546,994	4,241,484	5,390,731	5,805,112	9,566,772	29,611,171	7,974,607

File Number:	EB-2017-0071
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Appendix 2-AA
Capital Projects Table

Projects	2013 Board Approved	2013	2014	2015	2016	2017 Bridge Year	2017	2018 Test Year
Reporting Basis	CGAAP	CGAAP	MFRS	MFRS	MFRS	MFRS	MFRS	MFRS
New Services & Subdivisions								
Land Rights (Formally known as Account 1906)			3,411		1,736	1,057	5,268	1,138
Buildings								
Transformer Station Equipment >50 kV		10,633		14,422		5,143		5,541
Distribution Station Equipment <50 kV			41		468	104	524	113
Poles, Towers & Fixtures	799,166	256,877	401,663	184,799	274,915	229,541	95,521	247,298
Overhead Conductors & Devices		64,863	200,363	70,055	101,891	89,737	93,696	96,679
Underground Conduit		114,781	177,913	39,290	37,655	75,874	85,536	81,744
Underground Conductors & Devices		107,784	171,551	209,801	94,176	119,734	142,631	128,997
Line Transformers		238,554	367,159	418,565	279,567	267,636	216,824	288,341
Services (Overhead & Underground)	643,595	810,182	527,136	357,901	347,857	419,376	365,987	451,820
Meters		799	76	10,431	1,376	2,603	15,530	2,805
Sub-Total	**1,442,761**	**1,604,473**	**1,849,313**	**1,305,264**	**1,139,641**	**1,210,805**	**1,021,517**	**1,304,476**
Joint Use								
Poles, Towers & Fixtures		1,132,205	1,010,215	74,737	35,201	86,257	105,436	123,906
Overhead Conductors & Devices		114,063	66,940		28,982	8,042	37,263	11,552
Line Transformers		19,507	10,386	-4,856	8,696	1,292		1,856
Sub-Total	**0**	**1,265,775**	**1,087,540**	**69,881**	**72,879**	**95,590**	**142,699**	**137,313**
Meters								
Transformer Station Equipment >50 kV					529	220		146
Line Transformers					11,410	4,740	12,473	3,157
Services (Overhead & Underground)			561			233		155
Meters	319,666	229,274	139,712	42,513	82,277	205,105	76,378	136,601
Sub-Total	**319,666**	**229,274**	**140,273**	**42,513**	**94,217**	**210,298**	**88,851**	**140,060**
City Projects								
Poles, Towers & Fixtures			41,491	63,781	15,328	19,709	62,878	22,649
Overhead Conductors & Devices			8,524	24,949	11,466	7,344	90,909	8,440
Underground Conduit		12,345	78,700	120,026	86,962	48,705	9,373	55,971
Underground Conductors & Devices		213,579	348,298	379,454	41,381	160,597	2,585	184,556
Line Transformers			10,421	-1,654	-3,118	923		1,061
Services (Overhead & Underground)			10,198		180	1,696		1,949
Sub-Total	**0**	**225,924**	**497,632**	**586,556**	**152,198**	**238,975**	**165,745**	**274,627**
Distribution Overhead Renewal								
Land Rights (Formally known as Account 1906)			3,387			450		483
Distribution Station Equipment <50 kV			224		-96,685	-12,806		-13,752
Poles, Towers & Fixtures		166,342	631,378	644,093	355,614	238,631	409,840	256,256
Overhead Conductors & Devices		84,447	187,156	310,734	210,691	105,284	83,344	113,061
Underground Conduit		46,061	515		850	6,562		7,047
Underground Conductors & Devices			18,303	32,261	15,357	8,752		9,398
Line Transformers		30,758	122,900	40,144	128,906	42,844	60,225	46,008
Services (Overhead & Underground)					1,465	195		209
Meters		13,967				1,854		1,991
System Supervisor Equipment		1,154				153		165
Sub-Total	**0**	**344,730**	**963,864**	**1,027,231**	**616,199**	**391,918**	**553,409**	**420,865**
Distribution Underground Renewal								
Land Rights (Formally known as Account 1906)					4,740	940		
Poles, Towers & Fixtures		106	6,556	2,026	21,084	5,905	1,319	
Overhead Conductors & Devices		923		2,060	226	636	7,594	
Underground Conduit		50,542	17,968	128,515	86,025	56,141		
Underground Conductors & Devices	159,833	14,008	43,641.17	145,481.57	149,431.11	69,928	39,074	
Line Transformers			9,389.49	117,080.24	114,162.51	47,728	607	
Services (Overhead & Underground)		1,726				342		
Sub-Total	**159,833**	**67,304**	**77,555**	**395,164**	**375,669**	**181,621**	**48,594**	**0**
Forced Overhead Renewal								
Poles, Towers & Fixtures		174,753	145,135	107,906	155,818	177,116	265,935	190,818
Overhead Conductors & Devices		70,826	28,380	30,341	42,914	52,339	55,720	56,388
Underground Conduit				46	2,390	740		797
Underground Conductors & Devices				1,075	3,834	1,490		1,605
Line Transformers		40,398	8,804	40,494	72,397	49,192	99,164	52,998
Services (Overhead & Underground)		1,572	3,662			1,588	781	1,711
Meters		12,886	1,300			4,305		4,638
Sub-Total	**0**	**300,434**	**187,280**	**179,862**	**277,353**	**286,770**	**421,600**	**308,955**
Forced Underground Renewal								
Overhead Conductors & Devices					2,011	1,299		1,575
Underground Conductors & Devices					23,637	15,271	92,560	18,509
Line Transformers	958,998			132,840	236,062	238,336	306,023	288,871
Sub-Total	**958,998**	**0**	**0**	**132,840**	**261,710**	**254,906**	**398,583**	**308,955**
Restricted Wire Replacement								
Poles, Towers & Fixtures	532,777	166,908	23,679	130,895	372,010	274,814	400,224	418,175
Overhead Conductors & Devices		195,224	59,650	90,998	371,776	284,386	408,070	432,741
Line Transformers		15,436	12,128	36,009	133,426	78,066	81,726	118,790
Sub-Total	**532,777**	**377,568**	**95,458**	**257,902**	**877,211**	**637,266**	**890,020**	**969,706**

Transformers								
Line Transformers		88,125			59,775			56,024
Sub-Total	**0**	**88,125**	**0**	**0**	**59,775**	**0**	**0**	**56,024**
Substation 16								
Distribution Station Equipment <50 kV		19,871			35,585	73,445	186,746	
Overhead Conductors & Devices		14,420				19,098		
Line Transformers		122,592				162,362		
Sub-Total	**0**	**156,883**	**0**	**0**	**35,585**	**254,906**	**186,746**	**0**
Station Upgrades - Dx								
Transformer Station Equipment >50 kV		49,279				12,288		7,759
Distribution Station Equipment <50 kV	213,111	855,072	358,362	433,146	315,900	489,365	118,749	308,987
Poles, Towers & Fixtures		348	563		850	439		277
Overhead Conductors & Devices	530,000	3,135			50,557	13,389		8,454
Underground Conduit	1,308,081		7,042			1,756		1,109
Services (Overhead & Underground)					51	13		8
System Supervisor Equipment			6,466		9,708	4,033		2,547
Sub-Total	**2,051,192**	**907,833**	**372,433**	**433,146**	**377,066**	**521,283**	**118,749**	**329,140**
Station Upgrades - Tx								
Transformer Station Equipment >50 kV	213,111	387,967	459,406	73,236	71,955		126,406	105,163
Distribution Station Equipment <50 kV		11,738	30,374		21,672			6,758
Poles, Towers & Fixtures		995						105
Overhead Conductors & Devices					202		8,951	21
Sub-Total	**213,111**	**400,700**	**489,779**	**73,236**	**93,829**	**0**	**135,357**	**112,048**
Voltage Conversion								
Distribution Station Equipment <50 kV	2,728,887	935		257,569		86,788	2,998	81,568
Poles, Towers & Fixtures		20,689		646,133	371,099	348,464	282,276	327,507
Overhead Conductors & Devices		30,175	45,055	336,557	457,601	291,882	464,974	274,327
Underground Conduit		526		51,597	163,259	72,311	22,367	67,962
Underground Conductors & Devices		5,787		17,822	5,606	9,809	31,293	9,219
Line Transformers		19,694	681	299,308	149,900	157,654	264,766	148,173
Services (Overhead & Underground)		5,170				1,736	264	1,631
Sub-Total	**2,728,887**	**82,976**	**45,737**	**1,608,986**	**1,147,466**	**968,644**	**1,068,938**	**910,387**
Switch Replacement								
Distribution Station Equipment <50 kV								
Poles, Towers & Fixtures			13,236					
Overhead Conductors & Devices		66,736	105,123.67	99,881.12				
Underground Conductors & Devices	106,555		18.71					
Line Transformers		46,482	4,578.38					
Services (Overhead & Underground)		14,590						
Sub-Total	**106,555**	**127,808**	**122,957**	**99,881**	**0**	**0**	**0**	**0**
Insulator Replacement								
Poles, Towers & Fixtures		291,484	4,489					
Overhead Conductors & Devices		10,491	242,586.42	185,049.10				
Sub-Total	**0**	**301,975**	**247,076**	**185,049**	**0**	**0**	**0**	**0**
New Building								
Buildings		1,861,207	244,854	66,532	82,630		8,109	
Poles, Towers & Fixtures		11						
Sub-Total	**0**	**1,861,219**	**244,854**	**66,532**	**82,630**	**0**	**8,109**	**0**
POD Generation								
Poles, Towers & Fixtures			2,726					
Sub-Total	**0**	**0**	**2,726**	**0**	**0**	**0**	**0**	**0**
34.5 kV Expansion								
Distribution Station Equipment <50 kV			86					
Transformer Station Equipment >50 kV							1,157	
Underground Conductors & Devices			902.05					
Sub-Total	**0**	**0**	**988**	**0**	**0**	**0**	**1,157**	**0**
Substation 19								
Distribution Station Equipment <50 kV			163,164					
Sub-Total	**0**	**0**	**163,164**	**0**	**0**	**0**	**0**	**0**
Energy Storage Project								
Transformer Station Equipment >50 kV			158,518	-12,822	203,252.56	425,000	971,770	
Sub-Total	**0**	**0**	**158,518**	**-12,822**	**203,253**	**425,000**	**971,770**	**0**
PMH Replacement Program								
Distribution Station Equipment <50 kV			16,238					
Poles, Towers & Fixtures			836.63					
Overhead Conductors & Devices		11,064	10,455.85					
Underground Conductors & Devices		1,976						
Line Transformers	159,833		99,485.92	49,302.52	87,999		35,936	
Sub-Total	**159,833**	**13,040**	**127,016**	**49,303**	**87,999**	**0**	**35,936**	**0**
Substation 10								
Distribution Station Equipment <50 kV		2,942,315	674,216	174,344				
Poles, Towers & Fixtures		109,521						
Overhead Conductors & Devices		97,288	5,815.08	236.58				
Underground Conductors & Devices		57,863	6.34					
Line Transformers		35,219						
System Supervisor Equipment		32,153	21,741.08	4,349.42				
Sub-Total	**0**	**3,274,360**	**701,779**	**178,930**	**0**	**0**	**0**	**0**
SCADA								
Transformer Station Equipment >50 kV				25,347			77,560	4,170
Distribution Station Equipment <50 kV	266,389	128,475	970				1,853	21,297
Overhead Conductors & Devices							148	
System Supervisor Equipment		2,498	128,386.27	201.65	33,359		14,852	27,055
Sub-Total	**266,389**	**130,973**	**129,357**	**25,548**	**33,359**	**0**	**94,413**	**52,522**
Miscellaneous		36,153	1,483	5,693	588	0		63,099
Total	**8,940,002**	**11,797,527**	**7,706,781**	**6,710,694**	**5,988,627**	**5,677,982**	**6,352,193**	**5,388,176**

Sault Smart Grid

SSM City Council, July 9, 2018

Smart Grid & Regulation

- 1998 Electricity Act – some regulatory definition provided
- OEB Regulatory understanding & oversight developing
- 2009 - Green Energy & Green Economy Act
- Mar 25, 2010 – OEB Filing Requirements: Distribution Plans – Filing under Deemed Conditions of Licence
- Nov 23, 2010 – Min. of Energy Order in Council to OEB - …steps in relation to the establishment, implementation and promotion of a smart grid.
  - (objectives from Electricity Act +objectives from Green Energy Act)

What is a Smart Grid?

- Sault Smart Grid has two main components:
  - Voltage Optimization (VVO)
    - Controls the voltage to increase efficiency and lower power consumption
    - https://www.youtube.com/watch?v=7uco3UuHbVk
  - Distribution Automation (DA)
    - Self-healing grid
    - Increases reliability of system
    - https://www.youtube.com/watch?v=V6haWLM0Rrs

Other Smart Grid Benefits

- Grid Insight
  - Allows us to have greater understanding of the system and to make more effective data driven decisions
- Allows for increased Distributed Energy Resources (DERs)
  - E.g. Electric Vehicle, Small home generation
- Significant GHG emission reductions
  - Reduction of 2,804 tonnes CO2 annually directly from Sault Smart Grid

2018 Project

- Timeframe:
  - Start fall 2018 (engineering work)
  - Construction starts spring 2019
  - Project completed early 2020

2018 Project Proposal

Project Cost (direct)	$32,751,469
Funding (approx.)	$(14,340,000)
Net Project Cost	$18,501,469

Monthly Costs

Item	Monthly Payment
LEASE PAYMENT TOTAL	$123,989 indexed
Maintenance	$62,487 indexed
TOTAL	**$186,476 indexed**

Monthly Benefits

Item	Monthly Amount
Energy Savings	$129,500 indexed
Avoided CapEx	$28,559
LDC Efficiencies*	$2,568 indexed
Depreciation Tax Benefit	$28,930
TOTAL MONTHLY SAVINGS	**$189,557 indexed**

* Conservative

Bill Impacts

Residential	Fixed portion	Variable portion	Total
SSG cost	$0.66	$1.01	$1.67
SSG Efficiency Gain			$(1.78)
Impact to bill (direct savings vs costs)			$(0.11)
Reliability gain (Leidos analysis)			$(3.27)
Direct and Indirect Impact			$(3.38)

Events to Date

- Financial Due Diligence completed by Navigant (2016) and PUC (2018)
  - Results included in this presentation
- Technical Due Diligence completed by Navigant
- PUC Board approval June 26th, 2018
- Legal Due Diligence underway
- Project Agreement
  - Draft completed
  - Final version subject to funding amounts/timing, OEB conditions

Next Steps

- With Shareholder approval, next steps are:
  - Confirm funding amounts and negotiate agreements
    - Expect to have in place in early fall
  - Submit Interim Capital Module (ICM) to Ontario Energy Board (OEB)
    - Submission in early fall, decision in early 2019.

Pre-Work Plan

- Prior to OEB approval, we will proceed with some engineering work to get the project underway

Resolution

WHEREAS the PUC Services Board has approved the Smart Grid Proposal as presented on June 26, 2018 subject to the following conditions precedent:

- Federal/Provincial funding approved (>$9 million)
- Shareholder approves the project
- OEB approval for the first of two consecutive ICMs in place

AND WHERAS the PUC Services Inc. Board is required to seek Shareholder approval for a single capital expenditure in excess of $5 million or any capital expenditure in aggregate in excess of $10 million. An approval decision is now being requested for the Smart Grid Proposal by the Shareholder

BE IT RESOLVED THAT the Shareholder approves the Sault Smart Grid proposal as presented subject to the following remaining Conditions Precedent:

- Federal/Provincial funding approved (>$9 million)
- OEB approval for the first of two consecutive ICMs in place

Questions?