



IBRA OIL MILLS LTD.

Date : _____

Reference: IOML/SS/CPL/0107/2017

Date: 20 July, 2017

To

CEO

Cross-world power ltd

House No: 06, Road# 92, Gulshan-2, Dhaka-1212

Subject: Work order for supply and installation, Testing & commissioning of 800 KVA Sub-station with OLTC.

Dear Sir,

We are pleased to get sales offer from you as reference no: CPL/SS/TIS/0082

Dated: 08 April, 2017. After discussion with you & your team we fixed up the following items, price & technical specifications:

SL #	Descriptions	Qty.	Unit	Unit price In Taka	Total price In Taka
01)	<u>11kV Drop-Out Fuse :</u> -Cost of complete 11KV Drop-out fuse as per attached technical specifications.	1	Set	8,000.00	8,000.00
02)	<u>11kV Lightning Arrestor :</u> -Cost of complete 11KV Lightning Arrestor as per attached technical specifications.	1	Set	8,000.00	8,000.00
03)	<u>11kv HT Switchgear VCB:</u> -Cost of completer HT Switchgear as per attached technical specifications.	1	Set	550,000.00	550,000.00
04)	<u>800kVA Oil Immersed Transformer with OLTC</u> -Cost of 800 KVA Oil Immersed X-Former as per attached technical specifications.	1	No	1,950,000.00	1,950,000.00
05)	<u>LT Switchgear - 1600A :</u> -Cost of complete LT-1 Panel as per attached technical specifications.	1	Set	844,000.00	844,000.00
06)	<u>480 kVAR Auto/Manual PFI plant :</u> -Cost of component for 480 KVAR PFI Plant asper attached technical specifications.	1	No	540,000.00	540,000.00
Total				Total Taka =	3,900,000.00

After discussion the price:

3,750,000.00

In Words: Thirty seven lac fifty thousand taka only.

Corporate Office : House #9, Road No # 01, Block # G, Halishahar, Chittagong, Bangladesh. Cell : 01766-696569

Factory : Bogra Bazar, Sherpur, Bogra, Bangladesh. Cell : 01766-696569-65, 01766-696600



IBRA OIL MILLS LTD.

Date

TERMS & CONDITIONS :

- 01) Delivery** : Within 30 days after receipt of confirmed order & payment as per clause # 2.
- 02) Payment** : 10% A/C payable cheque along with order & remaining
50% at the time of taking delivery.
30% after Installations
10% after testing & commissioning.
- 03) Fabrication & assembly** : Fabrication & assembly will be done at CPL factory & CPL will provide necessary installation guideline & drawings to buyer.
- 04) Guarantee** : We guarantee the goods of our supply against any defects in materials and workmanship during manufacturing for a period of 01 year from the date of supply subject to non-repairing/dismantling equipments without our prior permission.
- 05) After-sales service** : As per suppliers work order technical persons will be available within 24 hrs. after notice for any problems related with CPL supplied equipments & spares. If no response from supplier, buyer can claim damage charge.

Thanking you.

For
Ibra Oil Mills Ltd

Engr. Shahidul Islam
Managing Director



IBRA OIL MILLS LTD.

TECHNICAL SPECIFICATION

01) 11kV Drop-Out Fuse : 1 Set.

11kV Drop -Out Fuse of following specifications :-

Rated voltage (nominal)	: 11kV
Rated max. voltage	: 15kV
Rated current (conti.) RMS	: 100A
Interrupt current RMS	: 10kA
Rated frequency	: 50Hz
BIL	: 75kV
Withstand test voltage :	
Dry 1 Min.	: 33kV
Wet, 10 sec	: 30kV

02) Lighting Arrestor : 1 Set.

11kV Lighting Arrestor of following specification :-

Rated voltage (Nominal)	: 9kV
Rated system voltage	: 12kV
Frequency	: 50Hz
Minimum spark over (Rms)	: 14kV
Maximum spark over (Rms)	: 40kV
Max. impulse spark (crest)	: 45kV
Withstand voltage	
(Power frequency 1 Min. dry)	: 28kV
Withstand voltage	
(Power frequency 10 sec. wet)	: 24kV
Nominal discharge current	: 5kA
Impulse current withstand	: 55kA



IBRA OIL MILLS LTD.

03) 11 KV HT Switchgear Vacuum Circuit Breaker (VCB) : 1 SET.

Date

This specification cover the supply of 11KV indoor, metal enclosed switchgear according to IEC publication-298

The medium voltage switchgear panel shall be used for secondary distribution sub-station upto 12KV and suitable for an ambient temperature of 45 deg.C and rated rupture capacity of 350 MVA complete with all accessories, diagrams, levels, wirings & terminals.

The 11 KV, 350 MVA rated switchboard would comply compulsory electricity regulations by standards. All cubicles are fitted with security interlocks and earthing switch.

The erection of the panel can be done directly on the levelled floor. Cable trenches are necessary. Cables can easily installed from the bottom side of the panel.

The design is done to allow safe operation in extremely tropical climate conditions :

Technical Data :

Service voltage	: 11KV
Rated voltage	: 12KV
Rated current of busbars	: 1250A
Rated current of circuit breaker	: 630A

Insulation level :

Impulse withstand voltage 1.2/50 micro-sec.	: 75KV (Peak)
Power frequency withstand voltage/1 min.	: 28KV rms.

The equipment proposed under this offer has been designed, manufactured & tested in accordance with the following applicable IEC standards.

- common clause for high voltage switchgear stand: : IEC 694
- high voltage switchgear in metallic enclosure : IEC 298
- high voltage ac circuit breakers : IEC 56
- ac switches and earthing switches : IEC 129
- high voltage switches : IEC 265
- high voltage combined switch/fuse for ac current : IEC 420
- current transformers : IEC 185
- voltage transformers : IEC 186
- high voltage fuses : IEC 282
- control monitoring : IEC 801

The metal clad Draw out type switchgear bitoron - 12 W made

in accordance with IEC 298 (Compartmented switchgear)

shall contain the following :

- 1 630A, 12KV, 25KA ,rated triple pole 50Hz, Drawout type VCB with motor operated mechanism, over voltage & under voltage protection, tripping coil & axiliary closing & shunt release, contacts and interlocked earth switch.

Brand : ABB, Italy



IBRA OIL MILLS LTD.

Date

- 3 Cast resin insulated dry type 11KV double core current transformer, ratio : 60/5/5A.
Core 1 : 10VA, class 0.5M5 for metering
Core 2 : 15VA, class 10P10 for protection
Brand : Siemens, Germany

- 2 Dry type cast resin insulated potential transformer for open delta connection.
Ratio : 11000/110V
Burden : 50VA, Class : 0.5
Brand : Siemens, Germany

- 1 TP MCB for PT secondary protection.

Protection, Measurement and control unit :

- 1 Microprocessor based Protection unit having :
- Overcurrent (ANSI code 50/51) protection.
- Earth fault (50N/51N) protection .
- 11 Indications of different parameters.
- 1 reset key to clear faults and to reset.
The tripping characteristics of the protection unit shall be of IDMT nature with a setting possibility to 16 IDMT tripping curves.

Brand: ABB, EU

- 1 Power Analyzer Meter
Brand: ABB, EU
- 1 6A TP MCB for PT secondary protection.
- 1 3 Indicating Lamp
- 1 ON Push
- 1 OFF Push
- 1 ON Indicating Lamp
- 1 OFF Indicating Lamp
- 1 Panel Heater with thermostat.
- 1 (0-15KV) KV Meter with Selector Switch.
- 1 (0-100A) Ammeter with Selector Switch.

ORIGIN : ALL ABOVE COMPONENTS ARE OF EUROPEAN ORIGIN AND ASSEMBLED IN BANGLADESH BY CROSS WORLD POWER LTD.

Corporate Office : House #9, Road No # 01, Block # G, Haliashahar, Chittagong, Bangladesh. Cell : 01766-696569

Factory : Bogra Bazar, Sherpur, Bogra, Bangladesh. Cell : 01766-696569-65, 01766-696600



IBRA OIL MILLS LTD.

04) 800 KVA TRANSFORMER WITH OLTC : 1 No.

Date

3 Phase oil immersed, naturally air cooled transformer according to IEC 76 standard with 3 HT bushings and 4LT Bushings, arching horn, conservator, oil level indicator, plugs for oil filling, sampling and draining, lifting lugs & with first filling of oil in Transformer as per Standard fittings, 4 flat bi-directional rollers

Technical Data :

Rated Capacity	: 800 KVA
Rated Frequency	: 50 Hz.
Rated Voltage,	
-Primary	: 11000 V
-Secondary	: 415 V/240V at no load
BIL	
-Primary	: 75 KV
-Secondary	: 2.5 KV
Vector Group	: DYn11
On-load tap changer	: +1x2.5%, 0, -3x2.5%
Tap changing	: On HV side on-load 8step 9 position Max current 200A
Interphase connection	: Delta
Dielectric strength	: 28 KV (for 1 min)
LV winding	
-Rated Voltage	: 415/240V
Interphase connection	: Star
Neutral	: Fully insulated & brought out
Dielectric strength	: 3 KV (for 1 min)
Ambient Temp.	: 40° C
Temperature rise	
-in oil	: 60° C
-in coil	: 65° C
No Load Loss	: 1300 W
Full Load Loss	: 9800 W
Impedance	: 6%
Installation	: Indoor/Outdoor
Cooling	: ONAN
Conductor	: Copper

Brand: CPL.

Origin:Core: M4 Grade Silicon steel sheet POSCO, KOREA/UGO, USA
Coil : Copper, HV/LV wires BRB/ Gazi, Bangladesh.
Oil : Hyrax, Malaysia/Sabita. India.
Insulated materials and fittings, Italy./Weidman Switzerland.
OLTC- CPR, Idia.

Corporate Office : House #9, Road No # 01, Block # G, Haliashahar, Chittagong, Bangladesh. Cell : 01766-696569

Factory : Bogra Bazar, Sherpur, Bogra, Bangladesh. Cell : 01766-696569-65, 01766-696600



IBRA OIL MILLS LTD.

Date

05) LT SWITCHGEAR : 1 Set.

16SWG Sheet steel fabricated, floor mounting, Powder Coated, tropicalized design, indoor type, low tension switchgear for 3 phase, 4 wire, 50 Hz, 380/415V AC system & shall be supplied complete TP + N busbars suitably sized & properly insulated arrange to withstand & short current of 50kA for 1 sec. The boards are designed & constructed in accordance with BS5486/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.

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

The panel shall comprise of the following .

INCOMING.

- 1 1600A, 3P, 66KA, 50/60Hz, 415V, fixed chasis (ACB) with (From PDB/REB) Microprocessor Based Protection Unit having - adjustable over current & short circuit protection under voltage Long Time & Short time delay settings Shunt trip Coils , Gear Motor
Brand :ABB, Italy.
- 1 1600A, 3P, 66KA, 50/60Hz, 415V, fixed chasis (ACB) with (From Gen Set) Microprocessor Based Protection Unit having - adjustable over current & short circuit protection under voltage Long Time & Short time delay settings Shunt trip Coils , Gear Motor
Brand :ABB, Italy.
- 6 1250A/5 CT
- 6 Phase indicating lamp RED/YELLOW/BLUE.
- 2 6A, TP MCB for the protection of control circuit
- 2 Set Enclosure
- 1 Set 1600A, TPN + 1/2E copper busbar suitably sized
- 1 Ameter with selector switch (0-1600A)
- 1 Voltmeter with selector switch (0-500V)
- 1 Set Electrical Interlocked by relay and timer.

OUTGOING :

- 2 320A, TP, 36KA, 415V, 50Hz, (MCCB) with adjustable thermal overload & magnetic short circuit protection
Brand :ABB, Italy. (With proper documents)
- 2 Ameter with CT 320/5A



IBRA OIL MILLS LTD.

Date :

- 1 400A,TP, 36KA,415V,50Hz, (MCCB) with adjustable thermal overload & magnetic short circuit protection
Brand :ABB, Italy. (With proper documents)
- 1 Ameter with CT 400/5A

- 1 160A,TP, 25KA,415V,50Hz, (MCCB) with adjustable thermal overload & magnetic short circuit protection
Brand :ABB, Italy. (With proper documents)
- 1 Ameter with CT 160/5A

- 1 100A,TP, 25KA,415V,50Hz, (MCCB) with adjustable thermal overload & magnetic short circuit protection
Brand :ABB, Italy. (With proper documents)
- 1 Ameter with CT 100/5A

- 1 800A,TP, 50KA,415V,50Hz, (MCCB) with adjustable thermal overload & magnetic short circuit protection
(For PFI)
Brand :ABB, Italy. (With proper documents)

- 1 Set 1600A, TPN+1/2E copper busbar suitably sized 100mmx10mm

06) 480kVAR AUTO/MANUAL PFI PLANT : 1 Set.

16SWG Sheet steel fabricated, floor mounting, Powder Coated, tropicalized design, Automatic power factor improvement plant of 480 kVAR In 12 steps. Sheet steel fabricated, floor mounting, tropicalized design, powder coated, indoor type, PFI Plant for 3 phase, 4 wire, 50 Hz, 380/415V AC system & shall be supplied complete TP + N busbars suitably sized & properly insulated arrange to withstand & short current of 50kA for 1 sec. The boards are designed & constructed in accordance with BS5486/IEC439.

The panel shall comprise of :

- 1 1nos. 5 kVAR, 415V, 50 Hz, 3 Phase, dry type, self healing compact PF capacitors bank with discharge resistor
- 2 2nos. 12.5 kVAR, 415V, 50 Hz, 3 Phase, dry type, self healing compact PF capacitors bank with discharge resistor (1 nos Fixed)
- 2 2nos. 25 kVAR, 415V, 50 Hz, 3 Phase, dry type, self healing compact PF capacitors bank with discharge resistor
- 8 nos. 50(25x2) kVAR, 415V, 50 Hz, 3 Phase, dry type, self healing compact PF capacitors bank with discharge resistor
- 1 1nos. 12A , AC-3 Duty Magnetic contactor for 5kVAR Capacitor Bank.
- 1 1nos. 25A , AC-3 Duty Magnetic contactor for 12.5kVAR Capacitor Bank.

Corporate Office : House #9, Road No # 01, Block # G, Haliashahar, Chittagong, Bangladesh. Cell : 01766-696569

Factory : Bogra Bazar, Sherpur, Bogra, Bangladesh. Cell : 01766-696569-65, 01766-696600



IBRA OIL MILLS LTD.

18 1nos. 50A , AC-3 Duty Magnetic contactor for 25kVAr Capacitor Bank. Date

39 HRC Fuses of adequate rating.

12 Start pushbutton.

12 Stop pushbutton.

12 Indicating lamp.

1 Auto manual selector switch with adder block.

2 Control relay with base.

3 Fuse carrier with fuse for control circuit.

1 12 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. luminiscent indicators and digital power factor meter.

1 1250/5A, CT for PFI

1 Set TP+N busbar suitably sized.

Origin : Capacitor Bank- Epcos, Germany

Relay - Beluk, Germany.

Magnetic Contactor -Hyundai, Korea.

08) EARTHING FOR SUBSTATION

Supply installation , testing and commissioning of 2nos . Copper earthing block with required nos. boring of 70'-80' depth earthing lead 4SWG copper earth continuity conductor with both GI pipe 20' both side running from the bodies of sub-station equipment to earthing block with necessary accessories.