



November 20, 2016

**Work Order No: SZ/Thikana 2A/Proc/66**

**Managing Director**

Cross World Power Limited  
House 06, Rd 92, Gulshan  
Dhaka-1212

**Subject: Work Order for Supply, Installation, and Testing & Commissioning of 250KVA Sub-Station Equipment for the 10 storied SIMPLETREE Thikana (2A) Project at Plot 2A, Rd 138, Gulshan-01, Dhaka 1212, Bangladesh.**

Dear Sir,

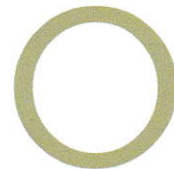
With reference to your offer no CPL/SS250/12616 dated November 03, 2016 and negotiation made with you regarding the above subjected matter, we are pleased to place our work order according to the following terms and condition.

**SPECIFICATION:**

<b>1) 11KV LIGHTING ARRESTOR:</b>	<b>01 Set</b>	
Rated Voltage	:	9KV
Rated System Voltage	:	12KV
Frequency	:	50 Hz
Minimum Spark over (RMS)	:	14KV
Maximum Spark over (RMS)	:	40KV
Maximum Impulse Spark (Crest)	:	45KV
Withstand Voltage		
Wet, 10 Sec.	:	28KV
Dry, 1 Min.	:	24KV
Discharge 33KV (Crest)	:	5KA
Impulse Current Withstand	:	55KA
<b>Maker : LS, Korea</b>		
<b>2) 11KV DROP-OUT FUSE:</b>	<b>01 Set</b>	
Rated Voltage (Nominal)	:	11KV
Rated Max. Voltage	:	15KV
Rated Frequency	:	50 Hz
BIL	:	75 KV
Rated Current RMS	:	20A
Interrupting Current RMS	:	10KA
Withstand Test Voltage		
Wet, 10Sec.	:	30KV
Dry, 1 Min.	:	33 KV
<b>Maker : LS, Korea</b>		

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#### 4) SCOPE FOR 250KVA OIL IMMERSED TRANSFORMER: 1Set

Three phased transformers ground mounted, oil immersed, with standard accessories. Indoor use. Routine tests and first filling oil included. Design, manufacturing, routine tests & tolerances according to IEC 76 standards.

Standard fittings:

- 4 no. Flat bi-directional rollers.
- 2 no. Lifting lugs,
- 2 no. Earthing points,
- 1 no. Rating plate(on HV side)

HV connections : 3 porcelain bushing  
LV connections : 4 porcelain bushing

Rated capacity : 250 KVA  
System voltage : 12 Kv  
Rated frequency : 50 Hz  
Type of cooling : ONAN  
Type of loading : Distribution  
Rated Voltage, Primary : 11000 V  
Secondary : 415 V  
Vector Group : DYN 11  
HV Tapping by links(off circuit) in : +/-2.5%, +/-5%,  
  
Ambient temperature : 40 deg. C  
Mean temperature rise : 100 deg. K in HV side  
: 100 deg. K in LV side  
Insulation class HV/LV side : F  
Fire behavior class : F1  
Type of duty : DB  
Degree of protection : IP00  
P.F withstand voltage : 28 kV  
Impulse withstand voltage : 75 kV  
No-load loss : 420 Watt (approx.)  
Load loss at 75 deg.C : 3250 Watt (approx.)  
Impedance : 4%  
Cooling System : ONAN  
Sound power level (LWA) DB : 35dB (A) at 1.m  
Dimensions approx. mm  
Length (A1) : 1130 mm  
Width (B1) : 950 mm  
Height (H1) : 1540 mm  
Total Weight : 1100 KG

Brand: **Betelco**

Origin: CRGO M4 Grade Silicon steel sheet from USA/Posco, Korea HV/LV wires BRB, Bangladesh.  
Other insulated materials and fittings, Italy.

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**SCOPE OF 400A L.T SWITCHGEAR :1Set**

14 SWG Sheet Steel fabricated floor mounting indoor type low voltage switchgear for 3 Phase 4 Wire, 50 Hz, /380/415Volts AC systems and shall be supplied complete with TP+N bus bars suitably sized and properly insulated, arranged to withstand a short circuit current of 50KA for 1 sec.

The boards are designed and constructed in accordance with BS 5486/IEC439. Bus bars and other live parts are spaced and insulated in accordance with European standards IEC 158, UTE C 20-040, VDE-C 110 for 660V. The front panel of board will contain transparent fiber glass thus the inside will be visible from outside. All MCCB/MCB units & panel boards shall fully comply regulations of the 15<sup>th</sup> edition IEE wiring regulation for isolation and switching.

The boards are factory assembled complete with all wiring, metal parts bonded ground paints and finished with two coats anti-rust paint, Louver with filter, Exhaust Fan with timer/temperature sensor, Push lock etc.

The complete switchboard shall consist of:

**INCOMING:**

1 no. 400A 36KA TP 415 V, 50 Hz, MCCB with adjustable over current and magnetic short circuit protection. Maker : **ABB, Italy**.

1 no. Voltmeter (0-500V) with selector switch.

1 no. Ammeter (0-400A) with selector switch.

3 nos LV Current Transformer 400/5A

3 phase Indicating Lamps Red/Yellow/Blue

7 nos SP MCB for control fuse

2 nos Fan with louver & dust filter

**OUTGOING:**

4 nos 100A 18KA TP Moulded Case Circuit Breaker with adjustable thermal overload and magnetic short circuit protection. Maker: **ABB, Italy**

1 no. 250A 36KA TP Moulded Case Circuit Breaker with adjustable for PFI thermal overload and magnetic short circuit protection. Maker: **ABB, Italy**

1 no. 200A 36KA TP Moulded Case Circuit Breaker with adjustable thermal overload and magnetic short circuit protection. Maker: **ABB, Italy**

16 nos 63A 6KA TP Miniature Circuit Breaker with adjustable thermal overload and magnetic short circuit protection. Maker: **ABB, Italy**

01 Set 400A, TP+N+1/2 E bus bar suitably sized.

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**SCOPE OF 250A ELT SWITCHGEAR : 1Set**

14 SWG Sheet Steel fabricated floor mounting indoor type low voltage switchgear for 3 Phase 4 Wire, 50 Hz, 380/415Volts AC systems and shall be supplied complete with TP+N bus bars suitably sized and properly insulated, arranged to withstand a short circuit current of 50KA for 1 sec.

The boards are designed and constructed in accordance with BS 5486/IEC439. Busbars and other live parts are spaced and insulated in accordance with European standards IEC 158, UTE C 20-040, VDE-C 110 for 660V. The front panel of board will contain transparent fiber glass thus the inside will be visible from outside.

All MCCB/MCB units & panel boards shall fully comply regulations of the 15<sup>th</sup> edition IEE wiring regulation for isolation and switching.

The boards are factory assembled complete with all wiring, metal parts bonded ground paints and finished with two coats anti-rust paint, Louver with filter, Exhaust Fan with timer/temperature sensor, push lock etc.

The complete switchboard shall consist of:

**INCOMING:**

1 no. 400A 36KA TP 415V, 50 Hz, MCCB with adjustable over current and magnetic short circuit protection. Maker : **ABB, Italy**.

1 no. Voltmeter (0-500V) with selector switch.

1 no. Ammeter (0-400A) with selector switch.

3 nos LV Current Transformer 400/5A with suitable accuracy and burden

3 phase Indicating Lamps Red/Yellow/Blue

7 nos SP MCB for control fuse

2 nos Fan with louver & dust filter

**OUTGOING:**

4 nos 100A 25KA TP Moulded Case Circuit Breaker with adjustable thermal overload and magnetic short circuit protection. Maker: **ABB, Italy**

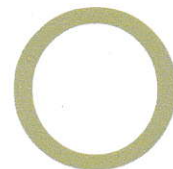
16 nos 63A 6KA TP Miniature Circuit Breaker with adjustable thermal overload and magnetic short circuit protection. Maker: **ABB, Italy**

01 Set 400A, TP+N bus bar suitably sized.

**6) SCOPE OF 150 KVAR AUTOMATIC PFI PLANT: 1 Set**

Automatic Power Factor Improvement Plant 150 KVAR in 6 steps. Sheet steel fabricated, floor mounting tropicalized design, indoor type, low tension switchgear for 3 phase, 4 wire, 50 Hz, 380/415 Volts AC systems and shall be supplied complete with TP+N bus-bars suitably sized and properly insulated arrange to withstand & short current of 50KA for 1 sec.

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The boards are designed and constructed in accordance with BS 5486/IEC 439. The front panel of board will contain transparent fiber glass thus the inside will be visible from outside.

Bus-bars and other live parts are spaced and insulated in accordance with European Standards IEC 158, UTE C20 – 040, VDE – C 110 for 660 Volts.

The boards are factory assembled complete with all wiring, metal parts bonded ground points and finished with two coats of anti-rust paint, Louver with filter, Exhaust Fan with timer/temperature sensor, push lock etc.

All ACB/MCCB units & panel board shall fully comply regulations of the 15<sup>th</sup> edition IEE wiring regulations for isolation and switching.

The complete panel shall consist of:

1 no. 50 KVAR,TP, 415V, 50Hz, Dry type, self healing compact PF capacitors bank with discharge resistor.  
Maker: **Frako, Germany**

2 nos 25 KVAR,TP, 415V, 50Hz, Dry type, self healing compact PF capacitors bank with discharge resistor.  
Maker: **Frako, Germany**

2 nos 12.5 KVAR,TP, 415V, 50Hz, Dry type, self healing compact PF capacitors bank with discharge resistor.  
Maker: **Frako, Germany**

1 no. 7.5 KVAR,TP, 415V, 50Hz, Dry type, self healing compact PF capacitors bank with discharge resistor.  
Maker: **Frako, Germany**

3 nos 5 KVAR,TP, 415V, 50Hz, Dry type, self healing compact PF capacitors bank with discharge resistor.  
Maker: **Frako, Germany**

1 no. 2.5 KVAR,TP, 415V, 50Hz, Dry type, self healing compact PF capacitors bank with discharge resistor(**direct**). Maker: **Frako, Germany**

3 nos 25A, triple phase air contactor for 5 & 10Kvar capacitor. Maker: **ABB, EU**

1 no. 40A, triple phase air contactor for 25Kvar capacitor. Maker: **ABB, EU**

2 nos 80A, triple phase air contactor for 50Kvar capacitor. Maker: **ABB, EU**

3 Set 20A HRC Fuse/MCB,LS

1 Set 40A HRC Fuse/MCB,LS

1 Set 63A HRC Fuse/MCCB,LS

2 Set 160A HRC Fuse/MCCB,LS

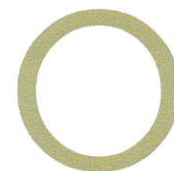
6 nos Start Push Button

6 nos Stop Push Button

6 nos Indicating Lamp.

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1 no. Auto manual selector switch with adder block.

2 nos Control relay with base

3 nos Fuse carrier with fuse for control circuit.

1 no. 6 Steps reactive power regulator which performs the switching of capacity bank in automatic power factor correction equipments depending on changes of reactive power complete with p.f. Luminescent indicators and digital power factor meter. Maker: **Beluk. Germany**

1 no. LT current transformer of adequate rating & burden.

1 Set TP+N bus bar suitably sized.

#### CONTRACT PRICE:

##### 250 KVA Substation:

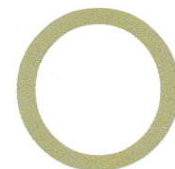
Description	Qty	Unit Price	Total Price
11 KV Drop Out Fuse	01	TK. 7,000.00	TK. 7,000.00
11 KV Lighting Arrestor	01	TK. 7,000.00	TK. 7,000.00
250KVA Oil Immersed Transformer	01	TK.475,000.00	TK. 475,000.00
400A L.T Switchgear	01	TK.330,000.00	TK. 330,000.00
400A ELT Switchgear	01	TK. 205,000.00	TK. 205,000.00
150 KVAR PFI Plant	01	TK. 1,75,000.00	TK. 1,75,000.00
Installation without cable supply	01	TK. 20,000.00	TK. 20,000.00
11 KV Hit Shrink Kit 11	02	TK. 2,000.00	TK. 4,000.00
<b>Grand Total Sub-Station</b>			<b>TK. 12,23,000.00</b>
<b>Special Discount Agreed @</b>			<b>TK. 1,73,000.00</b>
<b>Net Payable for Sub-station</b>			<b>TK. 10,50,000.00</b>

**Amount in Word: Taka Ten Lac Fifty Thousand Only.**

#### GENERAL TERMS & CONDITION:

- 1) The Contractor has acquainted itself sufficiently with the objectives of the Client and the property owner SIMPLETREE THIKNA PROJECT, in regard to this Contract, the relevant organization of the Client and the processes for which the services will be provided. To that end the Client has provided the Contractor with sufficient and accurate information and will' if requested, provide further information to the Contractor, provided such information is available to the Client.
- 2) The owner appointed a consultant, named Volumezero Ltd , having its office at House – 98, Road - 25, Block - A, Banani, Dhaka to manage the work to be executed by the contractor, in which the contractor must follow the instructions of the consultant and discuss or report any technical or other issue influencing the timeline or budget of the project immediately to the Consultant/Client. The contractor should follow the design and drawings as a guideline to execute the Electrical work.
- 3) The Contractor has to maintain a permanent measurement book at the site where the actual measurements of executed works will be noted. The measurements are only valid if signed and countersigned by the Contractor, the Consultant and the Client/these documents will be submitted along with the running invoices.

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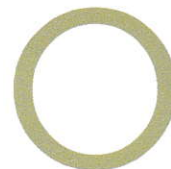
- 4) The contractor will have to submit the copy of LC, bill of entry, Chamber of commerce certificate, manufacturer's warranty certificate mentioning serial number and country of manufacturing of each item.
- 5) The Contractor becomes fully responsible for the safety and security of the site, the workers and the materials for the substation. In case any pilferage, the contractor will responsible for any loss or damage.
- 6) The Contractor must strictly maintain the quality as per the specifications mentioned against each individual item in the bid document and as per the instructions of the Client or Consultant. In case of any deviation due to non-availability of materials as mentioned in the bid document, the Contractor can only substitute materials of a better quality than mentioned with prior approval.
- 7) If any work or material after executing the work is found to be not as per specification or has not yet been approved by the Client or the Consultant, the Contractor is bound to replace items within next 7-days or re-do the work at their own expenses.
- 8) No Child labor will at any time for any reason be permitted on the site. If, at any time, child labor is found to be executed, the client reserves the right to stop the work immediately.
- 9) Labor accommodation will be under supplier's arrangement and cost.
- 10) Necessary tools, equipment & scaffolding for this work will be under supplier's arrangement and cost.
- 11) For this project, different contractors will be appointed for different works to be executed. Each contractor is specifically bound to coordinate and cooperate with each other for the benefit of the project and to respect each other's advantages and limitations during execution of the work. All the contractors are expected to maintain a good and respectful relation together for the benefit of the project. Any nuisance caused by any contractor will officially be reported to the concerned authorities and if necessary legal action will be taken within the framework of the Law of Bangladesh. If any contractor damages the work of other contractors, the costs for rectification will be deducted from the bill of the contractor who caused the damage.

#### Provision of services

1. Except with the prior written of the Client, the Contractor shall not be entitled to have the services performed by any other consent of the Contractor's staff than those agreed in advance.
2. If the services that the Contractor has to provide under the Contract are made demonstrably more onerous as a result of additional requirements on the part of the Client, this shall constitute unforeseen work, which shall be eligible for payment.
3. Payment shall be made for unforeseen work only if a prior written instruction by The Client/consultant has been issued in respect of that work.
4. If the Contractor knows or should know, or if it may or must be expected, that the service will not be provided at the agreed time or will not be provided at all, the Contractor shall notify

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the Client/Consultant of this fact within 07(Seven) days stating the cause of the delay and the measures, the Contractor proposes in order to provide that service subsequently.

5. Neither party shall be entitled to require compliance with an agreed time limit for performance or to demand forfeiture of a related fine in respect of any days in which the time limit is exceeded as a result of:
- Force majeure and/or
  - Default on the part of the other party and/or
  - A pre-agreed extension of the time limits, due, for example, to the issue of a commission additional works.

#### COMPLETION PERIOD:

Total completion period for Supply, Installation, Testing & Commissioning of Electrical system as per following from the date of work order:

- Detail Engineering : 2 days from Work order i.e **November 23, 2016**
- Shop drawings : 2 day from Work order i.e **November 23, 2016**
- All equipments delivery : 20 days from the date of work order i.e. **December 10, 2016**
- Placement, Alignment & installation of the System : maximum 30 days from the date of work order i.e **December 20, 2016**.
- Testing & Commissioning : 20 days from work order i.e **December 31, 2016** (expecting all connection process on time).

Total Completion period is maximum 1.25 months (delivery by 20days & installation by 10 days and another 10 days for DESCO connection) from the date of work order. A penalty of Taka 2,000/day will be charged for any delay in handing over the substation from the above agreed dates.

Licensing clearance from licensing board to be arranged by Cross world. All civil works to be done by the client. Any kind of logistical help to be provided to the client from Cross world end.

#### Payment:

- 30% in advance along with work order
- 30% when equipment delivered at site
- 20% after installation
- 20% after commissioning

#### Price Basis: Up to site delivery.

#### VAT & AIT:

VAT for only locally manufactured items & labor cost will be paid by the Client, i.e Spacezero Limited.

The contractor will provide 2 invoices separately for both imported items and locally manufactured items.

The contractor will have to submit the copy of LC, VAT, bill of entry, truck challan to the client for imported items.

~~AIT deduction will be done as per government law.~~

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**Warranty:** 12 months for any manufacturing defects from the date of supply upon commissioning

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**Country of Origin:** All Sub-Station Equipment is of European Origin. And they have to provide manufacturing certificate of MCB/MCCB along with bill.

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We request you to expedite the matter as top priority basis.

Thanking you.

Sincerely yours

S A Chowdhury Sohel  
Director  
Spacezero Ltd