

# **TENDER SPECIFICATION**

**NO: BHE/PW/PUR/IOCI-ELE/1104**

FOR HANDLING AT SITE STORES/STORAGE YARD, TRANSPORTATION TO SITE OF WORK, COMPLETE ERECTION, CHECKING OF CALIBRATION, TESTING, COMMISSIONING AND HANDING OVER OF CABLING, TRANSFORMERS, DAVR, BUS DUCTS, SWITCHGEAR, LIGHTING PACKAGE, AND ASSOCIATED EQUIPMENTS FOR ELECTRICAL PACKAGE FOR 1X30 MW GTG + 1X125 TPH HRSG, BASED CO-GEN, IOCL (IRUP), GUJARAT REFINERY, IOCL VADODARA PROJECT (GT#6).

**AT  
INDIAN OIL CORPORATION LIMITED  
GUJARAT REFINERY, JAWAHAR NAGAR  
VADODARA (GUJARAT)**

**VOLUME :II – PRICE BID**

BOOK NO.



**BHARAT HEAVY ELECTRICALS LIMITED**

**(A GOVERNMENT OF INDIA UNDERTAKING)**

**POWER SECTOR - WESTERN REGION**

**SHREEMOHINI COMPLEX**

**345, KINGSWAY - NAGPUR 440 001**

# BHARAT HEAVY ELECTRICALS LIMITED

(A GOVERNMENT OF INDIA UNDERTAKING)  
POWER SECTOR - WESTERN REGION  
SHREEMOHINI COMPLEX  
345, KINGSWAY - NAGPUR 440 001

## TENDER SPECIFICATION

**NO: BHE/PW/PUR/IOCI-ELE/1104**

FOR HANDLING AT SITE STORES/STORAGE YARD, TRANSPORTATION TO SITE OF WORK, COMPLETE ERECTION, CHECKING OF CALIBRATION, TESTING, COMMISSIONING AND HANDING OVER OF CABLING, TRANSFORMERS, DAVR, BUS DUCTS, SWITCHGEAR, LIGHTING PACKAGE, AND ASSOCIATED EQUIPMENTS FOR ELECTRICAL PACKAGE FOR 1X30 MW GTG + 1X125 TPH HRSG, BASED CO-GEN, IOCL (IRUP), GUJARAT REFINERY, IOCL VADODARA PROJECT (GT#6).

### AT INDIAN OIL CORPORATION LIMITED GUJARAT REFINERY, JAWAHAR NAGAR VADODARA (GUJARAT)

EARNEST MONEY DEPOSIT: Please see Notice Inviting Tender.  
LAST DATE FOR: Please see Notice Inviting Tender.  
TENDER SUBMISSION:

THESE TENDER SPECIFICATION DOCUMENTS CONTAINING **VOLUME-I-Tech Bid**, TECHNICAL BID - VOLUME- I E (SAFETY MANUAL), **VOLUME- II-Price Bid** AND VOLIME-IBCD Rev-01 Rev-01 ARE ISSUED TO:

M/s. ....

PLEASE NOTE:  
THESE TENDER SPECS DOCUMENTS ARE NOT TRANSFERABLE.

For Bharat Heavy Electricals Limited

AGM (Purchase)  
Place: Nagpur  
Date:

**RATE SCHEDULE FOR 1X30MW, IOCL BARODA ELECTRICAL SYSTEMS (TS NO BHE/PW/PUR/VIOCI-ELE/1104)**

Handling at Storage Yard/ Stores, Transportation to Site, Calibration, Erection, Testing, Commissioning, Final Painting and Handing over of Electrical Works of IOCL BARODA and their Auxiliaries etc.

SL. NO.	DESCRIPTION	UOM	QTY	Unit Rate In Figure(In Rs)	Unit Rate In Words (In Rs)	Total Amounts (In Rs)	Applicable Terms of Payments
<b>SECTION-E1A: CABLE TRAYS AND ACCESSORIES</b>							<b>I.1</b>
E1A.1	LADDER TYPE 600 MM (W)x 120 (H) mm	Mtrs.	4,438				
E1A.2	LADDER TYPE 450 MM (W)x 120 (H) mm	Mtrs.	100				
E1A.3	LADDER TYPE 300 MM (W)x 120 (H) mm	Mtrs.	2,750				
E1A.4	LADDER TYPE 150 MM (W) x 120 (H) mm	Mtrs.	125				
E1A.5	PERFORATED TYPE 600MM (W)x 120 (H) mm	Mtrs.	100				
E1A.6	PERFORATED TYPE 450MM (W)x 120 (H) mm	Mtrs.	100				
E1A.7	PERFORATED TYPE 300 MM (W)x 120 (H) mm	Mtrs.	1,375				
E1A.8	PERFORATED TYPE 150 MM (W)x 120 (H) mm	Mtrs.	100				
E1A.9	PERFORATED TYPE 50 MM (W)x 120 (H) mm	Mtrs.	50				
<b>SECTION-E2A : LT POWER CABLES</b>							<b>I.2</b>
E2A.1	4 C X 300 SQ MM ALUMINIUM	Mtrs.	5,000				
E2A.2	4C X 185 SQ MM ALUMINIUM	Mtrs.	4,000				
E2A.3	3C X 185 SQ MM ALUMINIUM	Mtrs.	6,000				
E2A.4	3.5C X 95 SQ MM ALUMINIUM	Mtrs.	4000				
E2A.5	3.5C X 120 SQ MM ALUMINIUM	Mtrs.	500				
E2A.6	3.5C X 50 SQ MM ALUMINIUM	Mtrs.	2000				
E2A.7	3C X 120 SQ MM ALUMINIUM	Mtrs.	3500				
E2A.8	3C X 95 SQ MM ALUMINIUM	Mtrs.	7000				
E2A.9	3C X 70 SQ MM ALUMINIUM	Mtrs.	2500				
E2A.10	3.5C X 35 SQ MM ALUMINIUM	Mtrs.	4000				
E2A.11	1C X 240 SQ MM ALUMINIUM	Mtrs.	1500				
E2A.12	2Cx2.5 SQ MM COPPER	Mtrs.	7500				
E2A.13	1C X 150 SQ MM COPPER	Mtrs.	1500				
E2A.14	1C X 35 SQ MM COPPER	Mtrs.	500				
E2A.15	1C X 6 SQ MM COPPER	Mtrs.	1000				
E2A.16	1C X 240 SQ MM COPPER	Mtrs.	2800				
E2A.17	1C X 1000 SQ MM COPPER	Mtrs.	5400				
E2A.18	2C X 95 SQ MM COPPER	Mtrs.	2500				
E2A.19	3C X 25 SQ MM COPPER	Mtrs.	3500				
E2A.20	3C X 35 SQ MM COPPER	Mtrs.	6500				
E2A.21	3C X 2.5 SQ MM COPPER	Mtrs.	20000				
E2A.22	3C X 16 SQ MM COPPER	Mtrs.	2000				
E2A.23	3C X 10 SQ MM COPPER	Mtrs.	4500				

**RATE SCHEDULE FOR 1X30MW, IOCL BARODA ELECTRICAL SYSTEMS (TS NO BHE/PW/PUR/VIOCI-ELE/1104)**

Handling at Storage Yard/ Stores, Transportation to Site, Calibration, Erection, Testing, Commissioning, Final Painting and Handing over of Electrical Works of IOCL BARODA and their Auxiliaries etc.

SL. NO.	DESCRIPTION	UOM	QTY	Unit Rate In Figure(In Rs)	Unit Rate In Words (In Rs)	Total Amounts (In Rs)	Applicable Terms of Payments
E2A.24	3C X 4 SQ MM COPPER	Mtrs.	12000				
E2A.25	4C X 4 SQ MM COPPER	Mtrs.	23700				
E2A.26	4C X 6 SQ MM COPPER	Mtrs.	5300				
E2A.27	4C X 16 SQ MM COPPER	Mtrs.	12500				
<b>E2B</b>	<b>HT POWER CABLES</b>						<b>1.2</b>
E2B.1	1C X 630 SQ MM COPPER(33KV)	Mtrs.	6,800				
E2B.2	1C X 630 SQ MM COPPER(11KV)	Mtrs.	2,500				
E2B.3	1C X 630 SQ MM COPPER(6.6KV)	Mtrs.	2,400				
E2B.4	3C X 240 SQ MM ALUMINIUM(11 KV)	Mtrs.	1,000				
<b>SECTION-E2C : LT CONTROL CABLES (Generally Unarmoured/Armoured, Screened/Unscreened)</b>							<b>1.2</b>
E2C.1	3C X 6 SQ MM	Mtrs.	800				
E2C.2	3C X 4 SQ MM	Mtrs.	1000				
E2C.3	3C X 2.5 SQ MM	Mtrs.	39300				
E2C.4	5C X 2.5 SQ MM	Mtrs.	9000				
E2C.5	16C X 2.5 SQ MM	Mtrs.	10,000				
E2C.6	19C X 2.5 SQ MM	Mtrs.	4500				
E2C.7	24C X 2.5 SQ MM	Mtrs.	6500				
E2C.8	10C X 2.5 SQ MM	Mtrs.	15500				
E2C.9	12C X 2.5 SQ MM	Mtrs.	27500				
E2C.10	7C X 2.5 SQ MM	Mtrs.	18300				
E2C.11	10Tx0.5 SQMM	Mtrs.	1000				
<b>SECTION-E3 : JUCTION BOXES AND PUSH BUTTON</b>							<b>1.3</b>
E3.1	PB Station(LCS with ammeter) Approx. Dimension 300(L)x450(D)x150(H)mm,	Nos.	50				
E3.2	PB Station(LCS without ammeter) Approx. Dimension 300(L)x450(D)x150(H) mm,	Nos.	50				
E3.3	PB Station(Break glass emergency PB)Approx. Dimension 200(L)x200(D)x150(H) mm,	Nos.	45				
<b>SECTION-E4 : STRUCTURAL STEEL</b>							<b>1.4</b>
E.4.1	Structural Steel fabrication & installation ( MS angle, Channel, Plate etc)	MT	115				
<b>SECTION-E5 A:SWITCHGEARS / MCC /PCC</b>							<b>1.5</b>
E5A.1	33KV Extension station switchgear Board HT-101. Each Extension Board shall have 6 panels and supplied in loose shipping sections. Approx.Overall dimension of Extension Board is 7800 (L)x2500(H)x1300(W)mm, Overall weight is approximately 12.00 MT.	Set	1				
E5A.2	33KV Extension station switchgear Board HT-102. Each Extension Board shall have 6 panels and supplied in loose shipping sections. Approx.Overall dimension of Extension Board is 7800 (L)x2500(H)x1300(W)mm, Overall weight is approximately 12.00 MT.	Set	1				
E5A.3	Single Panel for Existing 33 kV Station Switchgear Board-1. Approx.Overall dimension of single Panel is 1300(L)x2500(H)x1300(W) mm, Approx. Weight is 2 MT.	Set	1				

**RATE SCHEDULE FOR 1X30MW, IOCL BARODA ELECTRICAL SYSTEMS (TS NO BHE/PW/PUR/VIOCI-ELE/1104)**

**Handling at Storage Yard/ Stores, Transportation to Site, Calibration, Erection, Testing, Commissioning, Final Painting and Handing over of Electrical Works of IOCL BARODA and their Auxiliaries etc.**

SL. NO.	DESCRIPTION	UOM	QTY	Unit Rate In Figure(In Rs)	Unit Rate In Words (In Rs)	Total Amounts (In Rs)	Applicable Terms of Payments
E5A.4	Single Panel for Existing 33 kv Station Switchgear Board-2. Approx.Overall dimension of single Panel is 1300(L)x2500(H)x1300(W) mm, Approx. Weight is 2 MT.	Set	1				
E5A.5	<b>415 Volt BOP MCC</b> , Single / Double Front, it consist of 19 no. of panels.Approx Over all dimensions 13760(L)x1254(D)x2500(H) mm, Approx weight is 12.6MT Panels shall be supplied in loose shipping section.	set	1				
E5A.6	<b>415 Volt HRSG MCC</b> Single / Double Front, Approx Over all dimensions 8060x644x2500 mm, Approx weight 2MT , Panels shall be supplied in loose shipping section.	set	1				
E5A.7	<b>415 Volt GT MCC</b> , Single / Double Front, Approx Over all dimensions 10560(L)x1254(D)x2500(H)mm, Approx weight 6.6MT, Panels shall be supplied in loose shipping section.	set	1				
E5A.8	<b>415 Volt AC, MLDB</b> , Single / Double Front,consist of 7 no. of panels, Approx Over all dimensions <b>3260(L)x644(D)x2500(H) mm</b> , Approx Weight 4.9MT, Panels shall be supplied in loose shipping section.	set	1				
E5A.9	<b>110 Volt DC ELDB</b> ,Single / Double Front,consist of 3 no. of panels, Approx Over all dimensions 1660x644x2500 mm Approx Weight <b>2.5MT</b> , Panels shall be supplied in loose shipping section.	set	1				
E5A.10	<b>110 Volt DCDB-1</b> ,Single / Double Front, consist of 6 no. of panels,Approx Over all dimensions 4000x644x2500 mm, Approx Weight <b>2.5MT</b> , Panels shall be supplied in loose shipping section.	set	1				
E5A.11	415 V PMCC-1,it consist of 18 no. of panels,Approx. Dimension (14000(L)x1754(D)x2500(H) mm),weight is approximately 12.6MT	set	1				
<b>SECTION-E5 B : STARTER PANEL/BOXES/POWER DISTRIBUTION BOX/MARSHALLING BOXES</b>							1.5
E5B.1	DC motor starter panels, etc (DC JOP, DC EOP, Seal oil panel,scanner air fan), including resistance boxes. Approx weight 0.5 MT and approx. dimension 1000x800x2415 mm each.	Nos	4				
<b>SECTION-E5C: PANELS/NGT/NGR</b>							1.5
E5C.1	Generator control panel, Overall approx. Dimension 2000(L)x1000(B)x2300(H)mm,approx. weight is 0.8MT	set	1				
E5C.2	Generator Relay panel, Overall approx. Dimension 1600(L)x1000(B)x2300(H)mm,approx. weight is 0.8MT	set	1				
E5C.3	Data Concentrator Panel,Overall approx. dimension is 800(L)x800(B)x2300(H)mm,approx. weight is 0.5MT	set	1				
E5C.5	110V Station Charger(Approx. Dimension 2500(L)x830(D)x2000(H) mm,Wt-2MT)-Total 2panels,200A Chargers,Dual FCBC	set	1				
E5C.6	Potential Transformer Surge Protection Cubicle(Approx. Dimension 2350(L)x1200(B)x2400(H)),approx. weight is 2MT	No	1				
<b>SECTION-E5 D UPS/BATTERIES</b>							1.5
E.5D.1	<b>110 Volt UPS DB</b> ,Single / Double Front,consist of 7 no. of panels Approx Over all dimensions5000x1000x2000 mm, Approx Weight <b>2.5 MT</b> , Panels shall be supplied in loose shipping section.	set	1				
E.5D.2	110V Station Battey-(800AH,88Cells,Ni-Cad battery) Approx. Dimension 4370(L)x830(D)x2500(H)mm,Wt-0.06MT	Set	1				
E.5D.3	110V Station Battey-(300AH,88Cells,Ni-Cad battery).	Set	1				
<b>SECTION-E5E : DIGITAL AUTOMATIC VOLTAGE REGULATOR FOR BRUSHLESS EXCITAION SYSTEM</b>							1.5
E.5F.1	Transportation from store / storage yard to erection site , Erection, Assembly, Testing & Commissioning of Digital Excitation Equipments / System , System consist of GTG DAVR panels & accessories as per tender specification.	Set	1				
<b>SECTION-E5F MISCELLANEOUS EQUIPMENTS</b>							
E5F.A	<b>ILLUMINATION PACKAGE (LIGHTING SYSTEM) ,type of fixture/lamp/accessories</b>						1.5
E5F.A.1	Industrial type Bulk head luminaire with die cast aluminium LM6 body having enameled finish,with prismatic front glass,wire guard,tropicalized gaskets,BC lamp holder suitable for 10W CFL lamp and 110v DC supply.Fixture should be complete with suitable DC to AC convertor -Surface/Pole mounted.	Nos.	50				
E5F.A.2	Flame proof Industrial type Bulk head luminaire with cast aluminium alloy LM6 body having stove enameled finish suitable for 10W CFL lamp and 110V DC supply.Fixture should be suitable for hazardous area gas group IIA & IIB zone 1&2 and shall be complete with suitable DC to AC convertor-Surface/Pole mounted.	Nos.	20				
E5F.A.3	Down light luminaire suitable for 18W CFL lamp and 110V DC supply.Fixture should be complete with suitable DC to AC convertor-Recess mounted.	Nos.	5				
E5F.A.4	Industrial type general purpose luminaire with high efficiency electronic ballast,MS sheet steel housing (CRCA) with stove enamel finish and vitreous enameled white reflector suitable for 2x36 W CFL Lamp-surface mounted.	Nos.	100				
E5F.A.5	Industrial type corrosion proof luminaire with high efficiency electronic ballast,FRP housing and clear acrylic cover suitable for 2x36 W flourescent lamp-surface mounted.	Nos.	5				
E5F.A.6	600x600 mm Recess mounted decorative mirror optic luminaire with anodized aluminium reflector and with paralite P5 louvers for glare free operation suitable for 2x 36 W CFL Lamp.	Nos.	30				

**RATE SCHEDULE FOR 1X30MW, IOCL BARODA ELECTRICAL SYSTEMS (TS NO BHE/PW/PUR/VIOCI-ELE/1104)**

**Handling at Storage Yard/ Stores, Transportation to Site, Calibration, Erection, Testing, Commissioning, Final Painting and Handing over of Electrical Works of IOCL BARODA and their Auxiliaries etc.**

SL. NO.	DESCRIPTION	UOM	QTY	Unit Rate In Figure(In Rs)	Unit Rate In Words (In Rs)	Total Amounts (In Rs)	Applicable Terms of Payments
E5F.A.7	Industrial type high performance integral high bay luminaire with anodized aluminium reflector suitable for 400W HPSV tubular lamp.Fixture should be complete with totally enclosed reflector and cable gland suitable for 3Cx2.5 sqmm Cu cable.	Nos.	1				
E5F.A.8	Industrial type high performance integral high bay luminaire with anodized aluminium reflector suitable for 400W HPMV tubular lamp.Fixture should be complete with totally enclosed reflector and cable gland suitable for 3Cx2.5 sqmm Cu cable.	Nos.	12				
E5F.A.9	Industrial type Non-integral well glass luminaire with cast aluminium alloy mounting piece and sheet steel Al.canopy with stove enamel,white inside and grey outside reflector,heat resistant glass and wire guard suitable for 150W HPSV lamp in complete with control gear box,eyebolt and bracket for suitability of suspension/ceiling/pole mounting.	Nos.	30				
E5F.A.10	Flame proof Industrial type Integral well glass luminaire with cast aluminium alloy mounting piece and sheet steel Al.canopy with stove enamel,white inside and grey outside reflector,heat resistant glass and wire guard suitable for 125W HPMV lamp in complete with eye bolt and bracket for suitability of suspension/ceiling/pole mounting and fixture shall also suitable for hazardous area gas group IIA & IIB Zone1 & 2.	Nos.	100				
E5F.A.11	Industrial type Integral well glass luminaire with cast aluminium alloy mounting piece and sheet steel Al.canopy with stove enamel,white inside and grey outside reflector,heat resistant glass and wire guard suitable for 125W HPMV lamp in complete with eye bolt and bracket for suitability of suspension/ceiling/pole mounting	Nos.	150				
E5F.A.12	Street light luminaire suitable for 125W HPMV tubular lamp with cast Al.housing stove enamelled white inside and grey a pair of Al.anodized reflector and highly transparent clear acrylic sheet cover with hinge and toggle fastening,neoprene gaskets and integrated prewired ballast and power factor improvement Capacitor etc.	Nos.	25				
E5F.A.13	Street light luminaire with single piece die cast Aluminium body,bowl type aluminium reflector and with heat resistant clear acrylic cover,power factor improvement capacitor etc. suitable for 150MW HPSV tubular lamp.	Nos.	40				
E5F.A.14	Non-integral flood light luminaire with heat resistant toughened glass cover etc. suitable for 2x400W HPSV lamp.	Nos.	16				
E5F.A.15	Flame proof industrial type integral integral flood lighting luminaire suitable for hazardous area gas group IIA & IIB zone 1&2 and also suitable for 400W HPMV lamp.	Nos.	1				
E5F.A.16	18W CFL lamps For SL NO E5F.A.3	Nos.	8				
E5F.A.17	10W CFL Lamps for SI no E5F.A.1 &E5F.A.2	Nos.	80				
E5F.A.18	36W Fluorescent Lamps for E5F.A.4 &E5F.A.5	Nos.	250				
E5F.A.19	36W CFL Lamp for E5F.A.6	Nos.	70				
E5F.A.20	400W HPSV Tubular Lamp suitable for E5F.A.7 & E5F.A.14	Nos.	40				
E5F.A.21	400W HPMV Tubular Lamp suitable for E5F.A.8 & E5F.A.15	Nos.	20				
E5F.A.22	150W HPSV tubular lamp suitable for E5F.A.9 E5F.A.13	Nos.	90				
E5F.A.23	125W HPMV tubular lamp suitable for E5F.A.10, E5F.A.11,E5F.A.12	Nos.	350				
E5F.A.24	6/12/18 way AC/DC Indoor Lighting Panel	Nos.	17				
E5F.A.25	6/12/18 way AC/DC Outdoor Lighting Panel	Nos.	8				
E5F.A.26	Flame proof 6way AC/DC Indoor Lighting Panel suitable for hazardous area Gas group IIA & IIB Zone 1&2	Nos.	2				
E5F.A.27	150x100x100mm 4way Indoor JB with-4nos of 2 Pin TB suitable for 4 sqmm wire(JB shall have IP-55 protection,16SWG sheet steel with cable entry suitable for 3Cx2.5sqmm Cu. Cable along with its DC cable glands).	Nos.	40				
E5F.A.28	4way 200x150x150mm rectangular cast Al JB suitable for Hazardous area gas group IIA &IIB Zone 1&2 with two 1" and 3/4" cable entries along with glands and TB suitable for 4 nos 35 sqmm Al cable & 4nos 2.5sqmm Cu cable.	Nos.	20				
E5F.A.29	4way 200x150x150mm rectangular sheet steel JB with two 1" and 3/4" cable entries along with glands and TB suitable for 4nos 35sqmm Al cable & 4nos 2.5sqmm Cu cable.	Nos.	50				
E5F.A.30	4way 200x150x150mm rectangular Cast steel JB with two 1" and 3/4" cable entries along with glands and TB suitable for 4nos 35sqmm Al cable & 4nos 2.5sqmm Cu cable.	Nos.	20				
E5F.A.31	150x100x100mm Flameproof 4way Indoor JB with-4nos of 2 Pin TB suitable for 4sqmm wire suitable for hazardous area group IIA &IIB zone 1&2 (JB shall have IP-65 protection and LM6 cast aluminium body with cable entry suitable 3Cx2.5sqmm Cu. Cable along with its Flameproof DC cable glands).	Nos.	15				
E5F.A.32	150x100x100mm 4way Outdoor JB with canopy and 4nos of 2 Pin TB suitable for 4sqmm wire (JB shall have IP-55 protection,16SWG sheet with cable entry suitable 3Cx2.5sqmm Cu. Cable along DC cable glands	Nos.	160				
E5F.A.33	150x100x100mm Flameproof 4way Outdoor JB with canopy and 4nos of 2 Pin TB suitable for 4sqmm wire suitable for hazardous area group IIA &IIB zone 1&2 (JB shall have IP-65 protection and LM6 cast aluminium body with cable entry suitable 3Cx2.5sqmm Cu. Cable along with its Flameproof DC cable glands).	Nos.	90				
E5F.A.34	Industrial type general purpose luminaire with high efficiency electronic ballast,MS sheet steel housing(CRCA)with stove enamel furnish and vitreous enameled white reflector suitable for 2x360W Fluorescent lamps-Surface Mounted.	Nos.	100				
E5F.A.35	600x600mm Recess mounted Decorative mirror optics luminaire with anodized aluminium reflector and with paralite P5 louvers for glare free operation for 2x36W CFL lamps.	Nos.	30				
E5F.A.36	Industrial type Corrosion proof luminaire with high efficiency electronic ballast,FRP housing and clear acrylic cover suitable for 2x36W Fluorescent lamp- Surface Mounted.	Nos.	5				
E5F.A.37	7.5 mtrs street lighting pole	Nos.	10				

**RATE SCHEDULE FOR 1X30MW, IOCL BARODA ELECTRICAL SYSTEMS (TS NO BHE/PW/PUR/VIOCI-ELE/1104)**

**Handling at Storage Yard/ Stores, Transportation to Site, Calibration, Erection, Testing, Commissioning, Final Painting and Handing over of Electrical Works of IOCL BARODA and their Auxiliaries etc.**

SL. NO.	DESCRIPTION	UOM	QTY	Unit Rate In Figure(In Rs)	Unit Rate In Words (In Rs)	Total Amounts (In Rs)	Applicable Terms of Payments
E5F.A.38	9.5 mtrs Street Lighting Pole(410SP-54).	Nos.	10				
E5F.A.39	11 mtrs Flood Light Pole(410SP-38).	Nos.	6				
E5F.A.40	4.75 mtrs Pole	Nos.	40				
E5F.A.41	2 Mtr Pole	Nos.	200				
E5F.A.42	Metsec Channel 3 mtrs Length	Nos.	10				
E5F.A.43	1200mm Long 150Deg Bend 50NB Pipe with 2 nos suitable clamp with base.	Nos.	50				
E5F.A.44	3000mm Long 20mmdia GI conduit	Nos.	150				
E5F.A.45	3000mm Long 25mm dia GI conduit	Nos.	1,000				
E5F.A.46	3000mm Long 50mm dia GI conduit	Nos.	20				
E5F.A.47	25mm GI Conduit Bend	Nos.	2,500				
E5F.A.48	25mm GI inspection Bend	Nos.	500				
E5F.A.49	25mm GI Conduit Couplers	Nos.	1,000				
E5F.A.50	3000mm Long 25mm dia.PVC Conduits	Nos.	50				
E5F.A.51	3000mm Long 50mm dia PVC Conduits	Nos.	20				
E5F.A.52	20/25mm Flexible PVC conduit.	Nos.	190				
E5F.A.53	25mm PVC conduit bend	Nos.	50				
E5F.A.54	25mm PVC Conduit couplers	Mtrs.	50				
E5F.A.55	PVC Flexible Connector Suitable for 25mm PVC flexible Conduit	Nos.	400				
E5F.A.56	4 ways conduit branching conduit JB for 25mm GI conduit	Nos.	250				
E5F.A.57	Spring Loaded ball and sockets for 20mm dia GI down conduit .	Nos.	200				
E5F.A.58	6mm x 35mm Long Anchor Bolt with nut and washer-Ring /Bolt type	Nos.	775				
E5F.A.59	6mm x 35mm Long Hook /Half RingType Anchor Bolt with nut ,bolt and washer.	Nos.	200				
E5F.A.60	12.5mm dia X 40mm long Anchor Bolt Straight With Nut & washer-Ring/Hook type	Nos.	50				
E5F.A.61	Saddle with Saddle Bar Suitable for 25mm Dia Conduit with hardware.	Nos.	10,000				
E5F.A.62	Double compression nickle plated brass cable glands 1" for safe area suitable for item no.E5F.A.29	Nos.	50				
E5F.A.63	Double compression nickle plated brass cable glands 3/4" for safe area suitable for item no E5F.A.29	Nos.	50				
E5F.A.64	Double compression nickle plated brass cable glands 1" for hazardous area group IIA & IIB zone 1&2 suitable for item no E5F.A.30	Nos.	25				
E5F.A.65	Double compression nickle plated brass cable glands 3/4" for hazardous area group IIA & IIB zone 1&2 suitable for item no E5F.A.30	Nos.	25				
E5F.A.66	Galvanized Steel Chain	Mtrs.	250				
E5F.A.67	S Hook	Nos.	30				
E5F.A.68	FSB-2 Flush Mounted Switchboards Consisting of 2 no. 15 Amp Piano Type Switch & 15A Receptacle with Switch.(Modular Type).	Nos.	5				
E5F.A.69	FSB-3 Flush mounted Switchboards consisting of 3 no. 15 Amp Piano type switch & 15A receptacle with switch (Modular Type).	Nos.	1				
E5F.A.70	Domestic Type 5/15A receptacle with switch(Flush Mounted Modular)	Nos.	10				

**RATE SCHEDULE FOR 1X30MW, IOCL BARODA ELECTRICAL SYSTEMS (TS NO BHE/PW/PUR/VIOCI-ELE/1104)**

**Handling at Storage Yard/ Stores, Transportation to Site, Calibration, Erection, Testing, Commissioning, Final Painting and Handing over of Electrical Works of IOCL BARODA and their Auxiliaries etc.**

SL. NO.	DESCRIPTION	UOM	QTY	Unit Rate In Figure(In Rs)	Unit Rate In Words (In Rs)	Total Amounts (In Rs)	Applicable Terms of Payments
E5F.A.71	Industrial Metal Clad Type 5/15A receptacle with switch(Indoor type).	Nos.	6				
E5F.A.72	Industrial wheatehproof Metal Clad Type 5/15A receptacle with switch(Outdoor type)	Nos.	20				
E5F.A.73	Industrial metal clad type 5/15A socket with switch suitable for hazardous gas group IIA & IIB zone1 & 2	Nos.	5				
E5F.A.74	63A Welding TPN Receptacles(Safe area)	Nos.	20				
E5F.A.75	63A welding TPN Receptacles(Hazardous area group IIA & IIB Zone 1& 2))	Nos.	5				
E5F.A.76	240V to 24V Supply Module With Hand Lamp and 15mtrs Cable and other accessories	Nos.	5				
E5F.A.77	4-way conduit branching JB for 25mm PVC conduit	Nos.	20				
E5F.A.78	Cable Clamps with Base and hardware(suitable for 3C x 2.5sqmm Armoured cable).	Nos.	30,000				
E5F.A.79	Cable Clamps with Base and hardware(suitable for 3.5C x 35sqmm Armoured cable).	Nos.	3,000				
E5F.A.80	Buried cable	Mtrs.	500				
<b>E5F.B</b>	<b>Flexible Wires(PVC Insulated, Single Core Copper Conductor Flexible Wires)</b>						<b>1.5</b>
E5F.B.1	1.1KV, 1Cx2.5 sq mm ,Red, Yellow, Blue, Black, Green Colour Insulated Cu Flexible wire	Mtrs.	24,500				
E5F.B.2	1.1KV 1Cx4.0 sq mm ,Red, Yellow, Blue, Black, Green, colour Insulated CuFlexible wire	Mtrs.	7,250				
<b>SECTION-E 6 : EARTHING/LIGHTNING PROTECTION STRIPS</b>							<b>1.6</b>
E6.1	8SWG GI wire , Solid	Mtrs.	2850				
E6.2	16SWG GI wire, Solid	Mtrs.	2000				
E6.3	3/8" Dia GI fine wire rope	Mtrs.	1500				
E6.4	5/8" Dia GI fine wire rope	Mtrs.	1500				
E6.5	65 mm dia Pipe Electrodes, 3M long GI,Treated Earth Pit for machine neutral earthing,untreated earth pit for machine body and lighting protection.	Nos.	45				
E6.6	75 x 10 mm GI Strips,	Mtrs.	4000				
E6.7	50 x 6 mm GI Strips,	Mtrs.	2800				
E6.8	35 x 6 mm GI Strips,	Mtrs.	2000				
E6.9	25X3 mm GI Strips	Mtrs.	2,000				
E6.10	10mm dia ,3/8" hot dipped GI wire rope	Mtrs.	250				
E6.11	Copper Pipe Electrodes with Copper Strips (For electronics equipment earthing)	No	25				
E6.12	Vertical Air Termination Rods	No	8				
<b>SECTION -E7: HT BUS DUCTS (SPBD)</b>							<b>1.7</b>
E7.1	11 kV, 3150 AMPS, SP Bus Duct SAT 1-4.(Approx length 21m),Loose items like silicagel Breather pipe,GI Channel Supports,LAVT CUBICLE,NGT,LR,CABLE PANEL and associated accessories.	Sets	1				
<b>SECTION- E8 : OIL FILLED TRANSFORMERS(GT,ST,)</b>							<b>1.8</b>
E8.1	Transportation up to foundation, Assembly, Testing & Commissioning of Three phase <b>55 MVA, 34.5/11 KV,ONAN/ ONAF, OLTC,GTG Generator Transformer</b> including all accessories, piping, cabling etc. (Approx Weight 82MT and Size 10900(L)x5700(B)x7000(H) mm )	No	1				
E8.2	Transportation from stores/ storage yard to erection site , assembly, testing & commissioning of <b>Lighting T/F, 150 KVA , 3 phase, 415 volts / 415volts , ONAN,</b> including all accessories,(Approx Dimension of 1100(L)x600(D)x1500(H) mm,Approx Weight 800 Kg per Transformer,	No	2				

**RATE SCHEDULE FOR 1X30MW, IOCL BARODA ELECTRICAL SYSTEMS (TS NO BHE/PW/PUR/VIOCI-ELE/1104)**

**Handling at Storage Yard/ Stores, Transportation to Site, Calibration, Erection, Testing, Commissioning, Final Painting and Handing over of Electrical Works of IOCL BARODA and their Auxiliaries etc.**

SL. NO.	DESCRIPTION	UOM	QTY	Unit Rate In Figure(In Rs)	Unit Rate In Words (In Rs)	Total Amounts (In Rs)	Applicable Terms of Payments
E8.3	Transportation from stores/ storage yard to erection site, assembly, testing & commissioning of <b>10MVA, 3 phase 33 KV /6.9KV,ONAN,OFTC, Station Auxillary Transformer, 3 PH, Oil Type</b> , including all accessories,NGR, piping, cabling etc(Apprx dim. 6950(L)X5500(B)X5320(H) mm &Approx. WEIGHT-32.5 MT)	No	2				
E8.4	Transportation from stores/ storage yard to erection site, assembly, testing & commissioning of <b>2.0 MVA, 3 phase 33 KV /0.433KV,ONAN/ Auxillary Transformer, Oil filled</b> , including all accessories,NGR, piping, cabling etc(Apprx dim. 3500(L)X3000(D)X3000(H) &WEIGHT-7 MT/Transformer)	No	2				
<b>SECTION-E 9 : ONLY TESTING &amp; COMMISSIONING</b>							<b>1.9</b>
E9.1	Testing and commissioning of 6.6 &11KV HT motors including dryout.	No	4				
E9.2	Testing and commissioning of 415 V LT motors including dry out.	No	30				
E9.3	Generator system testing	Set	1				
E9.4	Electrically (LT) Operated Valves, Dampers and Gates with Actuators, Limit Switches etc. (Regulating & ON/OFF Type).	No	50				
E9.5	RUBBER MAT (3.3 KV) Approx. Dimension 1M x 2M,Wt-1kgs	Nos.	28				
E9.6	RUBBER MAT (11 KV)of Approx Dimension 1M x 2M,Wt-5kgs	Nos.	7				
E9.7	MCT FRAME,(Approx size 800x500 mm)	Nos.	25				
E9.8	FIRE PROOF SEALING(Fire Break coating for HT /LT cables,sealing of cable entry thru conduits/trenches)	SQ.MTE	800				
E9.9	Fire Proof material for sealing of wall/floor openings and panel bottom(suitable for sealing both vertical & horizontal cable operation.)	Cubic meter	800				
E9.10	<b>Trefoil clamps</b> for single core cables-25mm wide 8SWG aluminium strips	Nos.	800				
E9.11	GI conduit(100 or 150MM dia),PVC conduit(200MMdia)-Unit length for GI and PVC conduit is 3mtrs approx.	Nos.	300				
E9.12	Hume pipe(200 NB)-Unit length is 2.5mtrs approx.	Nos.	200				
E9.13	6mm chequered plate	SQ.MTE	100				
<b>SECTIONA 10.0 OTHER ITEMS</b>							
E10A	<b>CABLE DUCTS AND ACCESSORIES PACKAGE</b>						<b>1.10</b>
E10A.1	800mm widthX300 mm Straight Run Duct with accessories including Joining Plate-CAT 1(Unit Length-2.5m approx.)	Nos.	150				
E10.2	800 mm width X 300 mm Height Ducts Equal Tee( type A) with accessories including Joining Plate-CAT 1	Nos.	5				
E10.3	800 mm width X 300 mm Height Ducts Elbow(Horizontal Plan) type A with accessories including Joining Plate-CAT 1	Nos.	5				
E10.4	800 mm X 300 mm Height to 400mm width duct reducer tee (Type-A) with accessories including Joining plate CAT-1.	Nos.	10				
E10.5	800 mm width X 300 mm Height Ducts Elbow(Vertical plan) (Type A) with accessories including Joining Plate-CAT 1	Nos.	5				
E10.6	800 mm width X 300 mm Height Ducts Elbow(Vertical Plane)(TYPE B) with accessories including Joining Plate-CAT 1	Nos.	5				
E10.7	End cover for 800 widthX300 mm Height Cable Ducts.	Nos.	150				
E10.8	400 mm width x 200 mm straight run Ducts with accessories including Joining Plate-CAT 1(Unit Length-2.5m approx.)	Nos.	150				
E10.9	400mm width x 200 mm Height Duct Elbow (Horizontal Plane) Type A with accessories including Joining Plate-CAT 1	Nos.	10				
E10B	<b>HT TERMINATION KIT (XLPE INSULATED, HEAT SHRINKABLE COPPER / ALUMINIUM CABLE)</b>						<b>1.10</b>
E10B.1	33KV, 1C X 630 SQ MM ,Cu. Cable	Nos.	66				
E10B.2	11KV, 1C X 630 SQ MM ,Cu. Cable	Nos.	10				

**RATE SCHEDULE FOR 1X30MW, IOCL BARODA ELECTRICAL SYSTEMS (TS NO BHE/PW/PUR/VIOCI-ELE/1104)**

Handling at Storage Yard/ Stores, Transportation to Site, Calibration, Erection, Testing, Commissioning, Final Painting and Handing over of Electrical Works of IOCL BARODA and their Auxiliaries etc.

SL. NO.	DESCRIPTION	UOM	QTY	Unit Rate In Figure(In Rs)	Unit Rate In Words (In Rs)	Total Amounts (In Rs)	Applicable Terms of Payments
E10B.3	6.6KV, 1C X 630 SQ MM ,Cu. Cable	Nos.	10				
E10B.4	11 KV,1C X 630 SQ MM, Al. Cable	Nos.	36				
E10B.5	6.6 KV, 1C X 630 SQ MM , Al. Cable	Nos.	16				
E10B.6	6.6 KV, 3C X 240 SQ MM , Al. Cable	Nos.	40				
<b>TOTAL AMOUNT IN FIG (In Rs)</b>							
<b>TOTAL AMOUNT IN WORDS Rs.....</b>							