

## **APPENDIX B TFO CAPITAL COST ESTIMATES**

<b>Project Name &amp; No.</b>	<b>Battle Sands 594S Substation Interconnection P1558</b>			<b>TRANSMISSION PROJECT ESTIMATE SUMMARY</b>
<b>Prepared by:</b>	<b>AltaLink Management Ltd.</b>			
<b>AACE Class: (future use)</b>	<b>N/A</b>	<b>Estimate Basis</b>	<b>PPS</b>	
<b>High Range</b>	<b>20%</b>	<b>Low Range</b>	<b>-10%</b>	
<b>Date of Estimate:</b>	<b>July 22, 2015</b>	<b>Base Year Used</b>	<b>2015</b>	
	<b>SYSTEM</b>	<b>CUSTOMER</b>	<b>TOTAL</b>	<b>ASSUMPTIONS</b>
<b>TRANSMISSION LINE</b>				
Material	\$ -	\$ 220,000	\$ 220,000	
Labour	\$ -	\$ 1,524,000	\$ 1,524,000	
Supply & Install	\$ -	\$ 195,000	\$ 195,000	
<b>TOTAL TRANSMISSION LINE</b>	<b>\$ -</b>	<b>\$ 1,939,000</b>	<b>\$ 1,939,000</b>	
<b>SUBSTATION</b>				
Material	\$ -	\$ 284,000	\$ 284,000	
Labour	\$ -	\$ 600,000	\$ 600,000	
Supply & Install	\$ -	\$ -	\$ -	
<b>TOTAL SUBSTATION</b>	<b>\$ -</b>	<b>\$ 884,000</b>	<b>\$ 884,000</b>	
<b>TELECOMMUNICATION</b>				
Material	\$ -	\$ -	\$ -	
Labour	\$ -	\$ -	\$ -	
Supply & Install	\$ -	\$ -	\$ -	
<b>TOTAL TELECOMMUNICATIONS</b>	<b>\$ -</b>	<b>\$ -</b>	<b>\$ -</b>	
<b>OWNERS</b>				
Pre-PPS cost	\$ -	\$ 29,000	\$ 29,000	The customer requested that AML complete some engineering and siting investigation work prior to the PPS
Proposal to Provide Service	\$ -	\$ 103,000	\$ 103,000	
Facility Applications	\$ -	\$ 148,000	\$ 148,000	
Regulatory & Compliance	\$ -	\$ -	\$ -	
Land Rights - Easements	\$ -	\$ 42,000	\$ 42,000	
Land - Damage Claims	\$ -	\$ -	\$ -	
Land - Acquisitions	\$ -	\$ -	\$ -	
Other	\$ -	\$ -	\$ -	
<b>TOTAL OWNERS COST</b>	<b>\$ -</b>	<b>\$ 323,000</b>	<b>\$ 323,000</b>	
<b>DISTRIBUTED</b>				
Procurement Management	\$ -	\$ 43,000	\$ 43,000	
Project Management	\$ -	\$ 490,000	\$ 490,000	
Construction Management	\$ -	\$ 234,000	\$ 234,000	
Contingency	\$ -	\$ 568,000	\$ 568,000	
Escalation	\$ -	\$ 178,000	\$ 178,000	Escalation rate of 3.4% compounded on an annual basis
<b>TOTAL DISTRIBUTED</b>	<b>\$ -</b>	<b>\$ 1,513,000</b>	<b>\$ 1,513,000</b>	
<b>SALVAGE</b>				
Transmission Line Labour	\$ -	\$ -	\$ -	
Substation Labour	\$ -	\$ 9,000	\$ 9,000	
Telecom Labour	\$ -	\$ -	\$ -	
Land Remediation and Reclamation	\$ -	\$ -	\$ -	
	\$ -	\$ -	\$ -	
	\$ -	\$ -	\$ -	
<b>TOTAL SALVAGE</b>	<b>\$ -</b>	<b>\$ 9,000</b>	<b>\$ 9,000</b>	
<b>OTHER COSTS</b>				
AFUDC	\$ -	\$ -	\$ -	
E&S/Overhead	\$ -	\$ 264,000	\$ 264,000	E&S rate of 6%
<b>TOTAL OTHER</b>	<b>\$ -</b>	<b>\$ 264,000</b>	<b>\$ 264,000</b>	
<b>TOTAL PROJECT</b>	<b>\$ -</b>	<b>\$ 4,933,000</b>	<b>\$ 4,933,000</b>	<b>This amount is in 2017\$</b>

# TRANSMISSION LINE OVERHEAD SUMMARY

	SYSTEM	CUSTOMER	TOTAL	CONTRACT	ASSUMPTIONS
<b>Line &lt;769L, Location - from Hardisty 377S to Rosyth 296S&gt;</b>					
<b>MATERIALS</b>					
<b>Foundations</b>		\$ -	\$ -	\$ -	
Screw piles	quantity	\$ -	\$ -	\$ -	
Driven Piles	quantity	\$ -	\$ -	\$ -	
Caisson	quantity	\$ -	\$ -	\$ -	
Concrete Foundations	quantity	\$ -	\$ -	\$ -	
Grillage Foundations	quantity	\$ -	\$ -	\$ -	
Other type	quantity	\$ -	\$ -	\$ -	
Other type	quantity	\$ -	\$ -	\$ -	
Other type	quantity	\$ -	\$ -	\$ -	
<b>Structures</b>		\$ -	\$ -	\$ -	
RA Tower Group	list all angles and quantities	\$ -	\$ -	\$ -	
RB Tower Group	list all angles and quantities	\$ -	\$ -	\$ -	
RC Tower Group	list all angles and quantities	\$ -	\$ -	\$ -	
Steel Pole	list all angles and quantities	\$ -	\$ -	\$ -	
Wood Pole	list all angles and quantities	\$ -	\$ -	\$ -	
"H" - Frame	list all angles and quantities	\$ -	\$ -	\$ -	
Composite Structures	list all angles and quantities	\$ -	\$ -	\$ -	
P51A Tower Group	list all angles and quantities	\$ -	\$ -	\$ -	
P51B Tower Group	list all angles and quantities	\$ -	\$ -	\$ -	
P51C Tower Group	list all angles and quantities	\$ -	\$ -	\$ -	
P52A Tower Group	list all angles and quantities	\$ -	\$ -	\$ -	
P52B Tower Group	list all angles and quantities	\$ -	\$ -	\$ -	
P52C Tower Group	list all angles and quantities	\$ -	\$ -	\$ -	
HA52 Tower - Double Delta	list all angles and quantities	\$ -	\$ -	\$ -	
HB52 Tower - Double Delta	list all angles and quantities	\$ -	\$ -	\$ -	
HC52 Tower - Double Delta	list all angles and quantities	\$ -	\$ -	\$ -	
HVDC 500kv Tower	list all angles and quantities	\$ -	\$ -	\$ -	
Misc Structures	list all angles and quantities	\$ -	\$ -	\$ -	
Structure Type 9	list all angles and quantities	\$ -	\$ -	\$ -	
<b>Hardware</b>	one (1) ls	\$ -	\$ 9,000	\$ 9,000	
Hardware	one (1) ls	\$ -	\$ 9,000	\$ 9,000	
<b>Conductor</b>	one (1) ls	\$ -	\$ 2,000	\$ 2,000	
266 Partridge	0.15 km	\$ -	\$ 1,000	\$ 1,000	
395 Chickadee	Size / bundle	\$ -	\$ -	\$ -	
477 Hawk	Size / bundle	\$ -	\$ -	\$ -	
636 Crowsnest	Size / bundle	\$ -	\$ -	\$ -	
795 Drake	Size / bundle	\$ -	\$ -	\$ -	
1033 Curlew	Size / bundle	\$ -	\$ -	\$ -	
1590 Falcon	Size / bundle	\$ -	\$ -	\$ -	
Conductor type 6	AAC, ACCR, ACSS size, bundle	\$ -	\$ -	\$ -	
Conductor type 7	size, bundle	\$ -	\$ -	\$ -	
Shield Wire	Size and km	\$ -	\$ -	\$ -	
OPGW	one (1) ls	\$ -	\$ 1,000	\$ 1,000	
<b>SUBTOTAL MATERIALS</b>		\$ -	\$ 11,000	\$ 11,000	

## TRANSMISSION LINE OVERHEAD SUMMARY

	SYSTEM	CUSTOMER	TOTAL	CONTRACT	ASSUMPTIONS
<b>LABOUR</b>					
<b>Detailed Engineering</b>		\$ -	\$ 9,000	\$ 9,000	
Line	one (1) ls	\$ -	\$ 9,000	\$ 9,000	
Civil		\$ -	\$ -	\$ -	
Geotechnical		\$ -	\$ -	\$ -	
<b>Survey</b>		\$ -	\$ -	\$ -	
Survey - ROW and structures		\$ -	\$ -	\$ -	
<b>Right of Way</b>		\$ -	\$ -	\$ -	
Site Preparation	ha	\$ -	\$ -	\$ -	
Environmental Management		\$ -	\$ -	\$ -	
Access Road(s)	km	\$ -	\$ -	\$ -	
Access Mats Rental	quantity	\$ -	\$ -	\$ -	
Access Mats Lay/Removal	hours	\$ -	\$ -	\$ -	
<b>Construction</b>	one (1) ls	\$ -	\$ 35,000	\$ 35,000	
Foundation		\$ -	\$ -	\$ -	
Structure Installation		\$ -	\$ -	\$ -	
Stringing - Shieldwires & Conductor	one (1) ls	\$ -	\$ 35,000	\$ 35,000	
AC Mitigation		\$ -	\$ -	\$ -	
Major Equipment Rental	type, number, duration	\$ -	\$ -	\$ -	
Field Supervision		\$ -	\$ -	\$ -	
Indirects		\$ -	\$ -	\$ -	
Mobilization / demobilization		\$ -	\$ -	\$ -	
Yards	number and size	\$ -	\$ -	\$ -	
Camp Services & Catering	size and duration	\$ -	\$ -	\$ -	
<b>Commissioning</b>		\$ -	\$ -	\$ -	
Commissioning		\$ -	\$ -	\$ -	
<b>SUBTOTAL LABOUR</b>		\$ -	\$ 44,000	\$ 44,000	
<b>SUPPLY &amp; INSTALL</b>					
Supply & Install 1	type / quality	\$ -	\$ -	\$ -	
Supply & Install 2	type / quality	\$ -	\$ -	\$ -	
Supply & Install 3	type / quality	\$ -	\$ -	\$ -	
<b>SUBTOTAL SUPPLY &amp; INSTALL</b>		\$ -	\$ -	\$ -	
<b>SUBTOTAL LINE (1)</b>		\$ -	\$ 55,000	\$ 55,000	

# TRANSMISSION LINE OVERHEAD SUMMARY

	SYSTEM	CUSTOMER	TOTAL	CONTRACT	ASSUMPTIONS
<b>Line &lt;769BL, Location - from 769L Tap to Battle Sands 594S&gt;</b>					
<b>MATERIALS</b>					
<b>Foundations</b>	one (1) ls	\$ -	\$ 3,000	\$ 3,000	Bolts and plates for the self-supported structures
Screw piles	quantity	\$ -	\$ -	\$ -	
Driven Piles	quantity	\$ -	\$ -	\$ -	
Caisson	quantity	\$ -	\$ -	\$ -	
Concrete Foundations	quantity	\$ -	\$ -	\$ -	
Grillage Foundations	quantity	\$ -	\$ -	\$ -	
Other type	one (1) ls	\$ -	\$ 3,000	\$ 3,000	
Other type	quantity	\$ -	\$ -	\$ -	
Other type	quantity	\$ -	\$ -	\$ -	
<b>Structures</b>	one (1) ls	\$ -	\$ 110,000	\$ 110,000	
RA Tower Group	list all angles and quantities	\$ -	\$ -	\$ -	
RB Tower Group	list all angles and quantities	\$ -	\$ -	\$ -	
RC Tower Group	list all angles and quantities	\$ -	\$ -	\$ -	
Steel Pole	3 ea	\$ -	\$ 64,000	\$ 64,000	
Wood Pole	4 ea	\$ -	\$ 44,000	\$ 44,000	
"H" - Frame	list all angles and quantities	\$ -	\$ -	\$ -	
Composite Structures	list all angles and quantities	\$ -	\$ -	\$ -	
P51A Tower Group	list all angles and quantities	\$ -	\$ -	\$ -	
P51B Tower Group	list all angles and quantities	\$ -	\$ -	\$ -	
P51C Tower Group	list all angles and quantities	\$ -	\$ -	\$ -	
P52A Tower Group	list all angles and quantities	\$ -	\$ -	\$ -	
P52B Tower Group	list all angles and quantities	\$ -	\$ -	\$ -	
P52C Tower Group	list all angles and quantities	\$ -	\$ -	\$ -	
HA52 Tower - Double Delta	list all angles and quantities	\$ -	\$ -	\$ -	
HB52 Tower - Double Delta	list all angles and quantities	\$ -	\$ -	\$ -	
HC52 Tower - Double Delta	list all angles and quantities	\$ -	\$ -	\$ -	
HVDC 500kv Tower	list all angles and quantities	\$ -	\$ -	\$ -	
Misc Structures	one (1) ls	\$ -	\$ 2,000	\$ 2,000	
Structure Type 9	list all angles and quantities	\$ -	\$ -	\$ -	
<b>Hardware</b>	one (1) ls	\$ -	\$ 65,000	\$ 65,000	
Hardware	one (1) ls	\$ -	\$ 65,000	\$ 65,000	
<b>Conductor</b>	one (1) ls	\$ -	\$ 32,000	\$ 32,000	
266 Partridge	1 km	\$ -	\$ 19,000	\$ 19,000	
395 Chickadee	Size / bundle	\$ -	\$ -	\$ -	
477 Hawk	Size / bundle	\$ -	\$ -	\$ -	
636 Crowsnest	Size / bundle	\$ -	\$ -	\$ -	
795 Drake	Size / bundle	\$ -	\$ -	\$ -	
1033 Curlew	Size / bundle	\$ -	\$ -	\$ -	
1590 Falcon	Size / bundle	\$ -	\$ -	\$ -	
Conductor type 6	AAC, ACCR, ACSS size, bundle	\$ -	\$ -	\$ -	
Conductor type 7	size, bundle	\$ -	\$ -	\$ -	
Shield Wire	Size and km	\$ -	\$ -	\$ -	
OPGW	24 Fiber Type A size	\$ -	\$ 13,000	\$ 13,000	
<b>SUBTOTAL MATERIALS</b>		\$ -	\$ 209,000	\$ 209,000	

## TRANSMISSION LINE OVERHEAD SUMMARY

		SYSTEM	CUSTOMER	TOTAL	CONTRACT	ASSUMPTIONS
<b>LABOUR</b>						
<b>Detailed Engineering</b>		\$ -	\$ 853,000	\$ 853,000		
Line		\$ -	\$ 828,000	\$ 828,000		
Civil		\$ -	\$ -	\$ -		
Geotechnical		\$ -	\$ 25,000	\$ 25,000		
<b>Survey</b>		\$ -	\$ 15,000	\$ 15,000		
Survey - ROW and structures		\$ -	\$ 15,000	\$ 15,000		
<b>Right of Way</b>	one (1) ls	\$ -	\$ 71,000	\$ 71,000		
Site Preparation	one (1) ls	\$ -	\$ 17,000	\$ 17,000		
Environmental Management		\$ -	\$ -	\$ -		
Access Road(s)	km	\$ -	\$ -	\$ -		
Access Mats Rental	one (1) ls	\$ -	\$ 19,000	\$ 19,000		
Access Mats Lay/Removal	one (1) ls	\$ -	\$ 35,000	\$ 35,000		
<b>Construction</b>	one (1) ls	\$ -	\$ 529,000	\$ 529,000		
Foundation	34 ea	\$ -	\$ 273,000	\$ 273,000		The self-supported structure will have a battery pile
Structure Installation	7 ea	\$ -	\$ 86,000	\$ 86,000		
Stringing - Shieldwires & Conductor	1 km	\$ -	\$ 76,000	\$ 76,000		
AC Mitigation		\$ -	\$ -	\$ -		
Major Equipment Rental	one (1) ls	\$ -	\$ 17,000	\$ 17,000		
Field Supervision	one (1) ls	\$ -	\$ 24,000	\$ 24,000		
Indirects	one (1) ls	\$ -	\$ 30,000	\$ 30,000		
Mobilization / demobilization	one (1) ls	\$ -	\$ 25,000	\$ 25,000		
Yards	number and size	\$ -	\$ -	\$ -		
Camp Services & Catering	size and duration	\$ -	\$ -	\$ -		
<b>Commissioning</b>	one (1) ls	\$ -	\$ 12,000	\$ 12,000		
Commissioning	one (1) ls	\$ -	\$ 12,000	\$ 12,000		
<b>SUBTOTAL LABOUR</b>		\$ -	\$ 1,480,000	\$ 1,480,000		
<b>SUPPLY &amp; INSTALL</b>						
Supply & Install 1	type / quality	\$ -	\$ 195,000	\$ 195,000		
Supply & Install 2	type / quality	\$ -	\$ -	\$ -		
Supply & Install 3	type / quality	\$ -	\$ -	\$ -		
<b>SUBTOTAL SUPPLY &amp; INSTALL</b>		\$ -	\$ 195,000	\$ 195,000		
<b>SUBTOTAL LINE (2)</b>		\$ -	\$ 1,884,000	\$ 1,884,000		
<b>TOTAL MATERIAL OH LINE</b>		\$ -	\$ 220,000	\$ 220,000		
<b>TOTAL LABOR OH LINE</b>		\$ -	\$ 1,524,000	\$ 1,524,000		
<b>TOTAL SUPPLY &amp; INSTALL OH LINE</b>		\$ -	\$ 195,000	\$ 195,000		
<b>TOTAL TRANSMISSION OH LINE</b>		\$ -	\$ 1,939,000	\$ 1,939,000		

## SUBSTATION SUMMARY

	SYSTEM	CUSTOMER	TOTAL	CONTRACT	ASSUMPTIONS
<b>Rosyth 269S</b>					
<b>MATERIALS</b>					
<b>Major Equipment</b>		\$ -	\$ 76,000	\$ 76,000	
138kv Transformer		\$ -	\$ -	\$ -	
240kv Transformer		\$ -	\$ -	\$ -	
500kv Transformer		\$ -	\$ -	\$ -	
25kv Circuit Breaker		\$ -	\$ -	\$ -	
138kv Circuit Breaker	one (1), SF6 Dead Tank 650 BIL Outdoor Breaker	\$ -	\$ 71,000	\$ 71,000	
240kv Circuit Breaker		\$ -	\$ -	\$ -	
500kv Circuit Breaker		\$ -	\$ -	\$ -	
138kv Capacitor Bank		\$ -	\$ -	\$ -	
240kv Capacitor Bank		\$ -	\$ -	\$ -	
500kv Capacitor Bank		\$ -	\$ -	\$ -	
Capacitor Bank		\$ -	\$ -	\$ -	
138kv Reactor bank		\$ -	\$ -	\$ -	
240kv Reactor bank		\$ -	\$ -	\$ -	
500kv Reactor bank		\$ -	\$ -	\$ -	
Reactor bank		\$ -	\$ -	\$ -	
SVS (Static VAR System)		\$ -	\$ -	\$ -	
25kv Current Transformer		\$ -	\$ -	\$ -	
138kv Current Transformer		\$ -	\$ -	\$ -	
240kv Current Transformer		\$ -	\$ -	\$ -	
500kv Current Transformer		\$ -	\$ -	\$ -	
25kv Potential Transformer		\$ -	\$ -	\$ -	
138kv Potential Transformer		\$ -	\$ -	\$ -	
240kv Potential Transformer		\$ -	\$ -	\$ -	
500kv Potential Transformer		\$ -	\$ -	\$ -	
CVT's Voltage Transformers		\$ -	\$ -	\$ -	
25kv Surge Arrestors		\$ -	\$ -	\$ -	
138kv Surge Arrestor	three (3) 120 kV 98 MCOV surge arresters	\$ -	\$ 5,000	\$ 5,000	
240kv Surge Arrestor		\$ -	\$ -	\$ -	
500kv Surge Arrestor		\$ -	\$ -	\$ -	
Switchgear > 138kV		\$ -	\$ -	\$ -	
Switchgear 25kV – 138kV		\$ -	\$ -	\$ -	
Switchgear 5kV – 25kv		\$ -	\$ -	\$ -	
Switchgear 600v		\$ -	\$ -	\$ -	
Switchgear Building		\$ -	\$ -	\$ -	
Other major equipment		\$ -	\$ -	\$ -	
Other major equipment		\$ -	\$ -	\$ -	
Other major equipment		\$ -	\$ -	\$ -	
<b>Switchyard</b>	one (1) ls	\$ -	\$ 123,000	\$ 123,000	
Foundations	eight (8) ea	\$ -	\$ 37,000	\$ 37,000	
Bus Structure and Network	one (1) ls	\$ -	\$ 45,000	\$ 45,000	
25kv Disconnect Switch		\$ -	\$ -	\$ -	
138kv Disconnect Switch	one (1) - 138kV 550 BIL 1200A vertically mounted air break two (2) - motor operators for 138kV 550 BIL switch	\$ -	\$ 38,000	\$ 38,000	
240kv Disconnect Switch		\$ -	\$ -	\$ -	
500kv Disconnect Switch		\$ -	\$ -	\$ -	
Disconnect Switch General		\$ -	\$ -	\$ -	
Cabling	one (1) ls	\$ -	\$ 3,000	\$ 3,000	
Station Service		\$ -	\$ -	\$ -	
<b>Control Building</b>		\$ -	\$ 85,000	\$ 85,000	
Structure		\$ -	\$ -	\$ -	
Protection, Control, Metering	(one) 1 ls	\$ -	\$ 78,000	\$ 78,000	6 ea - Protection & Control Modules. 1 ls - Misc racks, P & C materials & grounding
SCADA		\$ -	\$ 7,000	\$ 7,000	
Other		\$ -	\$ -	\$ -	

## SUBSTATION SUMMARY

		SYSTEM	CUSTOMER	TOTAL	CONTRACT	ASSUMPTIONS
<b>SUBTOTAL MATERIALS</b>		\$ -	\$ 283,000	\$ 283,000		



## SUBSTATION SUMMARY

		SYSTEM	CUSTOMER	TOTAL	CONTRACT	ASSUMPTIONS
<b>LABOUR</b>						
<b>Detailed Engineering</b>	One (1) Is	\$ -	\$ 286,000	\$ 286,000		
Civil	One (1) Is	\$ -	\$ 17,000	\$ 17,000		
Electric	One (1) Is	\$ -	\$ 121,000	\$ 121,000		
Geotechnical		\$ -	\$ -	\$ -		
P&C	One (1) Is	\$ -	\$ 136,000	\$ 136,000		
SCADA	One (1) Is	\$ -	\$ 12,000	\$ 12,000		
<b>Construction</b>	One (1) Is	\$ -	\$ 116,000	\$ 116,000		
Survey	One (1) Is	\$ -	\$ 7,000	\$ 7,000		
Site Preparation	One (1) Is	\$ -	\$ 19,000	\$ 19,000		
Clearing		\$ -	\$ -	\$ -		
Access Road	One (1) Is	\$ -	\$ -	\$ -		
Access Mats Rental	One (1) Is	\$ -	\$ 25,000	\$ 25,000		
Access Mats Lay/Removal	One (1) Is	\$ -	\$ -	\$ -		
Mobilization / demobilization		\$ -	\$ 4,000	\$ 4,000		
AC Mitigation		\$ -	\$ -	\$ -		
Regulatory Approvals/Permits		\$ -	\$ -	\$ -		
Environmental Management		\$ -	\$ -	\$ -		
Major Equipment Rental	One (1) Is	\$ -	\$ 21,000	\$ 21,000		
Yards		\$ -	\$ -	\$ -		
Shelter Facility		\$ -	\$ -	\$ -		
Camp Services & Catering		\$ -	\$ -	\$ -		
Field Supervision	One (1) Is	\$ -	\$ 12,000	\$ 12,000		
Indirects	One (1) Is	\$ -	\$ 28,000	\$ 28,000		
<b>Foundations</b>	One (1) Is	\$ -	\$ 1,000	\$ 1,000		
<b>Electric</b>	One (1) Is	\$ -	\$ 174,000	\$ 174,000		
Structure & Bus Work Installation	One (1) Is	\$ -	\$ 49,000	\$ 49,000		
Installation of equipment	One (1) Is	\$ -	\$ 48,000	\$ 48,000		
<b>P&amp;C and SCADA</b>		\$ -	\$ -	\$ -		
<b>Camp Services &amp; Catering</b>		\$ -	\$ -	\$ -		
<b>Commissioning</b>	One (1) Is	\$ -	\$ 76,000	\$ 76,000		
<b>SUBTOTAL LABOUR</b>	One (1) Is	\$ -	\$ 578,000	\$ 578,000		
<b>SUPPLY &amp; INSTALL</b>						
Supply & Install 1		\$ -	\$ -	\$ -		
Supply & Install 2		\$ -	\$ -	\$ -		
Supply & Install 3		\$ -	\$ -	\$ -		
<b>SUBTOTAL SUPPLY &amp; INSTALL</b>		\$ -	\$ -	\$ -		
<b>TOTAL SUBSTATION (1)</b>		\$ -	\$ 861,000	\$ 861,000		

## SUBSTATION SUMMARY

	SYSTEM	CUSTOMER	TOTAL	CONTRACT	ASSUMPTIONS
<b>Hardisty 377S</b>					
<b>MATERIALS</b>					
<b>Major Equipment</b>					
138kv Transformer	\$ -	\$ -	\$ -		
240kv Transformer	\$ -	\$ -	\$ -		
500kv Transformer	\$ -	\$ -	\$ -		
25kv Circuit Breaker	\$ -	\$ -	\$ -		
138kv Circuit Breaker	\$ -	\$ -	\$ -		
240kv Circuit Breaker	\$ -	\$ -	\$ -		
500kv Circuit Breaker	\$ -	\$ -	\$ -		
138kv Capacitor Bank	\$ -	\$ -	\$ -		
240kv Capacitor Bank	\$ -	\$ -	\$ -		
500kv Capacitor Bank	\$ -	\$ -	\$ -		
Capacitor Bank	\$ -	\$ -	\$ -		
138kv Reactor bank	\$ -	\$ -	\$ -		
240kv Reactor bank	\$ -	\$ -	\$ -		
500kv Reactor bank	\$ -	\$ -	\$ -		
Reactor bank	\$ -	\$ -	\$ -		
SVS (Static VAR System)	\$ -	\$ -	\$ -		
25kv Current Transformer	\$ -	\$ -	\$ -		
138kv Current Transformer	\$ -	\$ -	\$ -		
240kv Current Transformer	\$ -	\$ -	\$ -		
500kv Current Transformer	\$ -	\$ -	\$ -		
25kv Potential Transformer	\$ -	\$ -	\$ -		
138kv Potential Transformer	\$ -	\$ -	\$ -		
240kv Potential Transformer	\$ -	\$ -	\$ -		
500kv Potential Transformer	\$ -	\$ -	\$ -		
CVT's Voltage Transformers	\$ -	\$ -	\$ -		
25kv Surge Arrestors	\$ -	\$ -	\$ -		
138kv Surge Arrestor	\$ -	\$ -	\$ -		
240kv Surge Arrestor	\$ -	\$ -	\$ -		
500kv Surge Arrestor	\$ -	\$ -	\$ -		
Switchgear > 138kV	\$ -	\$ -	\$ -		
Switchgear 25kV – 138kV	\$ -	\$ -	\$ -		
Switchgear 5kV – 25kv	\$ -	\$ -	\$ -		
Switchgear 600v	\$ -	\$ -	\$ -		
Switchgear Building	\$ -	\$ -	\$ -		
Other major equipment	\$ -	\$ -	\$ -		
Other major equipment	\$ -	\$ -	\$ -		
Other major equipment	\$ -	\$ -	\$ -		
<b>Switchyard</b>	\$ -	\$ -	\$ -		
Foundations	\$ -	\$ -	\$ -		
Bus Structure and Network	\$ -	\$ -	\$ -		
25kv Disconnect Switch	\$ -	\$ -	\$ -		
138kv Disconnect Switch	\$ -	\$ -	\$ -		
240kv Disconnect Switch	\$ -	\$ -	\$ -		
500kv Disconnect Switch	\$ -	\$ -	\$ -		
Disconnect Switch General	\$ -	\$ -	\$ -		
Cabling	\$ -	\$ -	\$ -		
Station Service	\$ -	\$ -	\$ -		
<b>Control Building</b>	\$ -	\$ -	\$ -		
Structure	\$ -	\$ -	\$ -		
Protection, Control, Metering	\$ -	\$ -	\$ -		
SCADA	\$ -	\$ -	\$ -		
Other	\$ -	\$ -	\$ -		
<b>SUBTOTAL MATERIALS</b>	\$ -	\$ -	\$ -		

## SUBSTATION SUMMARY

		SYSTEM	CUSTOMER	TOTAL	CONTRACT	ASSUMPTIONS
<b>LABOUR</b>						
<b>Detailed Engineering</b>	One (1) Is	\$ -	\$ 11,000	\$ 11,000		
Civil		\$ -	\$ -	\$ -		
Electric	One (1) Is	\$ -	\$ 4,000	\$ 4,000		
Geotechnical		\$ -	\$ -	\$ -		
P&C	One (1) Is	\$ -	\$ 5,000	\$ 5,000		
SCADA	One (1) Is	\$ -	\$ 3,000	\$ 3,000		
<b>Construction</b>		\$ -	\$ -	\$ -		
Survey		\$ -	\$ -	\$ -		
Site Preparation		\$ -	\$ -	\$ -		
Clearing		\$ -	\$ -	\$ -		
Access Road		\$ -	\$ -	\$ -		
Access Mats Rental		\$ -	\$ -	\$ -		
Access Mats Lay/Removal		\$ -	\$ -	\$ -		
Mobilization / demobilization		\$ -	\$ -	\$ -		
AC Mitigation		\$ -	\$ -	\$ -		
Regulatory Approvals/Permits		\$ -	\$ -	\$ -		
Environmental Management		\$ -	\$ -	\$ -		
Major Equipment Rental		\$ -	\$ -	\$ -		
Yards		\$ -	\$ -	\$ -		
Shelter Facility		\$ -	\$ -	\$ -		
Camp Services & Catering		\$ -	\$ -	\$ -		
Field Supervision		\$ -	\$ -	\$ -		
Indirects		\$ -	\$ -	\$ -		
<b>Foundations</b>		\$ -	\$ -	\$ -		
<b>Electric</b>	One (1) Is	\$ -	\$ 11,000	\$ 11,000		
Structure & Bus Work Installation		\$ -	\$ -	\$ -		
Installation of equipment	One (1) Is	\$ -	\$ 2,000	\$ 2,000		
<b>P&amp;C and SCADA</b>		\$ -	\$ -	\$ -		
<b>Camp Services &amp; Catering</b>		\$ -	\$ -	\$ -		
<b>Commissioning</b>	One (1) Is	\$ -	\$ 9,000	\$ 9,000		
<b>SUBTOTAL LABOUR</b>		\$ -	\$ 23,000	\$ 23,000		
<b>SUPPLY &amp; INSTALL</b>						
Supply & Install 1		\$ -	\$ -	\$ -		
Supply & Install 2		\$ -	\$ -	\$ -		
Supply & Install 3		\$ -	\$ -	\$ -		
<b>SUBTOTAL SUPPLY &amp; INSTALL</b>		\$ -	\$ -	\$ -		
<b>TOTAL SUBSTATION (2)</b>		\$ -	\$ 23,000	\$ 23,000		
<b>TOTAL MATERIALS</b>		\$ -	\$ 284,000	\$ 284,000		
<b>TOTAL LABOR</b>		\$ -	\$ 600,000	\$ 600,000		
<b>TOTAL SUPPLY &amp; INSTALL</b>		\$ -	\$ -	\$ -		
<b>TOTAL SUBSTATION</b>		\$ -	\$ 884,000	\$ 884,000		

## TELECOMMUNICATIONS SUMMARY

	SYSTEM	CUSTOMER	TOTAL	CONTRACT	ASSUMPTIONS
<b>Telecommunication Site &lt; &gt;</b>					
<b>MATERIALS</b>					
Tower/Antennae	\$	-	\$	-	
Radio Equipment	\$	-	\$	-	
Building	\$	-	\$	-	
Fibre	\$	-	\$	-	
Duct Banks	\$	-	\$	-	
Other	\$	-	\$	-	
<b>SUBTOTAL MATERIALS</b>	<b>\$</b>	<b>-</b>	<b>\$</b>	<b>-</b>	
<b>LABOUR</b>					
Detailed Engineering	\$	-	\$	-	
Site Construction	\$	-	\$	-	
Tower Construction	\$	-	\$	-	
Building & Equipment	\$	-	\$	-	
Commissioning	\$	-	\$	-	
Other	\$	-	\$	-	
<b>SUBTOTAL LABOUR</b>	<b>\$</b>	<b>-</b>	<b>\$</b>	<b>-</b>	
<b>SUPPLY &amp; INSTALL</b>					
Supply & Install 1	\$	-	\$	-	
Supply & Install 2	\$	-	\$	-	
Supply & Install 3	\$	-	\$	-	
<b>SUBTOTAL SUPPLY &amp; INSTALL</b>	<b>\$</b>	<b>-</b>	<b>\$</b>	<b>-</b>	
<b>TELECOM SITE (1)</b>	<b>\$</b>	<b>-</b>	<b>\$</b>	<b>-</b>	
<b>TELECOM SITE (6)</b>	<b>\$</b>	<b>-</b>	<b>\$</b>	<b>-</b>	
<b>TOTAL MATERIALS</b>	<b>\$</b>	<b>-</b>	<b>\$</b>	<b>-</b>	
<b>TOTAL LABOR</b>	<b>\$</b>	<b>-</b>	<b>\$</b>	<b>-</b>	
<b>TOTAL SUPPLY &amp; INSTALL</b>	<b>\$</b>	<b>-</b>	<b>\$</b>	<b>-</b>	
<b>TOTAL TELECOMMUNICATIONS</b>	<b>\$</b>	<b>-</b>	<b>\$</b>	<b>-</b>	

## DISTRIBUTED LABOUR SUMMARY

	SYSTEM	CUSTOMER	TOTAL	CONTRACT	ASSUMPTIONS
<b>PROCUREMENT</b>					
Procurement Management	\$ -	\$ 43,000	\$ 43,000		FTE (Full Time Equivalent) detail is proprietary information as per previous discussions between AML and AESO senior management.
<Other Resources>	\$ -	\$ -	\$ -		
<Other Resources>	\$ -	\$ -	\$ -		
<Other costs>	\$ -	\$ -	\$ -		
<Other costs>	\$ -	\$ -	\$ -		
<b>TOTAL PROCUREMENT</b>	<b>\$ -</b>	<b>\$ 43,000</b>	<b>\$ 43,000</b>		<i>Total used in Summary-Tab 1</i>
<b>PROJECT MANAGEMENT</b>					
Project Management	\$ -	\$ 298,000	\$ 298,000		FTE (Full Time Equivalent) detail is proprietary information as per previous discussions between AML and AESO senior management.
Project Management Office	\$ -	\$ 84,000	\$ 84,000		
Projects and Controls	\$ -	\$ 108,000	\$ 108,000		
<Other resource>	\$ -	\$ -	\$ -		
<Other resource>	\$ -	\$ -	\$ -		
<Other resource>	\$ -	\$ -	\$ -		
<b>TOTAL PROJECT MANAGEMENT</b>	<b>\$ -</b>	<b>\$ 490,000</b>	<b>\$ 490,000</b>		<i>Total used in Summary-Tab 1</i>
<b>CONSTRUCTION</b>					
Construction Management	\$ -	\$ 234,000	\$ 234,000		FTE (Full Time Equivalent) detail is proprietary information as per previous discussions between AML and AESO senior management.
Environmental Management	\$ -	\$ -	\$ -		
Indirect	\$ -	\$ -	\$ -		
<Other resource>	\$ -	\$ -	\$ -		
<Other resource>	\$ -	\$ -	\$ -		
<Other resource>	\$ -	\$ -	\$ -		
<Other resource>	\$ -	\$ -	\$ -		
<b>TOTAL CONSTRUCTION</b>	<b>\$ -</b>	<b>\$ 234,000</b>	<b>\$ 234,000</b>		<i>Total used in Summary-Tab 1</i>
<b>TOTAL DISTRIBUTED</b>	<b>\$ -</b>	<b>\$ 767,000</b>	<b>\$ 767,000</b>		<i>Total used in Summary-Tab 1</i>

## CONTINGENCY / RISK REGISTER SUMMARY

RISK	DESCRIPTION	IMPACT	PROB	COST IMPACT	CONTINGENCY	ACTION	RESPONSE
	Commodity cost increase (other than the escalation)	Low	20%	\$ 120,000	\$ 24,000		
	Additional resources required during the outages	Medium	20%	\$ 90,000	\$ 18,000		
	Hearing cost	Low	10%	\$ 250,000	\$ 25,000		
	Stop work related to Regulatory and/or Environment	High	20%	\$ 250,000	\$ 50,000		
	Additional cost for AC pipeline mitigation	Medium	40%	\$ 300,000	\$ 120,000		
	Not favorable construction weather conditions	Medium	20%	\$ 200,000	\$ 40,000		
	Additional Rig mats to protect the access road and pipelines	Low	30%	\$ 80,000	\$ 24,000		
	Start up and testing deficiencies.	Low	20%	\$ 100,000	\$ 20,000		
	Safety - Additional resources to meet safety commitments	Low	20%	\$ 80,000	\$ 16,000		
	Additional AML resources required to meet schedule	Medium	30%	\$ 50,000	\$ 15,000		
	Outage availability: ACC and/or client will not allow outage as planned	High	30%	\$ 50,000	\$ 15,000		
	Extra Hydrovac cost	Low	30%	\$ 60,000	\$ 18,000		
	Additional self-supported structure in the north part of the TL	Low	30%	\$ 180,000	\$ 54,000		
	Soil conditions - Geo-tech assumption different than actual	Low	10%	\$ 150,000	\$ 15,000		
	Damage of the existing access roads	Low	10%	\$ 100,000	\$ 10,000		
	Changes in the Engineering requirements and or delays	Low	20%	\$ 100,000	\$ 20,000		
	Fortis delays	High	10%	\$ 50,000	\$ 5,000		
	Prime Contractor challenges with the Customer	Medium	30%	\$ 150,000	\$ 45,000		
	Coordination between AML, Customer and EPC	Medium	20%	\$ 100,000	\$ 20,000		
	Delay in Material delivery	Low	10%	\$ 100,000	\$ 10,000		
	Additional gravel for the substation	Low	10%	\$ 40,000	\$ 4,000		
					\$ -		
<b>CONTINGENCY</b>					<b>\$ 568,000</b>		<i>Total used in Summary-Tab 1</i>
<b>Risk Simulation Use Only (below)</b>							
					<b>\$ -</b>		<i>Total used in Summary-Tab 1</i>
					<b>\$ 0.00</b>		<i>Total used in Summary-Tab 1</i>

## ESCALATION SUMMARY

	PERCENTAGE	YEARS	SYSTEM	CUSTOMER	ESCALATION	ASSUMPTIONS
<b>TRANSMISSION LINE</b>						
Material	3.4%	2.0	\$ -	\$ 13,000	\$ 13,000	
Labour	3.4%	2.0	\$ -	\$ 90,000	\$ 90,000	
Supply and Install	3.4%	2.0	\$ -	\$ 12,000	\$ 12,000	
<b>TOTAL TRANSMISSION</b>			<b>\$ -</b>	<b>\$ 115,000</b>	<b>\$ 115,000</b>	
<b>SUBSTATION</b>						
Material	3.4%	2.0	\$ -	\$ 17,000	\$ 17,000	
Labour	3.4%	2.0	\$ -	\$ 35,000	\$ 35,000	
Supply and Install	3.4%	2.0	\$ -	\$ -	\$ -	
<b>TOTAL SUBSTATION</b>			<b>\$ -</b>	<b>\$ 52,000</b>	<b>\$ 52,000</b>	
<b>TELECOMMUNICATIONS</b>						
Material			\$ -	\$ -	\$ -	
Labour			\$ -	\$ -	\$ -	
Supply and Install			\$ -	\$ -	\$ -	
<b>TOTAL TELECOMMUNICATIONS</b>			<b>\$ -</b>	<b>\$ -</b>	<b>\$ -</b>	
<b>OWNERS</b>						
Pre-PPS cost			\$ -	\$ -	\$ -	
Proposal to Provide Service			\$ -	\$ -	\$ -	
Facility Applications			\$ -	\$ -	\$ -	
Regulatory & Compliance			\$ -	\$ -	\$ -	
Land Rights - Easements			\$ -	\$ -	\$ -	
Land - Damage Claims			\$ -	\$ -	\$ -	
Land - Acquisitions			\$ -	\$ -	\$ -	
Land - Other			\$ -	\$ -	\$ -	
<b>TOTAL OWNERS</b>			<b>\$ -</b>	<b>\$ -</b>	<b>\$ -</b>	
<b>DISTRIBUTED</b>						
Procurement	3.4%	2.0	\$ -	\$ 1,000	\$ 1,000	
Project Management	3.4%	2.0	\$ -	\$ 7,000	\$ 7,000	
Construction Management	3.4%	2.0	\$ -	\$ 4,000	\$ 4,000	
<b>TOTAL DISTRIBUTED</b>			<b>\$ -</b>	<b>\$ 12,000</b>	<b>\$ 12,000</b>	
<b>SALVAGE</b>						
Transmission Line Labour			\$ -	\$ -	\$ -	
Substation Labour	3.4%	2.0	\$ -	\$ 1,000	\$ 1,000	
Land Remediation and Reclamation			\$ -	\$ -	\$ -	
<b>TOTAL SALVAGE</b>			<b>\$ -</b>	<b>\$ 1,000</b>	<b>\$ 1,000</b>	
<b>OTHER</b>						
AFUDC			\$ -	\$ -	\$ -	
E&S			\$ -	\$ -	\$ -	
<b>TOTAL OTHER</b>			<b>\$ -</b>	<b>\$ -</b>	<b>\$ -</b>	
<b>TOTAL ESCALATION</b>			<b>\$ -</b>	<b>\$ 180,000</b>	<b>\$ 180,000</b>	<i>Totals used in Summary-Tab 1</i>