

Subhead-2.1

Substation & Related Works

Item No.	Description of Items	Unit	Unit Rate in Dhaka & Mymensingh Zone (Tk)	Unit Rate in Chattogram & Sylhet Zone (Tk)	Unit Rate in Khulna, Barishal & Gopalganj (Tk)	Unit Rate in Rajshahi & Rangpur (Tk)
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2.1.1 HT (11 KV) SWITCHGEAR

Supply of 11 KV, 3-phase, 50 Hz, indoor type, high tension switchgear complete with Load Break Switch (LBS), 800 A hard-drawn electrolytic copper bus-bars, 1 No. 0-15 KV range digital voltmeter & 1 no. digital ammeter of adequate ranges both with selector switch, 1 no. of panel heater with auto thermostat control switch, manual ON & OFF push button switch and indicators including following components such as LBS, HR.C fuse, CT, PT shall be manufactured & tested as per NEMA / VDE / IEC / JIS / BS Standards along with relevant BDS standard assembled locally in 14 SWG sheet steel clad, dust & vermin proof, free standing, floor mounting, epoxy resin powder coat painted cabinet as per relevant IEC standards and as per accepted / approved by the Engineer-in-charge. Panel board is provided with capacitive information level and all types of danger sign. All doors of panel board are connected by ECC with earthing bus bar.

In case of 630 KVA or above capacity sub-station, the switchgear panel shall have to be furnished with audible alarm & auxiliary relays for sensing signals from buchholz relay and operation of HT switchgear.

CT Ratio (to be chosen as per capacity):-

For 100-150 KVA transformer 10/5

For 200-250 KVA transformer 15/5

For 300-315 KVA transformer 20/5

For 400 KVA transformer 25/5

For 500 KVA transformer 30/5

2.1.1.1 With LBS (Load Break Switch)

1 Set of 11 KV, 630 A (36KA), 50 Hz, triple pole, manually operated off load isolator interlocked with earth switch.

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Item No.	Description of Items	Unit	Unit Rate in Dhaka & Mymensingh Zone (Tk)	Unit Rate in Chattogram & Sylhet Zone (Tk)	Unit Rate in Khulna, Barishal & Gopalganj (Tk)	Unit Rate in Rajshahi & Rangpur (Tk)
	1 Set of 11 KV, 630A (36KA), 50 Hz, spring charged, stored energy mechanism triple pole load break switch (LBS) complete with 3 no's of 11 KV HR.C fuse of suitable Amps. (25KA) with spring operated striker pin plunger for automatic tripping activated by any of the three fuses blow-up.					
	2 Nos. of 11 KV, double pole, cast resin insulated, dry type Potential transformer (P.T.) having ratio 11/0.11, 50VA, class 0.5 for metering.					
	3 Nos. of 11 KV, cast resin insulated, dry type, single core Current transformer (C.T.) having adequate current ratio (compatible with the transformer capacity) burden 10-15VA of class 0.5 M5 for metering.					
	1 No of 415V, 6A (10 KA), 50 Hz. TPMCB for PT secondary protection. Assembled by the valid ISO-9001 certified company having test certificate (within at least 5 years) according to relevant IEC standards from BUET /RUET/ CUET / KUET /DUET/ MIST.	Each	403,085.00	403,085.00	403,085.00	403,085.00

2.1.1.2 With withdrawable type VCB (vacuum circuit breaker)

Item No.	Description of Items	Unit	Unit Rate in Dhaka & Mymensingh Zone (Tk)	Unit Rate in Chattogram & Sylhet Zone (Tk)	Unit Rate in Khulna, Barishal & Gopalganj (Tk)	Unit Rate in Rajshahi & Rangpur (Tk)
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Supply of 11 KV, 3-phase, 50 Hz, indoor type, high tension switchgear complete with Vacuum Circuit Breaker, 800 A hard-drawn electrolytic copper bus-bars, 1 No 0-15 KV range voltmeter & 1 no. ammeter of adequate range both with selector switch, 1 no. of panel heater with auto thermostat control switch, manual ON & OFF push button switch and ON-OFF-TRIP indicators including following components such as VCB, CT, PT, microprocessor controlled IDMT relay shall be manufactured as per NEMA / VDE / IEC / JIS / BS standards along with BDS IEC 60076, PART 1: 2016 shall have test certificate (within 5 years) according to relevant IEC standard assembled locally in 14 SWG sheet steel metal clad, dust & vermin proof, free standing, floor mounting, epoxy resin powder coat painted cabinet as per relevant IEC standards and as per accepted / approved by the Engineer-in-charge. Panel board is provided with capacitive information level and all types of danger sign. All doors of panel board are connected by ECC with earthing bus bar.

In case of 630 KVA or above capacity sub-station, the switchgear panel shall have to be furnished with audible alarm & auxiliary relays for sensing signals from buchholz relay and operation of HT switchgear.

CT Ratio (to be chosen as per capacity) :-

For 500 KVA transformer 30/5/5

For 630 KVA transformer 40/5/5

For 800 KVA transformer 50/5/5

For 1000 KVA transformer 60/5/5

For 1250 KVA transformer 70/5/5

For 1500 KVA transformer 80/5/5

For 2000 KVA transformer 110/5/5

With withdrawable type VCB (vacuum circuit breaker)

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Item No.	Description of Items	Unit	Unit Rate in Dhaka & Mymensingh Zone (Tk)	Unit Rate in Chattogram & Sylhet Zone (Tk)	Unit Rate in Khulna, Barishal & Gopalganj (Tk)	Unit Rate in Rajshahi & Rangpur (Tk)
	<p>1 Set of 11KV, 630 Amps (36KA), 3-phase, 50 Hz, trolley mounted fully withdrawable type Vacuum Circuit Breaker complete with motor operated spring charged stored energy mechanism for auto tripping at 12 / 24 / 48 / 110 volts D.C (without battery) .</p> <p>2 Nos. 11 KV, cast resin insulated, dry type; double pole PT having ratio 11/0.11, burden 50VA, class 0.5 for metering & protection.</p> <p>3 Nos. 11 KV cast resin insulated, dry type, double core CT of adequate current ratio (compatible with the transformer capacity), burden 10-15 VA, first core of class 0.5 M5 for metering and second core of class 10P10 for protection.</p> <p>1 No of Triple pole solid-state microprocessor control IDMT relay with 2 elements of over current and short circuit protection and one for earth fault protection.</p> <p>1 No. 415V, 6A (10KA) TPMCB for PT secondary protection.</p> <p>Assembled by the valid ISO-9001 certified company having test certificate (within at least 5 years) according to relevant IEC standards from BUET /RUET/ CUET / KUET /DUET/ MIST.</p>	Each	1,053,421.00	1,053,421.00	1,053,421.00	1,053,421.00

2.1.2 11 KV RMU (RING MAIN UNIT)

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Item No.	Description of Items	Unit	Unit Rate in Dhaka & Mymensingh Zone (Tk)	Unit Rate in Chattogram & Sylhet Zone (Tk)	Unit Rate in Khulna, Barishal & Gopalganj (Tk)	Unit Rate in Rajshahi & Rangpur (Tk)
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Providing & supply of following metal clad / metal enclosed 11 KV, 3 phase, 50Hz, indoor type high tension double incoming and following number outgoing ring main unit (switchgear) made of sheet steel clad, dust and vermin proof, free standing floor mounting indoor type HT switchgear panel with 800 A, 3 phase hard drawn electrolytic copper bus bars incoming & outgoing both shall have common individual bus bar and all internal wiring and comprising of:

INCOMING FEEDER (both VCB are interlocked)

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11 KV, 31.5KA, 800 A, 3-phase, 50 Hz. metal clad trolley mounted fully withdrawable type vacuum circuit breaker complete with OFF load isolator for each incomer, 1no PT, motor operated spring charged stored energy mechanism for auto tripping at 12/24/48/110 volts DC (without battery) maximum service voltage 12 KV short circuit making current 50 KA having 4 NO+ 4 NC auxiliary contacts, capacitor compensated shunt tripping coil, closing solenoid.

1 No. Cast resin insulated, double pole, Potential Transformer, ratio: 11/11 KV, Class 0.5, 50 VA, (in open delta connection).
 1 No. MCB of adequate rating for PT Secondary Protection.
 3 Nos. Cast resin insulated, 11 KV dry type double cores CT with ratio adequate rating 1st core for metering, 2nd for protection.
 Core 1: 10 VA, Class 0.5M5
 Core 2: 15 VA, Class 10P10.

OUTGOING FEEDER

11 KV, 31.5KA, 800 A, 3-phase, 50Hz, metal clad trolley mounted fully withdrawable type vacuum circuit breaker complete with motor operated spring charged stored energy mechanism for auto tripping at 12/24/48/110 volts DC (without battery) maximum service voltage 12 KV short circuit making current 50 KA having 4 NO+ 4 NC auxiliary contacts, capacitor compensated shunt tripping coil, closing solenoid.

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Item No.	Description of Items	Unit	Unit Rate in Dhaka & Mymensingh Zone (Tk)	Unit Rate in Chattogram & Sylhet Zone (Tk)	Unit Rate in Khulna, Barishal & Gopalganj (Tk)	Unit Rate in Rajshahi & Rangpur (Tk)
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1(set) Cast resin insulated, double pole, potential transformer, ratio: 11/11 KV, Class 0.5, 50 VA, (in open delta connection).

1 No. MCB of adequate rating for PT secondary protection.

3 Nos. Cast resin insulated, 11 KV dry type double core CT with ratio adequate rating 1st core for metering, 2nd for protection
Core 1:10VA, class 0.5M5 core 2:15 VA, class 10P10

3 Nos. Ammeter, adequate rating

1 No Voltmeter, 0-15 KV, with selector switch.

1 No. Triple pole solid state microprocessor operated IDMT relay with 2 (two) over current and 1 (one) earth fault protection element with standard settings.

2 Nos. ON and OFF push Button.

3 No's indicating lamps ON and OFF/TRIP

1 No. Panel heater.

2.1.2.1	Incoming - 2 Outgoing - 2	Each	3,544,330.00	3,544,330.00	3,544,330.00	3,544,330.00
2.1.2.2	Incoming - 2 Outgoing - 3	Each	4,427,805.00	4,427,805.00	4,427,805.00	4,427,805.00
2.1.2.3	Incoming - 2 Outgoing - 4	Each	5,311,279.00	5,311,279.00	5,311,279.00	5,311,279.00
2.1.2.4	Incoming - 2 Outgoing - 5	Each	6,194,754.00	6,194,754.00	6,194,754.00	6,194,754.00

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Item No.	Description of Items	Unit	Unit Rate in Dhaka & Mymensingh Zone (Tk)	Unit Rate in Chattogram & Sylhet Zone (Tk)	Unit Rate in Khulna, Barishal & Gopalganj (Tk)	Unit Rate in Rajshahi & Rangpur (Tk)
2.1.2.5	Incoming - 2 Outgoing - 6	Each	7,078,229.00	7,078,229.00	7,078,229.00	7,078,229.00
2.1.2.6	Incoming - 2 Outgoing - 7	Each	7,961,704.00	7,961,704.00	7,961,704.00	7,961,704.00
2.1.3	SINGLE PHASE TRANSFORMER Supply of following oil-immersed, natural air cooled, 1-phase, 50-Hz, 6.35 KV / 0.24 KV outdoor type distribution transformer having percentage impedance 3-3.5%, basic insulation level (BIL) 75 KV, HT & LV porcelain bushings, transformer tank, oil inlet & outlet valves, earthing terminals, data plate etc. including painting, suitable for connection with 11 KV line at 40°C ambient temperature with maximum temperature rise 60°C, manufactured and tested as per NEMA / VDE / IEC / BS standard along with BDS IEC 60076, PART 1: 2016 as per accepted / approved by the Engineer-in-charge. Manufactured by Govt. of BANGLADESH owned / shared company or the valid ISO-9001 certified company having test certificate (within at least five years) for the required or higher capacity of transformer according to relevant IEC standards from BUET /RUET/ CUET / KUET /DUET/ MIST.					
2.1.3.1	(a) Capacity : 5 KVA (b) No load loss : 50 watts (maximum) (c) Full load loss : 160 watts (maximum)	Each	50,186.00	50,186.00	50,186.00	50,186.00
2.1.3.2	(a) Capacity : 10 KVA (b) No load loss : 70 watts (maximum) (c) Full load loss : 200 watts (maximum)	Each	71,169.00	71,169.00	71,169.00	71,169.00
2.1.3.3	(a) Capacity : 15 KVA (b) No load loss : 80 watts (maximum) (c) Full load loss : 275 watts (maximum)	Each	84,789.00	84,789.00	84,789.00	84,789.00

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Item No.	Description of Items	Unit	Unit Rate in Dhaka & Mymensingh Zone (Tk)	Unit Rate in Chattogram & Sylhet Zone (Tk)	Unit Rate in Khulna, Barishal & Gopalganj (Tk)	Unit Rate in Rajshahi & Rangpur (Tk)
2.1.3.4	(a) Capacity : 25 KVA (b) No load loss : 125 watts (maximum) (c) Full load loss : 375 watts (maximum)	Each	118,042.00	118,042.00	118,042.00	118,042.00
2.1.4	<u>OIL TYPE TRANSFORMER</u> Supply of following oil-immersed, natural air cooled, 3-phase, 50-Hz, 11KV/0.415 KV & 0.24 KV indoor/outdoor type distribution transformer of DYN11 vector group complete with two windings of high conductivity copper having basic impulse insulation level 75 KV , dielectric strength 28 KV (for 1 min), HT & LV porcelain bushings, manual 5 position (0, $\pm 2.5\%$, $\pm 5\%$) standard tap changer, conservator, thermometer, oil inlet & outlet valves, oil level indicator, dehydrating breather, lifting lugs, earthing terminals, wheel, rating and diagram nameplate etc. including painting, suitable for operation at 40°C ambient temperature with maximum temperature rise 60°C, locally manufactured and tested as per NEMA / VDE / IEC / BS standards along with BDS IEC 60076, PART 1 : 2016 as per accepted/approved by the Engineer-in-charge.					
2.1.4.1	(a) Capacity : 50 KVA (b) No load loss : 250 watts (maximum) (c) Full load loss : 1200 watts (maximum) (d) Percentage impedance : 4% @ $\pm 10\%$ at 75°C					
2.1.4.1.1	Manufactured by the valid ISO-9001 certified company having test certificate (within 5 years) for the required or higher capacity of transformer according to relevant IEC standards from BUET /RUET/ CUET / KUET /DUET/ MIST.	Each	264,964.00	264,964.00	264,964.00	264,964.00

Item No.	Description of Items	Unit	Unit Rate in Dhaka & Mymensingh Zone (Tk)	Unit Rate in Chattogram & Sylhet Zone (Tk)	Unit Rate in Khulna, Barishal & Gopalganj (Tk)	Unit Rate in Rajshahi & Rangpur (Tk)
2.1.4.2	(a) Capacity: 100 KVA (b) No load loss : 300 watts (maximum) (c) Full load loss : 1750 watts (maximum) (d) Percentage Impedance : 4% @ ±10% at 75°C					
2.1.4.2.1	Manufactured by the valid ISO-9001 certified company having test certificate (within 5 years) for the required or higher capacity of transformer according to relevant IEC standards from BUET /RUET/ CUET / KUET /DUET/ MIST.	Each	363,570.00	363,570.00	363,570.00	363,570.00
2.1.4.3	(a) Capacity : 150 KVA (b) No load loss : 350 watts (maximum) (c) Full load loss : 2400 watts (maximum) (d) Percentage impedance : 4% @ ±10% at 75°C					
2.1.4.3.1	Manufactured by the valid ISO-9001 certified company having test certificate (within 5 years) for the required or higher capacity of transformer according to relevant IEC standards from BUET /RUET/ CUET / KUET /DUET/ MIST.	Each	481,896.00	481,896.00	481,896.00	481,896.00
2.1.4.4	(a) Capacity : 200 KVA (b) No load loss : 500 watts (maximum) (c) Full load loss : 2800 watts (maximum) (d) Percentage impedance : 4% @ ±10% at 75°C					
2.1.4.4.1	Manufactured by the valid ISO-9001 certified company having test certificate (within 5 years) for the required or higher capacity of transformer according to relevant IEC standards from BUET /RUET/ CUET / KUET /DUET/ MIST.	Each	560,781.00	560,781.00	560,781.00	560,781.00

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Item No.	Description of Items	Unit	Unit Rate in Dhaka & Mymensingh Zone (Tk)	Unit Rate in Chattogram & Sylhet Zone (Tk)	Unit Rate in Khulna, Barishal & Gopalganj (Tk)	Unit Rate in Rajshahi & Rangpur (Tk)
2.1.4.5	(a) Capacity : 250 KVA (b) No load loss : 750 watts (maximum) (c) Full load loss : 4900 watts (maximum) (d) Percentage impedance : 4% @ ±10% at 75°C					
2.1.4.5.1	Manufactured by the valid ISO-9001 certified company having test certificate (within 5 years) for the required or higher capacity of transformer according to relevant IEC standards from BUET /RUET/ CUET / KUET /DUET/ MIST.	Each	649,526.00	649,526.00	649,526.00	649,526.00
2.1.4.6	(a) Capacity : 300/315 KVA (b) No load loss : 800watts (maximum) (c) Full load loss : 5000 watts (maximum) (d) Percentage impedance : 4% @ ±10% at 75°C					
2.1.4.6.1	Manufactured by the valid ISO-9001 certified company having test certificate (within 5 years) for the required or higher capacity of transformer according to relevant IEC standards from BUET /RUET/ CUET / KUET /DUET/ MIST.	Each	748,131.00	748,131.00	748,131.00	748,131.00
2.1.4.7	(a) Capacity : 400 KVA (b) No load loss : 850 watts (maximum) (c) Full load loss : 5200 watts (maximum) (d) Percentage impedance : 4% @ ±10% at 75°C					
2.1.4.7.1	Manufactured by the valid ISO-9001 certified company having test certificate (within 5 years) for the required or higher capacity of transformer according to relevant IEC standards from BUET /RUET/ CUET / KUET /DUET/ MIST.	Each	927,472.00	927,472.00	927,472.00	927,472.00

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2.1.4.8	(a) Capacity : 500 KVA (b) No load loss : 1000 watts (maximum) (c) Full load loss : 5800 watts (maximum) (d) Percentage impedance : 4% @ ±10% at 75°C					
2.1.4.8.1	Manufactured by Govt. of BANGLADESH owned / shared company (GEMCO. Ltd.) or the valid ISO-9001 certified company having type test certificate (within 5 years) for the required or higher capacity of transformer according to relevant IEC standards from any internationally accredited independent laboratory.	Each	1,420,186.00	1,420,186.00	1,420,186.00	1,420,186.00
2.1.4.8.2	Manufactured by the valid ISO-9001 certified company having test certificate (within 5 years) for the required or higher capacity of transformer according to relevant IEC standards from BUET /RUET/ CUET / KUET /DUET/ MIST.	Each	1,069,358.00	1,069,358.00	1,069,358.00	1,069,358.00
2.1.4.9	(a) Capacity: 600 / 630 KVA with buchholz relay. (b) No load loss : 1200 watts (maximum) (c) Full load loss : 7500 watts (maximum) (d) Percentage impedance : 4% @ ±10% at 75°C					
2.1.4.9.1	Manufactured by Govt. of BANGLADESH owned / shared company (GEMCO. Ltd.) or the valid ISO-9001 certified company having type test certificate (within 5 years) for the required or higher capacity of transformer according to relevant IEC standards from any internationally accredited independent laboratory.	Each	1,620,624.00	1,620,624.00	1,620,624.00	1,620,624.00
2.1.4.9.2	Manufactured by the valid ISO-9001 certified company having test certificate (within 5 years) for the required or higher capacity of transformer according to relevant IEC standards from BUET /RUET/ CUET / KUET /DUET/ MIST.	Each	1,301,745.00	1,301,745.00	1,301,745.00	1,301,745.00

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Item No.	Description of Items	Unit	Unit Rate in Dhaka & Mymensingh Zone (Tk)	Unit Rate in Chattogram & Sylhet Zone (Tk)	Unit Rate in Khulna, Barishal & Gopalganj (Tk)	Unit Rate in Rajshahi & Rangpur (Tk)
2.1.4.10	(a) Capacity: 800 KVA with buchholz relay. (b) No load loss : 1400 watts (maximum) (c) Full load loss : 9000 watts (maximum) (d) Percentage impedance : 5% @ ±10% at 75°C					
2.1.4.10.1	Manufactured by Govt. of BANGLADESH owned / shared company or the valid ISO-9001 certified company having type test certificate (within 5 years) for the required or higher capacity of transformer according to relevant IEC standards from any internationally accredited independent laboratory.	Each	2,015,427.00	2,015,427.00	2,015,427.00	2,015,427.00
2.1.4.10.2	Manufactured by the valid ISO-9001 certified company having test certificate (within 5 years) for the required or higher capacity of transformer according to relevant IEC standards from BUET /RUET/ CUET / KUET /DUET/ MIST.	Each	1,683,793.00	1,683,793.00	1,683,793.00	1,683,793.00
2.1.4.11	(a) Capacity: 1000 KVA with buchholz relay. (b) No load loss : 1800 watts (maximum) (c) Full load loss : 12000 watts (maximum) (d) Percentage impedance : 5% @ ±10% at 75°C					
2.1.4.11.1	Manufactured by Govt. of BANGLADESH owned / shared company or the valid ISO-9001 certified company having type test certificate (within 5 years) for the required or higher capacity of transformer according to relevant IEC standards from any internationally accredited independent laboratory.	Each	2,382,315.00	2,382,315.00	2,382,315.00	2,382,315.00
2.1.4.11.2	Manufactured by the valid ISO-9001 certified company having test certificate (within 5 years) for the required or higher capacity of transformer according to relevant IEC standards from BUET /RUET/ CUET / KUET /DUET/ MIST.	Each	1,923,736.00	1,923,736.00	1,923,736.00	1,923,736.00

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2.1.4.12	(a) Capacity: 1250 KVA with buchholz relay. (b) No load loss : 2000 watts (maximum) (c) Full load loss : 15000 watts (maximum) (d) Percentage impedance : 5% @ ±10% at 75°C					
2.1.4.12.1	Manufactured by Govt. of BANGLADESH owned / shared company or the valid ISO-9001 certified company having type test certificate (within 5 years) for the required or higher capacity of transformer according to relevant IEC standards from any internationally accredited independent laboratory.	Each	2,868,226.00	2,868,226.00	2,868,226.00	2,868,226.00
2.1.4.12.2	Manufactured by the valid ISO-9001 certified company having test certificate (within 5 years) for the required or higher capacity of transformer according to relevant IEC standards from BUET /RUET/ CUET / KUET /DUET/ MIST.	Each	2,285,132.00	2,285,132.00	2,285,132.00	2,285,132.00
2.1.4.13	(a) Capacity: 1500 / 1600 KVA with buchholz relay. (b) No load loss : 2200 watts (maximum) (c) Full load loss : 18000 watts (maximum) (d) Percentage impedance : 6% @ ±10% at 75°C					
2.1.4.13.1	Manufactured by Govt. of BANGLADESH owned / shared company or the valid ISO-9001 certified company having type test certificate (within 5 years) for the required or higher capacity of transformer according to relevant IEC standards from any internationally accredited independent laboratory.	Each	3,111,181.00	3,111,181.00	3,111,181.00	3,111,181.00
2.1.4.13.2	Manufactured by the valid ISO-9001 certified company having test certificate (within 5 years) for the required or higher capacity of transformer according to relevant IEC standards from BUET /RUET/ CUET / KUET /DUET/ MIST.	Each	2,749,785.00	2,749,785.00	2,749,785.00	2,749,785.00

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2.1.4.14	(a) Capacity: 2000 KVA with buchholz relay. (b) No load loss : 2400 watts (maximum) (c) Full load loss : 20000 watts (maximum) (d) Percentage impedance : 6% @ ±10% at 75°C					
2.1.4.14.1	Manufactured by Govt. of BANGLADESH owned / shared company or the valid ISO-9001 certified company having type test certificate (within 5 years) for the required or higher capacity of transformer according to relevant IEC standards from any internationally accredited independent laboratory.	Each	4,131,595.00	4,131,595.00	4,131,595.00	4,131,595.00
2.1.4.14.2	Manufactured by the valid ISO-9001 certified company having test certificate (within 5 years) for the required or higher capacity of transformer according to relevant IEC standards from BUET /RUET/ CUET / KUET /DUET/ MIST.	Each	3,420,950.00	3,420,950.00	3,420,950.00	3,420,950.00

2.1.5 DRY TYPE TRANSFORMER

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Item No.	Description of Items	Unit	Unit Rate in Dhaka & Mymensingh Zone (Tk)	Unit Rate in Chattogram & Sylhet Zone (Tk)	Unit Rate in Khulna, Barishal & Gopalganj (Tk)	Unit Rate in Rajshahi & Rangpur (Tk)
	Supply of following dry type cast resin, natural air cooled, 3-phase, 50Hz, 11KV / 0.415 KV & 0.24 KV indoor type distribution transformer of DYN11 vector group having basic impulse insulation level 75 KV, HV & LV bushings, manual 5 position standard tap changer, complete with two windings of high conductivity aluminum foil with insulation material in class H, earthing terminals, temperature sensor with thermometer, thermostat controlled blower fan (if required), lifting lugs, data plate etc. complete as required with maximum 60°C temperature rise and suitable for operation at 40°C ambient temperature, at 75°C full load loss & impedance condition manufactured & type tested as per NEMA / IEC / VDE / BS / JIS standard along with BDS IEC 60076, PART 1: 2016 standards as per approval / acceptance by the Engineer-in-charge.					
2.1.5.1	(a) Capacity : 800 KVA (b) No load loss : 1700 watts (maximum) (c) Full load loss : 7600 watts (maximum) (d) Percentage impedance : 5% @ ±10% at 75°C	Each	2,232,001.00	2,232,001.00	2,232,001.00	2,232,001.00
2.1.5.2	(a) Capacity : 1000 KVA (b) No load loss : 2000 watts (maximum) (c) Full load loss : 8700 watts (maximum) (d) Percentage impedance : 5% @ ±10% at 75°C	Each	3,019,766.00	3,019,766.00	3,019,766.00	3,019,766.00
2.1.5.3	(a) Capacity : 1250 KVA (b) No load loss : 2300 watts (maximum) (c) Full load loss : 10500 watts (maximum) (d) Percentage impedance : 5% @ ±10% at 75°C	Each	3,510,586.00	3,510,586.00	3,510,586.00	3,510,586.00

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Item No.	Description of Items	Unit	Unit Rate in Dhaka & Mymensingh Zone (Tk)	Unit Rate in Chattogram & Sylhet Zone (Tk)	Unit Rate in Khulna, Barishal & Gopalganj (Tk)	Unit Rate in Rajshahi & Rangpur (Tk)
2.1.5.4	(a) Capacity: 1500 / 1600 KVA. (b) No load loss : 2800 watts (maximum) (c) Full load loss : 13500 watts (maximum) (d) Percentage impedance : 6% @ ±10% at 75°C	Each	3,991,896.00	3,991,896.00	3,991,896.00	3,991,896.00
2.1.5.5	(a) Capacity: 2000 KVA (b) No load loss: 3500 watts (Maximum) (c) Full load loss: 16000 watts (Maximum) (d) Percentage Impedance : 6% @ ±10% at 75°C	Each	4,568,915.00	4,568,915.00	4,568,915.00	4,568,915.00
2.1.5.6	(a) Capacity: 2500 KVA. (b) No load loss : 3600 watts (maximum) (c) Full load loss : 19500 watts (maximum) (d) Percentage impedance : 6% @ ±10% at 75°C	Each	5,363,429.00	5,363,429.00	5,363,429.00	5,363,429.00
2.1.5.7	(a) Capacity : 3000/3150 KVA (b) No load loss : 4400 watts (maximum) (c) Full load loss : 24400 watts (maximum) (d) Percentage impedance : 7% @ ±10% at 75°C	Each	6,092,296.00	6,092,296.00	6,092,296.00	6,092,296.00

2.1.6 ENCLOSURE FOR CAST RESIN TRANSFORMER:

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Item No.	Description of Items	Unit	Unit Rate in Dhaka & Mymensingh Zone (Tk)	Unit Rate in Chattogram & Sylhet Zone (Tk)	Unit Rate in Khulna, Barishal & Gopalganj (Tk)	Unit Rate in Rajshahi & Rangpur (Tk)
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The purpose of the enclosure is to provide safety from live parts, protect and make the equipment suitable for indoor conditions, prevent ingress of foreign matters, rodents, snakes etc. The material of enclosure used is CRCA sheet steel MS. The complete structure is rigid and self-supporting. To remove heat from the transformer, its louver has sufficient heat dissipation capability in indoor condition through the year without any additional cooling arrangements. The degree of ingress protection should not be less than IP 21 and fully enclosed type for indoor use:

2.1.6.1	Enclosure (for 100 KVA – 250 KVA dry-type transformer)	Each	153,381.00	153,381.00	153,381.00	153,381.00
2.1.6.2	Enclosure (for 315 KVA – 500 KVA dry-type transformer)	Each	184,057.00	184,057.00	184,057.00	184,057.00
2.1.6.3	Enclosure (for 630 KVA – 800 KVA dry-type transformer)	Each	214,733.00	214,733.00	214,733.00	214,733.00
2.1.6.4	Enclosure (for 1000 KVA – 2000 KVA dry-type transformer)	Each	276,086.00	276,086.00	276,086.00	276,086.00
2.1.6.5	Enclosure (for 2500 KVA – 4000 KVA dry-type transformer)	Each	337,438.00	337,438.00	337,438.00	337,438.00

2.1.7 LT SWITCHGEAR

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Item No.	Description of Items	Unit	Unit Rate in Dhaka & Mymensingh Zone (Tk)	Unit Rate in Chattogram & Sylhet Zone (Tk)	Unit Rate in Khulna, Barishal & Gopalganj (Tk)	Unit Rate in Rajshahi & Rangpur (Tk)
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Supply of 415 V, 3-phase, 50 Hz, indoor type low tension switch-gear of following specification complete with digital voltmeter (0-500V) & ammeter of adequate rating both with selector switch, indicating lamps for ON-OFF and following components (components such as TPMCCBs shall be manufactured according to NEMA / VDE / IEC / JIS / BS standards along with relevant BDS standard shall have type test certificate (within 5 years) according to relevant IEC Standard) assembled locally in 14 SWG sheet steel metal clad, dust & vermin proof, free standing, floor mounting, epoxy resin powder coat painted cabinet as per relevant IEC standards and as per accepted / approved by the Engineer-in-charge.

Panel board is provided with capacitive information level and all types of danger sign. All doors of panel board are connected by ECC with earthing bus bar.

Assembled by the valid ISO-9001 certified company having test certificate (within at least five years) according to relevant IEC standards from BUET /RUET/ CUET / KUET /DUET/ MIST.

circuit Breaker equivalent accepted / approved by the Engineer-in-charge.

2.1.7.1 For 100 KVA transformer

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Item No.	Description of Items	Unit	Unit Rate in Dhaka & Mymensingh Zone (Tk)	Unit Rate in Chattogram & Sylhet Zone (Tk)	Unit Rate in Khulna, Barishal & Gopalganj (Tk)	Unit Rate in Rajshahi & Rangpur (Tk)
	<p>INCOMING</p> <p>1 Set- 415V, 200 amps. TP&NE hard drawn electrolytic copper bus bar.</p> <p>1 No. - 415V, 150 / 160 Amps (25KA), adjustable type TPMCCB for main control with thermal overload & instantaneous electro-magnetic short circuit release.</p> <p>3 Nos. - 415V, 200 / 5 ratio current transformer with suitable accuracy & burden.</p> <p>OUTGOING</p> <p>3 Nos. - 415V, 100A (16KA) TPMCCB with thermal over load & instantaneous electromagnetic short-circuit release. (one for PFI Control)</p> <p>1 No. - 415V, 32 / 30A (16KA) TPMCCB with thermal over load & instantaneous electromagnetic short circuit release.</p>	Each	185,624.00	185,624.00	185,624.00	185,624.00

2.1.7.2 For 150 KVA transformer

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